Measuring up: Canadian Results of the OECD PISA 2018 Study

The Performance of Canadian 15-Year-Olds in Reading, Mathematics, and Science

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Measuring up: Canadian Results of the OECD PISA 2018 Study

The Performance of Canadian 15-Year-Olds in Reading, Mathematics, and Science

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Note of appreciation

The Council of Ministers of Education (Canada) would like to thank the students, teachers, and administrators whose participation in the Programme for International Student Assessment ensured its success. The quality of your commitment has made this study possible. We are truly grateful for your contribution to a pan-Canadian understanding of educational policy and practices in reading, mathematics, and science of 15-year-olds.

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Introduction

The skills and knowledge that individuals bring to their jobs, to further studies, and to society play an important role in determining economic success and overall quality of life, at both the individual and societal level. Today's knowledge-based economy is driven by advances in information and communication technologies, reduced trade barriers, and the globalization of markets, all of which have changed the type of knowledge and skills required for success. As a result, individuals need a strong set of foundational skills upon which further learning can be built.

Education systems play a central role in building this strong base. Students leaving secondary education without a strong foundation may experience difficulty accessing the postsecondary education system or the labour market, and they may benefit less when learning opportunities are presented later in life. Without the tools needed to be effective learners throughout their lives, individuals with limited skills risk economic and social marginalization.

Governments in industrialized countries have devoted large portions of their budgets to provide high-quality schooling. Given these investments, they are interested in the relative effectiveness of their education systems. To address these issues, member countries of the Organisation for Economic Co-operation and Development (OECD), along with partner countries,[1] developed a common tool to improve their understanding of what makes young people — and entire education systems — successful. This tool is the Programme for International Student Assessment (PISA). It measures the extent to which youth, at age 15, have acquired some of the knowledge and skills that are essential for full participation in modern societies.

The Programme for International Student Assessment

PISA is a collaborative effort among member countries of the OECD. It is designed to provide policy-oriented international indicators of the skills and knowledge of 15-year-old students and to shed light on a range of factors that contribute to successful students, schools, education systems, and learning environments (OECD, 2019a). It measures skills that are generally recognized as key outcomes of the educational process. The assessment does not focus on whether students can reproduce knowledge but rather on young people's ability to use their knowledge and skills to meet real-life challenges. These skills are believed to be prerequisites for efficient learning throughout life and for full participation in society.

Information gathered through PISA enables a thorough comparative analysis of the performance of students near the end of their compulsory education. The assessment also permits exploration of the ways that achievement varies across different social and economic groups and the factors that influence achievement within and among countries.

For almost two decades, PISA has brought significant attention to international assessments and related studies by generating data to inform the public and to enhance policy-makers' ability to formulate decisions based on evidence. Canadian provinces have used information gathered from PISA, along with other sources of information such as the Pan-Canadian Assessment Program (PCAP) (see, e.g., O'Grady, Fung, Servage, & Khan, 2018), other international assessments, and their own provincial assessment programs, to inform various education-related initiatives. In Canada, PISA is carried out through a partnership between Employment and Social Development Canada (ESDC) and the Council of Ministers of Education, Canada (CMEC).

[1] In this report, the word *countries* will be used to denote countries and economies.

The project, which began in 2000, focuses on the capabilities of 15-year-olds as they near the end of compulsory education. Administered every three years, it reports on reading, mathematical, and scientific literacy and provides a more detailed look at one of those domains in the years when it is the major focus. As a major focus, the domain is tested in greater depth, taking up roughly one-half of the total testing time. The major domain in 2018 was reading, as it was in 2000 and 2009. Mathematics was the major domain in 2003 and 2012, and science was the major domain in 2006 and 2015. Students' proficiency in an innovative domain is also assessed in each cycle. In 2018, the innovative domain was global competence — that is, students' ability to interact with the wider world around them.

Why does Canada participate in PISA?

Canada's continued participation in PISA stems from many of the same questions that motivate other participating countries. In Canada, the provinces and territories, which are responsible for education, invest significant public resources in the provision of elementary and secondary education, and Canadians are interested in the outcomes of compulsory education provided to their youth. A key question is, how can resources be directed to the achievement of higher levels of knowledge and skills upon which lifelong learning is founded and to the reduction of social inequality in life outcomes?

Elementary and secondary education systems play a key role in providing students with the knowledge and skills that form an essential foundation for the further development of human capital, whether through participation in the workforce, postsecondary education, or lifelong learning. Previous studies based on PISA data have shown the relationship between strong skills in the core subject areas at age 15 and outcomes in later life. For example, results from the Youth in Transition Survey (YITS) show a strong association between reading proficiency and education attainment (OECD, 2010 and 2012). Canadian students in the bottom quartile of PISA reading scores were much more likely to drop out of secondary school and less likely to have completed a year of postsecondary education than those in the top quartile. In contrast, Canadian students at the top PISA level of reading performance (at the time, Level 5) were 20 times more likely to go to university than those at the lowest PISA levels (at or below Level 1) (OECD, 2010).

Questions about educational effectiveness can be partly answered with data on the average performance of Canada's youth in key subject areas. However, with respect to equity, other questions can be answered only by examining the distribution of competencies (e.g., Who are the students at the lowest levels of achievement? Do certain groups or regions appear to be at greater risk of low achievement?). These are important questions because, among other things, acquisition of knowledge and skills during compulsory schooling influences access to postsecondary education, success in the labour market, and the effectiveness of continuous, lifelong learning.

What is PISA 2018?

In 2018, the seventh cycle of PISA focused on reading literacy. PISA 2018 marks the third time that reading was the major domain: while reading was assessed in all previous PISA cycles, the domain was the major focus in 2000 and 2009. Students who participated in PISA 2018 entered primary school at about the time of the PISA 2009 survey, so the 2018 results provide an opportunity to relate policy changes to changes in learning outcomes using the benchmarks set by the previous surveys. Given its emphasis on reading in 2018, PISA reports on reading literacy as well as three cognitive process subscales (locating information, understanding, and evaluating and reflecting) and two text structure subscales (single-source texts and multiple-source texts), which are described in Chapter 1.

The distinction between the major domain (reading) and the two minor domains (mathematics and science) are less prominent in PISA 2018 than in previous administrations. The test design in 2018 provided full coverage of the constructs for all three domains, although about one-half of the total testing time was dedicated to the major

domain. For the reading assessment, a multi-stage adaptive test design (described in Chapter 1) was introduced, which provides a more efficient and precise measurement of ability across the proficiency scales.

Seventy-nine countries participated in PISA 2018, including all 37 OECD countries.[2] Typically, between 5,000 and 10,000 15-year-old students from at least 150 schools were tested in each country. In Canada, over 22,500 students from approximately 800 schools participated across the 10 provinces.[3]

The large Canadian sample was required to produce reliable estimates representative of each province and for both French- and English-language school systems in Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba, Alberta, and British Columbia.[4] In Canada, PISA was administered in English and in French, depending on the school system in which students were enrolled.

The 2018 PISA assessment was administered in schools during regular school hours in April and May 2018. The assessment was a two-hour computer-based test. Students also completed a 35-minute student background questionnaire, providing information about themselves and their home, while school principals completed a 45-minute questionnaire about their schools. As part of PISA 2018, international options could also be implemented. Canada chose to add a one-hour financial literacy assessment. Canada also implemented several national options in the form of short questionnaires to collect information on the attitudes of 15-year-old students toward trades, their participation in French immersion programs, Indigenous self-identity, and expectations related to educational attainment; however, only some provinces chose to participate in these options.

Table 1 presents an overview of PISA 2018. It includes information on participants, test design and administration, and national and international options.

[2] The OECD countries are Australia, Austria, Belgium, Canada, Chile, Colombia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom, and United States. Participating partner countries and economies are Albania, Argentina, Azerbaijan (Baku), Beijing, Shanghai, Jiangsu, Zhejiang (B-S-J-Z) (China), Belarus, Bosnia and Herzegovina, Brazil, Brunei Darussalam, Bulgaria, Chinese Taipei, Costa Rica, Croatia, Cyprus, Dominican Republic, Georgia, Hong Kong (China), Indonesia, Jordan, Kazakhstan, Kosovo, Lebanon, Macao (China), Malaysia, Malta, Moldova, Montenegro, Morocco, Panama, Peru, Philippines, Qatar, Republic of North Macedonia, Romania, Russian Federation, Saudi Arabia, Serbia, Singapore, Thailand, Ukraine, United Arab Emirates, Uruguay, and Vietnam.

[3] No data were collected in the three territories or in First Nations schools. Further information on sampling procedures and response rates for Canada can be found in Appendix A.

[4] The samples of French-language schools were not sufficiently large to produce reliable estimates in Newfoundland and Labrador, Prince Edward Island, and Saskatchewan.

Table 1

Overview of PISA 2018

	International	Canada
Participating countries/ provinces	• 79 countries	• 10 provinces
Population	• Youth aged 15	• Same
Number of participating students	• Between 5,000 and 10,000 per country, with some exceptions, for a total of around 600,000 students	• Approximately 22,500 students
Domains	• Major: reading • Minor: mathematics and science • Innovative: global competence	• Same
Languages in which the test was administered	• 47 languages	• English and French
International assessment	• 2 hours of direct assessments of reading, mathematics, science, and global competence • 35-minute contextual questionnaire administered to students • 45-minute school questionnaire administered to school principals • UH (Une Heure [One Hour]) test designed for students with special education needs who cannot participate in the regular assessment	• Same
International options	• 15-minute optional questionnaire on familiarity with information technology and communications administered to students • 8–10 minute optional questionnaire on educational careers administered to students • 10–14 minute optional questionnaire on well-being administered to students • 20-minute optional questionnaire administered to parents[5] • 1-hour optional assessment of financial literacy, which includes cognitive components and a questionnaire • 30-minute optional teacher questionnaire	• 1-hour optional assessment of financial literacy (includes cognitive components and a questionnaire), administered in Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick, Ontario, Manitoba, and British Columbia
National options	• Other options were undertaken in a limited number of countries	• A maximum of 10 minutes (total) of additional questions administered to students, about: ◆ their attitudes toward trades (Newfoundland and Labrador, Prince Edward Island, Saskatchewan, Alberta, and British Columbia) ◆ their participation in French immersion programs (Newfoundland and Labrador, Prince Edward Island, Ontario, Saskatchewan, and British Columbia) ◆ Indigenous self-identity (Newfoundland and Labrador, Prince Edward Island, Manitoba, Saskatchewan, Alberta, and British Columbia) ◆ their expectations, as well as their parents' expectations (as perceived by the students), with regards to educational attainment (all 10 provinces)

[5] In this report, *parents* refers to parents or guardians.

Objectives and organization of this report

This report provides the initial results from the PISA 2018 assessment for Canada and the provinces. It presents the Canadian and provincial results in reading, mathematics, and science and complements the information presented in the PISA 2018 international report.[6] It also compares results to those in other participating countries and across Canadian provinces.

Chapter 1 provides information on the performance of Canadian 15-year-old students on the PISA 2018 assessment in reading, the primary focus of PISA 2018. It explains the five subscales that constitute the PISA assessment of reading literacy and describes the eight reading proficiency levels. Student achievement is presented by both proficiency levels and average scores. Chapter 2 presents data from the student questionnaire. It reports statistics for variables of interest and provides an analysis of the relationship between certain variables and student performance in reading, where pertinent. Chapter 3 presents performance results in the minor domains of mathematics and science. The Conclusion discusses the major findings and opportunities for further study. Finally, the appendices provide additional details on sampling and response rates as well as a number of data tables.

[6] The PISA 2018 international report is being released in six volumes. Results presented in this report correspond to those in *PISA 2018 results, Volume 1: What Students Know and Can Do* (Paris: OECD 2019). Retrieved from https://www.oecd-ilibrary.org/education/pisa-2018-results-volume-i_5f07c754-en

Chapter 1

Canadian Students' Performance in Reading in an International Context

Defining reading

In the PISA context, *reading* refers to *reading literacy,* which is defined as "an individual's capacity to understand, use, evaluate, reflect on and engage with texts in order to achieve one's goals, develop one's knowledge and potential, and participate in society" (OECD, 2019a, p. 14). Reading literacy is a foundation for student achievement in other subject areas in school as well as a prerequisite for full participation in modern society.

The reading framework was originally developed for PISA 2000. Since the initial development of the framework, the nature of reading contexts has significantly changed, especially with the introduction of new digital reading platforms and technologies. In light of changes in the field of reading, as well as changes to the PISA assessment administration mode, the reading framework has been updated over the years. For PISA 2009, two main modifications were made to the framework: the inclusion of digital texts and the elaboration of the constructs of reading engagement and metacognition. Although reading was a minor domain in PISA 2015, the wording of the framework was adjusted in that year to reflect the transition from a paper-based to a computer-based assessment mode. For PISA 2018, the main improvements made to the framework include the integration of new diverse forms of reading and considerations related to the impact of technology, the inclusion of basic reading process constructs, and the elaboration of reading processes to encompass skills needed in a digital reading context. While several updates have been made to the reading framework, the framework has also retained its essential features, which allows reporting on trends in performance over time.

For the first time, PISA 2018 adopted a multi-stage adaptive testing approach for the computer-based reading assessment. With this approach, the reading materials were organized into blocks with units of items. There are three stages in the adaptive testing. The test starts with a core stage, with one random block consisting of 7 to 10 items assigned to students, followed by either an easy or a difficult block of units with 12 to 15 items each at Stage 1 and Stage 2. The Stage 1 and Stage 2 blocks were assigned based on the student's performance (i.e., low, medium, or high achievement), as determined by the core stage. For example, students who displayed low performance at the core stage had a 90 per cent chance of being assigned to an easier Stage 1 block and a 10 per cent chance of being assigned to a more difficult Stage 1 block (OECD, 2019b, p. 37). In this way, through the assignment of units closer to each student's ability level, performance can be estimated with more precision for each student as the assessment progresses. The use of adaptive testing ensures a higher level of measurement precision while administering fewer items to each student (OECD, 2019b, p. 37). The multi-stage adaptive testing was used only for reading, as it was the major domain in PISA 2018; the traditional non-adaptive testing approach was used for the two minor domains.

The main elements of the PISA 2018 reading framework are presented in Figure 1.1. The cognitive assessment design includes test items that focus on different types of texts and situations and that address the cognitive processes readers use when they engage with texts. Overall, the framework aims to measure how well a student has mastered different reading cognitive processes by manipulating text and situational variables while using one or more texts (OECD, 2019a).

Figure 1.1

Elements of the PISA 2018 reading framework

Reading processes

Possible cognitive processes used when readers engage with text

- *Text processing*
- *Task management*

Texts

Text types, formats, and ranges

- *Single-source texts:* texts with a definite author or group of authors, publication date, or reference title or number
- *Multiple-source texts:* texts with different authors or groups of authors, publication dates, and/or reference titles or numbers
- *Static texts:* texts with simple organizational structures and a low density of navigational tools
- *Dynamic texts:* texts with more complex organizational structures and a higher density of navigational tools
- *Continuous texts:* texts composed of sentences and paragraphs
- *Non-continuous texts:* texts organized in matrix formats, lists, graphs, diagrams, etc.
- *Mixed texts:* texts with both continuous and non-continuous elements

Situation

Text or reading purposes and contexts

Figure 1.2 outlines the two categories of reading processes in the framework. In particular, the PISA cognitive reading assessment focuses on measuring and reporting on the cognitive processes that fall within the text-processing category.

Figure 1.2

PISA 2018 reading framework processes

Text processing

Reading fluently

Locating information

- Scanning and locating/accessing and retrieving information within a text
- Searching for and selecting relevant text

Understanding

- Representing literal meaning
- Integrating and generating references

Evaluating and reflecting

- Assessing quality and credibility
- Reflecting on content and form
- Corroborating/detecting and handling conflict

Task management

Setting goals and plans

Monitoring, regulating

Adapted from Figure 2.2 in OECD, 2019a, p. 33.

The reading framework covers several different elements. However, for PISA 2018 reporting purposes, a total of five subscales are used: three cognitive process subscales and two text structure subscales. The text-processing elements of locating information, understanding, and evaluating and reflecting represent the three cognitive process subscales, while the two text structure subscales are single-source texts and multiple-source texts.

A fourth text process, "reading fluently," underpins the three cognitive processes but is not reported as a separate subscale. PISA defines reading fluency as the ease and efficiency with which one can read and understand a piece of text. To assess this process, PISA 2018 presented students with relatively simple sentences and asked whether they made sense. The inclusion of tasks that assess reading fluency independently of other processes is new to the PISA 2018 assessment (OECD, 2019b).

Table 1.1 provides an overview of the framework coverage in the PISA 2018 reading cognitive assessment and defines approximately how the cognitive assessment tasks are distributed across the five reporting subscales.

Table 1.1

Distribution of PISA 2018 reading tasks by cognitive process and text source

2018 FRAMEWORK		
	Single-source text 65%	**Multiple-source text 35%**
Locating information 25%	Scanning and locating 15%	Searching for and selecting relevant text 10%
Understanding 45%	Representing literal meaning 15% Integrating and generating references 15%	Integrating and generating references 15%
Evaluating and reflecting 30%	Assessing quality and credibility, and reflecting on content and form 20%	Corroborating and handling conflict 10%

Adapted from Table 1.1 in OECD 2019b.

PISA achievement results by proficiency levels in reading

PISA has developed useful benchmarks relating a range of average scores in reading to levels of knowledge and skills measured by the assessment. Although these levels are not linked directly to any specific program of study in reading, they provide an overall picture of students' accumulated understanding at age 15. PISA reading literacy is expressed on an eight-level proficiency scale whereby tasks at the lower end of the scale (Levels 1a–1c) are deemed easier and less complex than other tasks at the higher end (Level 6); this progression in task difficulty/complexity applies to both the overall reading scale and the reading subscales. A summary description of the tasks that students are able to do at the eight proficiency levels for overall reading is provided in Table 1.2, along with the corresponding lower score limit for the level. It is assumed that students classified at a given proficiency level can perform most of the tasks at that level as well as those at the lower level or levels.

Table 1.2

PISA 2018 reading proficiency levels – summary description

Level	Lower score limit	Percentage of students able to perform tasks at this level or above	Task characteristics
6	698	1.3% of students across the OECD and 2.8% in Canada	Students at **Level 6** of the PISA reading assessment are able to successfully complete the most difficult PISA items. At Level 6, students can: ◆ comprehend lengthy and abstract texts in which the information of interest is deeply embedded and only indirectly related to the task ◆ compare, contrast, and integrate information representing multiple and potentially conflicting perspectives, using multiple criteria and generating inferences across distant pieces of information to determine how the information may be used ◆ reflect deeply on the text's source in relation to its content, using criteria external to the text ◆ compare and contrast information across texts while identifying and resolving inter-textual discrepancies and conflicts through inferences about the sources of information, their explicit or vested interests, and other cues as to the validity of the information ◆ set up elaborate plans, combining multiple criteria and generating inferences to relate the task and the text(s)
5	626	8.7% of students across the OECD and 15.0% in Canada	At **Level 5**, students can: ◆ comprehend lengthy texts, inferring which information in the text is relevant even though the information of interest may be easily overlooked ◆ perform causal or other forms of reasoning based on a deep understanding of extended pieces of text ◆ answer indirect questions by inferring the relationship between the question and one or several pieces of information distributed within or across multiple texts and sources ◆ produce or critically evaluate hypotheses, drawing on specific information ◆ establish distinctions between content and purpose, and between fact and opinion as applied to complex or abstract statements ◆ assess neutrality and bias based on explicit or implicit cues pertaining to the content and/or source of the information ◆ draw conclusions regarding the reliability of the claims or conclusions offered in a piece of text
4	553	27.6% of students across the OECD and 39.0% in Canada	At **Level 4**, students can: ◆ comprehend extended passages in single- or multiple-text settings ◆ interpret the meaning of nuances of language in a section of text by taking into account the text as a whole ◆ demonstrate understanding and application of ad hoc categories ◆ compare perspectives and draw inferences based on multiple sources ◆ search for, locate, and integrate several pieces of embedded information in the presence of plausible distractors ◆ generate inferences based on the task statement in order to assess the relevance of target information ◆ handle tasks that require them to memorize prior task context ◆ evaluate the relationship between specific statements and a person's overall stance or conclusion about a topic ◆ reflect on the strategies that authors use to convey their points, based on salient features of texts such as titles and illustrations ◆ compare and contrast claims explicitly made in several texts and assess the reliability of a source based on salient criteria
3	480	53.6% of students across the OECD and 66.1% in Canada	At **Level 3**, students can: ◆ represent the literal meaning of single or multiple texts in the absence of explicit content or organizational clues ◆ integrate content and generate both basic and more advanced inferences ◆ integrate several parts of a piece of text in order to identify the main idea, understand a relationship, or construe the meaning of a word or phrase when the required information is featured on a single page ◆ search for information based on indirect prompts, and locate target information that is not in a prominent position and/or is in the presence of distractors ◆ recognize the relationship between several pieces of information based on multiple criteria ◆ reflect on a piece of text or a small set of texts, and compare and contrast several authors' viewpoints based on explicit information ◆ demonstrate a detailed understanding of a piece of text dealing with a familiar topic and a basic understanding when dealing with less-familiar content ◆ take many features into account when comparing, contrasting, or categorizing information

Level	Lower score limit	Percentage of students able to perform tasks at this level or above	Task characteristics
2	407	77.4% of students across the OECD and 86.2% in Canada	**Level 2** is considered the baseline level of reading proficiency that is required to participate fully in modern society. At Level 2, students can: ◆ identify the main idea in a piece of text of moderate length ◆ understand relationships or construe meaning within a limited part of the text when the information is not prominent by producing basic inferences, and/or when the text(s) include some distracting information ◆ select and access a page in a set based on explicit though sometimes complex prompts, and locate one or more pieces of information based on multiple, partly implicit criteria ◆ reflect on the overall purpose, or on the purpose of specific details, in texts of moderate length (when explicitly cued) ◆ reflect on simple visual or typographical features ◆ compare claims and evaluate the reasons supporting them based on short, explicit statements ◆ make a comparison or several connections between the text and outside knowledge by drawing on personal experience and attitudes
1a	335	92.3% of students across the OECD and 96.2% in Canada	At **Level 1a**, students can: ◆ understand the literal meaning of sentences or short passages ◆ recognize the main theme or the author's purpose in a piece of text about a familiar topic, and make a simple connection between several adjacent pieces of information, or between the given information and their own prior knowledge ◆ select a relevant page from a small set based on simple prompts, and locate one or more independent pieces of information within short texts ◆ reflect on the overall purpose and on the relative importance of information (e.g., the main idea vs. non-essential detail) in simple texts containing explicit cues
1b	262	98.6% of students across the OECD and 99.3% in Canada	At **Level 1b**, students can: ◆ evaluate the literal meaning of simple sentences ◆ interpret the literal meaning of texts by making simple connections between adjacent pieces of information in the question and/or the text ◆ scan for and locate a single piece of prominently placed, explicitly stated information in a single sentence, a short text, or a simple list ◆ access a relevant page from a small set based on simple prompts when explicit cues are present
1c	189	99.9% of students across the OECD and 100.0% in Canada	At **Level 1c**, students can: ◆ understand and affirm the meaning of short, syntactically simple sentences on a literal level, and read for a clear and simple purpose within a limited amount of time

Note: In this report, "Level 1" and "Level 1a" are used interchangeably. Level 1b and 1c are also referred to as "below Level 1."
Adapted from OECD, 2019a, p. 55.

Results in reading

The results of student performance on the PISA 2018 reading assessment are presented in this report in two ways: as the percentage of students attaining proficiency levels and as overall average scores. Results are presented for Canada overall and by province, both for reading overall and by the subscales of reading. The performance of students enrolled in anglophone and francophone school systems is also presented for those provinces in which the two groups were sampled separately. This chapter also compares Canadian students' performance in reading by gender. Given that PISA 2018 marks the third time that reading was assessed as a major domain (reading was also the major focus in 2000 and 2009), changes in reading performance over time are also discussed.

Results in reading by proficiency level

In PISA 2018, 86 per cent of Canadian students and 77 per cent of students in OECD countries performed at or above Level 2 in reading, which is the baseline level of reading literacy required to take advantage of further learning opportunities and to participate fully in modern society (Appendix B.1.1b). Across provinces, the percentage of Canadian students at or above the baseline level of performance ranges from 78 per cent in New Brunswick to 88 per cent in Quebec and Alberta (Figure 1.3). Inversely, 14 per cent of Canadian

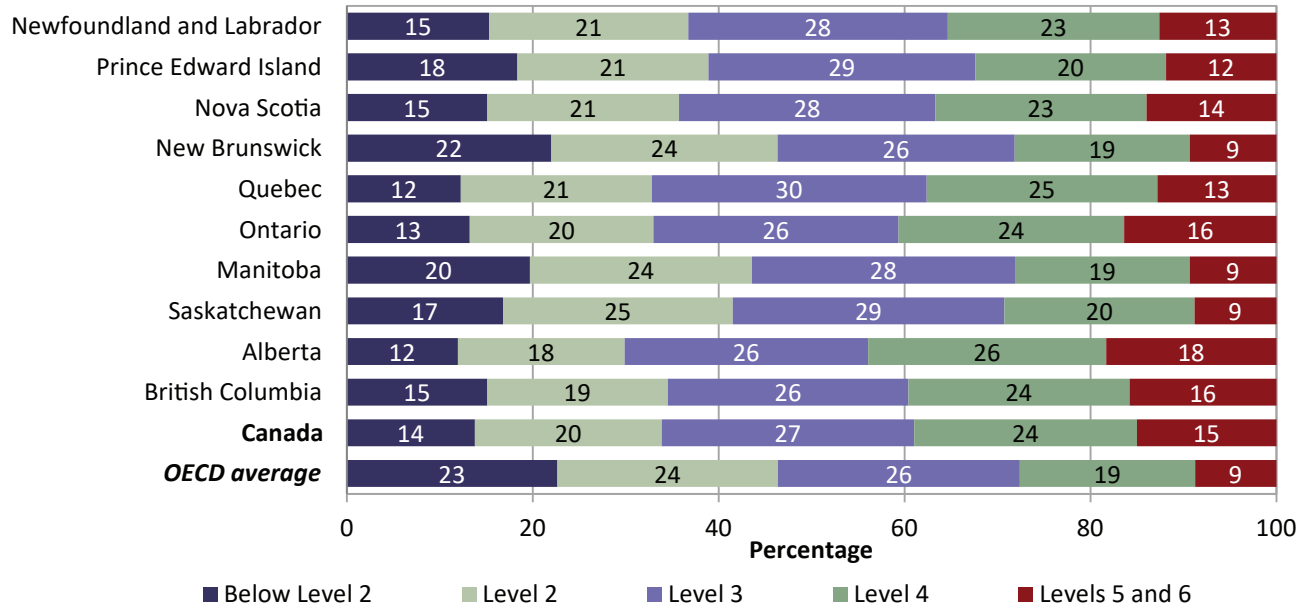
students did not reach the baseline Level 2 in reading, compared to the OECD average of 23 per cent. More than 60 countries had a higher proportion of students performing below Level 2 compared to Canada. Within Canada, there is much variability among the provinces. Quebec (12 per cent), Alberta (12 per cent), and Ontario (13 per cent) had a lower proportion of low achievers in reading; whereas New Brunswick (22 per cent) and Manitoba (20 per cent) had a higher proportion of low achievers.

At the higher end of the PISA reading scale, 15 per cent of Canadian students performed at Level 5 or above compared to 9 per cent performing at this level on average across OECD countries. Although the overall Canadian average is higher than in most other countries participating in PISA 2018, in seven countries — Macao (China), the United States, Estonia, Sweden, Korea, Hong Kong (China), and Finland — the proportion of students performing at Level 5 or above was similar to that in Canada. Two other countries (Singapore and B-S-J-Z (China)) had a statistically higher proportion of students at Level 5 or above than Canada. At the provincial level, more than 10 per cent of students in Newfoundland and Labrador, Prince Edward Island, Nova Scotia, Quebec, Ontario, Alberta, and British Columbia achieved a proficiency level of 5 or higher in reading (Appendix B.1.1b).

Students performing below Level 1 can locate explicitly stated information, recognize the main theme or author's purpose in a text with a familiar topic, or make simple connections between the text and common, everyday knowledge. Across the OECD, 8 per cent of 15-year olds did not achieve Level 1, while this proportion was 4 per cent for Canada overall. Across the provinces, the proportion of students performing below Level 1 ranged from 3 per cent in Quebec and Alberta to 7 per cent in New Brunswick (Appendix B.1.1a).

Figure 1.3

Percentage of students at each proficiency level in reading



Note: Percentages may not add up to 100 due to rounding.

Results in reading by average score

The PISA scores for reading are expressed on a scale with an average or mean of 500 points for the OECD countries and a standard deviation of 100. This average was established in 2000 and decreased to 493 in 2009 and 487 in 2018 (Appendix A1.2). This means that approximately two-thirds of all students in OECD countries scored between 387 and 587 (i.e., within one standard deviation of the average) on the PISA 2018 reading assessment.

International studies such as PISA summarize student performance by comparing the relative standing of countries based on their average test scores. This approach can be misleading because there is a margin of error associated with each score (see Box 1). When interpreting average performances between countries, only those differences that are statistically significant should be taken into account.

Box 1: A note on statistical comparisons

The purpose of PISA is to report results on the skills of 15-year-old students. Therefore, a random sample of 15-year-old students was selected to participate in the assessment. The averages (for mean scores and proficiency-levels proportions) were computed from the scores of these random samples of students from each country, and not from the overall population of 15-year-old students in each country. Consequently, it cannot be said with certainty that a sample average has the same value as the population average that would have been obtained had all 15-year-old students been assessed. Additionally, a degree of error is associated with the scores describing student performance, as these scores are estimated based on student responses to test items. A statistic, called the standard error, is used to express the degree of uncertainty associated with sampling error and measurement error. The standard error can be used to construct a confidence interval, which provides a means of making inferences about the population averages and proportions in a manner that reflects the uncertainty associated with sample estimates. A 95 per cent confidence interval is used in this report and represents a range of plus or minus about two standard errors around the sample average. Using this confidence interval, it can be inferred that the population mean or proportion would lie within the confidence interval in 95 out of 100 replications of the measurement, using different samples randomly drawn from the same population.

When comparing scores among countries, provinces, or population subgroups, the degree of error in each average should be considered in order to determine if averages are significantly different from each other. Standard errors and confidence intervals may be used as the basis for performing these comparative statistical tests. Such tests can identify, with a known probability, whether actual differences are likely to be observed in the populations being compared.

For example, when an observed difference is significant at the .05 level, it implies that the probability is less than .05 that the observed difference could have occurred because of sampling or measurement error. When comparing countries and/or provinces, extensive use is made of this type of statistical test to reduce the likelihood that differences due to sampling or measurement errors will be interpreted as real.

A test of significance (t-test) was conducted in order to determine whether differences were statistically significant. In the case of multiple t-tests, no corrections were made to reduce the false positive, or Type-I error rate. **Unless otherwise stated, only statistically significant differences at the .05 level are noted in this report, for proportions of students at proficiency levels and mean scores.**

Finally, when comparing results over time, the standard error includes a linking error to account for the fact that different cohorts of students have been tested over time with a test that also varied slightly over time.

Overall, Canadian 15-year-old students achieved a mean score of 520 in reading, which is 33 points over the OECD average. As shown in Table 1.3, Canada was outperformed by only three countries (B-S-J-Z (China), Singapore, and Macao (China)). Canadian students performed as well as students from five countries (Hong Kong (China), Estonia, Finland, Ireland, and Korea).

Table 1.3

Achievement scores in reading

Country or province	Average score	95% confidence interval	Countries or provinces whose mean score is not significantly different from the comparison country or province
B-S-J-Z (China)	555	550–561	Singapore
Singapore	549	546–553	B-S-J-Z (China)
Alberta	532	523–540	Macao (China), Hong Kong (China), Ontario, Estonia
Macao (China)	525	523–528	Alberta, Hong Kong (China), Ontario, Estonia, Finland, Quebec, British Columbia
Hong Kong (China)	524	519–530	Alberta, Macao (China), Ontario, Estonia, Canada, Finland, Quebec, British Columbia, Ireland, Nova Scotia
Ontario	524	517–531	Alberta, Macao (China), Hong Kong (China), Estonia, Canada, Finland, Quebec, British Columbia, Ireland, Nova Scotia
Estonia	523	519–527	Alberta, Macao (China), Hong Kong (China), Ontario, Canada, Finland, Quebec, British Columbia, Ireland, Nova Scotia
CANADA	520	517–524	Hong Kong (China), Ontario, Estonia, Finland, Quebec, British Columbia, Ireland, Nova Scotia, Korea, Newfoundland and Labrador
Finland	520	516–525	Macao (China), Hong Kong (China), Ontario, Estonia, Canada, Quebec, British Columbia, Ireland, Nova Scotia, Korea, Newfoundland and Labrador
Quebec	519	513–526	Macao (China), Hong Kong (China), Ontario, Estonia, Canada, Finland, British Columbia, Ireland, Nova Scotia, Korea, Newfoundland and Labrador, Poland, Prince Edward Island
British Columbia	519	511–528	Macao (China), Hong Kong (China), Ontario, Estonia, Canada, Finland, Quebec, Ireland, Nova Scotia, Korea, Newfoundland and Labrador, Poland, Prince Edward Island
Ireland	518	514–522	Hong Kong (China), Ontario, Estonia, Canada, Finland, Quebec, British Columbia, Nova Scotia, Korea, Newfoundland and Labrador, Poland, Prince Edward Island
Nova Scotia	516	508–523	Hong Kong (China), Ontario, Estonia, Canada, Finland, Quebec, British Columbia, Ireland, Korea, Newfoundland and Labrador, Poland, United States, Prince Edward Island
Korea	514	508–520	Canada, Finland, Quebec, British Columbia, Ireland, Nova Scotia, Newfoundland and Labrador, Poland, Sweden, United States, Prince Edward Island
Newfoundland and Labrador	512	503–520	Canada, Finland, Quebec, British Columbia, Ireland, Nova Scotia, Korea, Poland, Sweden, New Zealand, United States, United Kingdom, Japan, Chinese Taipei, Prince Edward Island
Poland	512	507–517	Quebec, British Columbia, Ireland, Nova Scotia, Korea, Newfoundland and Labrador, Sweden, New Zealand, United States, Prince Edward Island
Sweden	506	500–512	Korea, Newfoundland and Labrador, Poland, New Zealand, United States, United Kingdom, Japan, Australia, Chinese Taipei, Prince Edward Island, Denmark, Norway, Saskatchewan, Germany
New Zealand	506	502–510	Newfoundland and Labrador, Poland, Sweden, United States, United Kingdom, Japan, Australia, Chinese Taipei, Prince Edward Island, Denmark, Saskatchewan
United States	505	498–512	Nova Scotia, Korea, Newfoundland and Labrador, Poland, Sweden, New Zealand, United Kingdom, Japan, Australia, Chinese Taipei, Prince Edward Island, Denmark, Norway, Saskatchewan, Germany
United Kingdom	504	499–509	Newfoundland and Labrador, Sweden, New Zealand, United States, Japan, Australia, Chinese Taipei, Prince Edward Island, Denmark, Norway, Saskatchewan, Germany
Japan	504	499–509	Newfoundland and Labrador, Sweden, New Zealand, United States, United Kingdom, Australia, Chinese Taipei, Prince Edward Island, Denmark, Norway, Saskatchewan, Germany
Australia	503	499–506	Sweden, New Zealand, United States, United Kingdom, Japan, Chinese Taipei, Prince Edward Island, Denmark, Norway, Saskatchewan, Germany
Chinese Taipei	503	497–508	Newfoundland and Labrador, Sweden, New Zealand, United States, United Kingdom, Japan, Australia, Prince Edward Island, Denmark, Norway, Saskatchewan, Germany, Manitoba
Prince Edward Island	503	486–519	Quebec, British Columbia, Ireland, Nova Scotia, Korea, Newfoundland and Labrador, Poland, Sweden, New Zealand, United States, United Kingdom, Japan, Australia, Chinese Taipei, Denmark, Norway, Saskatchewan, Germany, Slovenia, Manitoba, Belgium, France, Portugal, Czech Republic, New Brunswick
Denmark	501	498–505	Sweden, New Zealand, United States, United Kingdom, Japan, Australia, Chinese Taipei, Prince Edward Island, Norway, Saskatchewan, Germany, Manitoba
Norway	499	495–504	Sweden, United States, United Kingdom, Japan, Australia, Chinese Taipei, Prince Edward Island, Denmark, Saskatchewan, Germany, Slovenia, Manitoba
Saskatchewan	499	493–505	Sweden, New Zealand, United States, United Kingdom, Japan, Australia, Chinese Taipei, Prince Edward Island, Denmark, Norway, Germany, Slovenia, Manitoba, Belgium, France, Portugal
Germany	498	492–504	Sweden, United States, United Kingdom, Japan, Australia, Chinese Taipei, Prince Edward Island, Denmark, Norway, Saskatchewan, Slovenia, Manitoba, Belgium, France, Portugal
Slovenia	495	493–498	Prince Edward Island, Norway, Saskatchewan, Germany, Manitoba, Belgium, France, Portugal, Czech Republic, New Brunswick
Manitoba	494	488–501	Chinese Taipei, Prince Edward Island, Denmark, Norway, Saskatchewan, Germany, Slovenia, Belgium, France, Portugal, Czech Republic, New Brunswick
Belgium	493	488–497	Prince Edward Island, Saskatchewan, Germany, Slovenia, Manitoba, France, Portugal, Czech Republic, New Brunswick
France	493	488–497	Prince Edward Island, Saskatchewan, Germany, Slovenia, Manitoba, Belgium, Portugal, Czech Republic, New Brunswick
Portugal	492	487–497	Prince Edward Island, Saskatchewan, Germany, Slovenia, Manitoba, Belgium, France, Czech Republic, New Brunswick, Netherlands

Above the OECD average

Country or province	Average score	95% confidence interval	Countries or provinces whose mean score is not significantly different from the comparison country or province	
Czech Republic	490	485–497	Prince Edward Island, Slovenia, Manitoba, Belgium, France, Portugal, New Brunswick, Netherlands, Austria, Switzerland	At the OECD average
New Brunswick	489	482–496	Prince Edward Island, Slovenia, Manitoba, Belgium, France, Portugal, Czech Republic, Netherlands, Austria, Switzerland	
Netherlands	485	480–490	Portugal, Czech Republic, New Brunswick, Austria, Switzerland, Croatia, Latvia, Russian Federation	
Austria	484	479–490	Czech Republic, New Brunswick, Netherlands, Switzerland, Croatia, Latvia, Russian Federation	
Switzerland	484	478–490	Czech Republic, New Brunswick, Netherlands, Austria, Croatia, Latvia, Russian Federation, Italy	
Croatia	479	474–484	Netherlands, Austria, Switzerland, Latvia, Russian Federation, Italy, Hungary, Lithuania, Iceland, Belarus, Israel	Below the OECD average
Latvia	479	476–482	Netherlands, Austria, Switzerland, Croatia, Russian Federation, Italy, Hungary, Lithuania, Belarus	
Russian Federation	479	472–485	Netherlands, Austria, Switzerland, Croatia, Latvia, Italy, Hungary, Lithuania, Iceland, Belarus, Israel	
Italy	476	472–481	Switzerland, Croatia, Latvia, Russian Federation, Hungary, Lithuania, Iceland, Belarus, Israel	
Hungary	476	472–480	Croatia, Latvia, Russian Federation, Italy, Lithuania, Iceland, Belarus, Israel	
Lithuania	476	473–479	Croatia, Latvia, Russian Federation, Italy, Hungary, Iceland, Belarus, Israel	
Iceland	474	471–477	Croatia, Russian Federation, Italy, Hungary, Lithuania, Belarus, Israel, Luxembourg	
Belarus	474	469–479	Croatia, Latvia, Russian Federation, Italy, Hungary, Lithuania, Iceland, Israel, Luxembourg, Ukraine	
Israel	470	463–478	Croatia, Russian Federation, Italy, Hungary, Lithuania, Iceland, Belarus, Luxembourg, Ukraine, Turkey	
Luxembourg	470	468–472	Iceland, Belarus, Israel, Ukraine, Turkey	
Ukraine	466	459–473	Belarus, Israel, Luxembourg, Turkey, Slovak Republic, Greece	
Turkey	466	461–470	Israel, Luxembourg, Ukraine, Greece	
Slovak Republic	458	454–462	Ukraine, Greece, Chile	
Greece	457	450–465	Ukraine, Turkey, Slovak Republic, Chile	
Chile	452	447–457	Slovak Republic, Greece, Malta	
Malta	448	445–452	Chile	
Serbia	439	433–446	United Arab Emirates, Romania	
United Arab Emirates	432	427–436	Serbia, Romania, Uruguay, Costa Rica	
Romania	428	418–438	Serbia, United Arab Emirates, Uruguay, Costa Rica, Cyprus, Moldova, Montenegro, Mexico, Bulgaria, Jordan	
Uruguay	427	422–433	United Arab Emirates, Romania, Costa Rica, Cyprus, Moldova, Mexico, Bulgaria	
Costa Rica	426	420–433	United Arab Emirates, Romania, Uruguay, Cyprus, Moldova, Montenegro, Mexico, Bulgaria, Jordan	
Cyprus[a]	424	422–427	Romania, Uruguay, Costa Rica, Moldova, Montenegro, Mexico, Bulgaria, Jordan	
Moldova	424	419–429	Romania, Uruguay, Costa Rica, Cyprus, Montenegro, Mexico, Bulgaria, Jordan	
Montenegro	421	419–423	Romania, Costa Rica, Cyprus, Moldova, Mexico, Bulgaria, Jordan	
Mexico	420	415–426	Romania, Uruguay, Costa Rica, Cyprus, Moldova, Montenegro, Bulgaria, Jordan, Malaysia, Colombia	
Bulgaria	420	412–428	Romania, Uruguay, Costa Rica, Cyprus, Moldova, Montenegro, Mexico, Jordan, Malaysia, Brazil, Colombia	
Jordan	419	413–425	Romania, Costa Rica, Cyprus, Moldova, Montenegro, Mexico, Bulgaria, Malaysia, Brazil, Colombia	
Malaysia	415	409–421	Mexico, Bulgaria, Jordan, Brazil, Colombia	
Brazil	413	409–417	Bulgaria, Jordan, Malaysia, Colombia	
Colombia	412	406–419	Mexico, Bulgaria, Jordan, Malaysia, Brazil, Brunei Darussalam, Qatar, Albania	
Brunei Darussalam	408	406–410	Colombia, Qatar, Albania, Bosnia and Herzegovina, Brazil, Brunei Darussalam, Qatar, Albania	
Qatar	407	406–409	Colombia, Brunei Darussalam, Albania, Bosnia and Herzegovina, Argentina	
Albania	405	402–409	Colombia, Brunei Darussalam, Qatar, Bosnia and Herzegovina, Argentina, Peru, Saudi Arabia	
Bosnia and Herzegovina	403	397–409	Brunei Darussalam, Qatar, Albania, Argentina, Peru, Saudi Arabia	
Argentina	402	396–407	Qatar, Albania, Bosnia and Herzegovina, Peru, Saudi Arabia	
Peru	401	395–406	Albania, Bosnia and Herzegovina, Argentina, Saudi Arabia, Thailand	
Saudi Arabia	399	393–405	Albania, Bosnia and Herzegovina, Argentina, Peru, Thailand	
Thailand	393	387–399	Peru, Saudi Arabia, Republic of North Macedonia, Baku (Azerbaijan), Kazakhstan	
Republic of North Macedonia	393	391–395	Thailand, Baku (Azerbaijan)	
Baku (Azerbaijan)	389	384–394	Thailand, Republic of North Macedonia, Kazakhstan	
Kazakhstan	387	384–390	Thailand, Baku (Azerbaijan)	
Georgia	380	376–384	Panama	
Panama	377	371–383	Georgia, Indonesia	
Indonesia	371	366–376	Panama	
Morocco	359	353–366	Lebanon, Kosovo	
Lebanon	353	345–362	Morocco, Kosovo	
Kosovo	353	351–355	Morocco, Lebanon	
Dominican Republic	342	336–347	Philippines	
Philippines	340	333–346	Dominican Republic	

Note: OECD countries appear in italics. The OECD average was 487, with a standard error of 0.4.
[a] See OECD (2019b), p. 21, for a note regarding Cyprus.

Above the Canadian average
At the Canadian average
Below the Canadian average

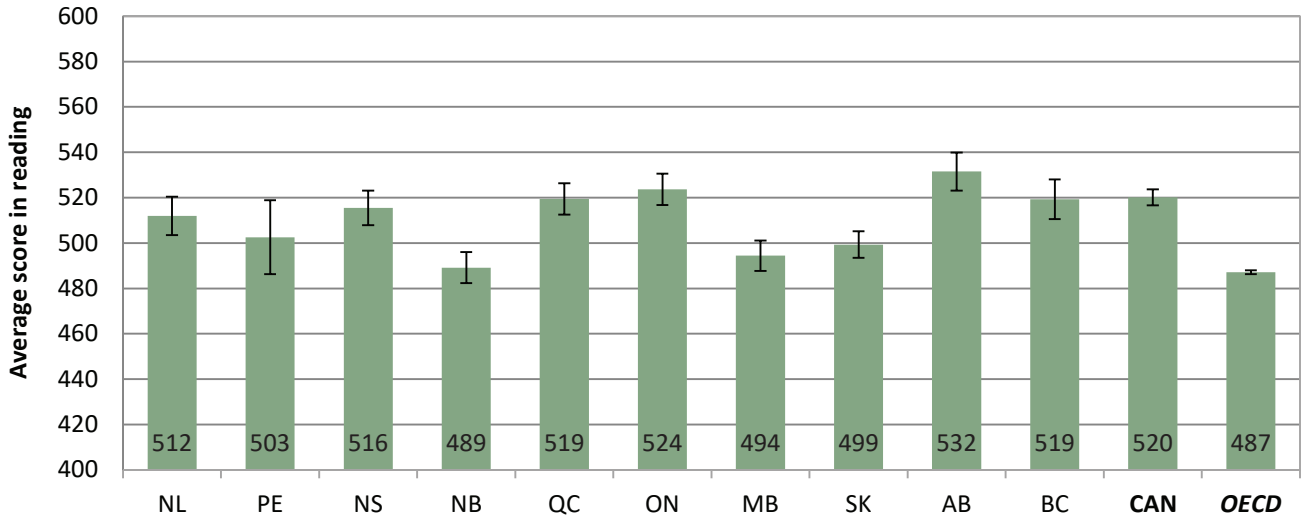
Above the OECD average
At the OECD average
Below the OECD average

When interpreting provincial and international results, it should be kept in mind that PISA students were aged between 15 years and 3 months and 16 years and 2 months in participating countries. In Canada, 88 per cent of students were at the Grade 10/Secondary IV level; they achieved a mean score of 525. Grade 9/Secondary III students (10 per cent) achieved a mean score of 486. Small proportions of students participating in PISA 2018 were in lower or higher grades.

Figure 1.4 presents reading achievement in the provinces along with the OECD and Canadian averages. Canada overall and eight provinces were above the OECD average, and two provinces (Prince Edward Island and New Brunswick) were at the OECD average. When compared to the results for Canada overall, Alberta students achieved scores that were above the Canadian average, while students in Newfoundland and Labrador, Nova Scotia, Quebec, Ontario, and British Columbia achieved scores that were similar to the Canadian average. Students in four provinces (Prince Edward Island, New Brunswick, Manitoba, and Saskatchewan) scored below the Canadian average (Appendix B.1.2).

Figure 1.4

Achievement scores in reading



Canadian results are also reported for the three cognitive processes and two text structure subscales. When analyzing results for the cognitive process subscales, it should be noted that students' level of reading literacy is dependent on skills inherent in all three subscales. A closer analysis of results in each reading subscale can help inform policy-level discussions, curricular emphasis, and/or teaching practice.

The Canadian averages for the three cognitive process subscales are 517 for *locating information*, 520 for *understanding*, and 527 for *evaluating and reflecting*. Across OECD countries, students scored 487, 487, and 489, respectively, on the three cognitive process subscales (Appendix B.1.3). On the text structure subscales, Canadian students achieved an average score of 521 on items associated with the single-text subscale and 522 on those related to multiple texts, while the OECD average on these subscales was 485 and 490, respectively (Appendix B.1.4).

As shown in Table 1.4, there was variation across provinces on the cognitive process and text structure subscales. Alberta and Ontario students scored above the Canadian average on two or more of the subscales (Appendices B.1.3 and B.1.4).

Table 1.4

Comparison of provincial results to the Canadian average for achievement scores in reading subscales

	Above* the Canadian average	At the Canadian average	Below* the Canadian average
Reading – Cognitive process subscales			
Locating information			
	Alberta	Newfoundland and Labrador, Prince Edward Island, Nova Scotia, Quebec, Ontario, British Columbia	New Brunswick, Manitoba, Saskatchewan
Understanding			
	Ontario, Alberta	Newfoundland and Labrador, Nova Scotia, Quebec, British Columbia	Prince Edward Island, New Brunswick, Manitoba, Saskatchewan
Evaluating and reflecting			
		Newfoundland and Labrador, Prince Edward Island, Nova Scotia, Quebec, Ontario, Alberta, British Columbia	New Brunswick, Manitoba, Saskatchewan
Reading – Text structure subscales			
Single-text structure			
	Ontario	Newfoundland and Labrador, Nova Scotia, Quebec, Alberta, British Columbia	Prince Edward Island, New Brunswick, Manitoba, Saskatchewan
Multiple-text structure			
	Alberta	Nova Scotia, Quebec, Ontario, British Columbia	Newfoundland and Labrador, Prince Edward Island, New Brunswick, Manitoba, Saskatchewan

*Denotes significant difference

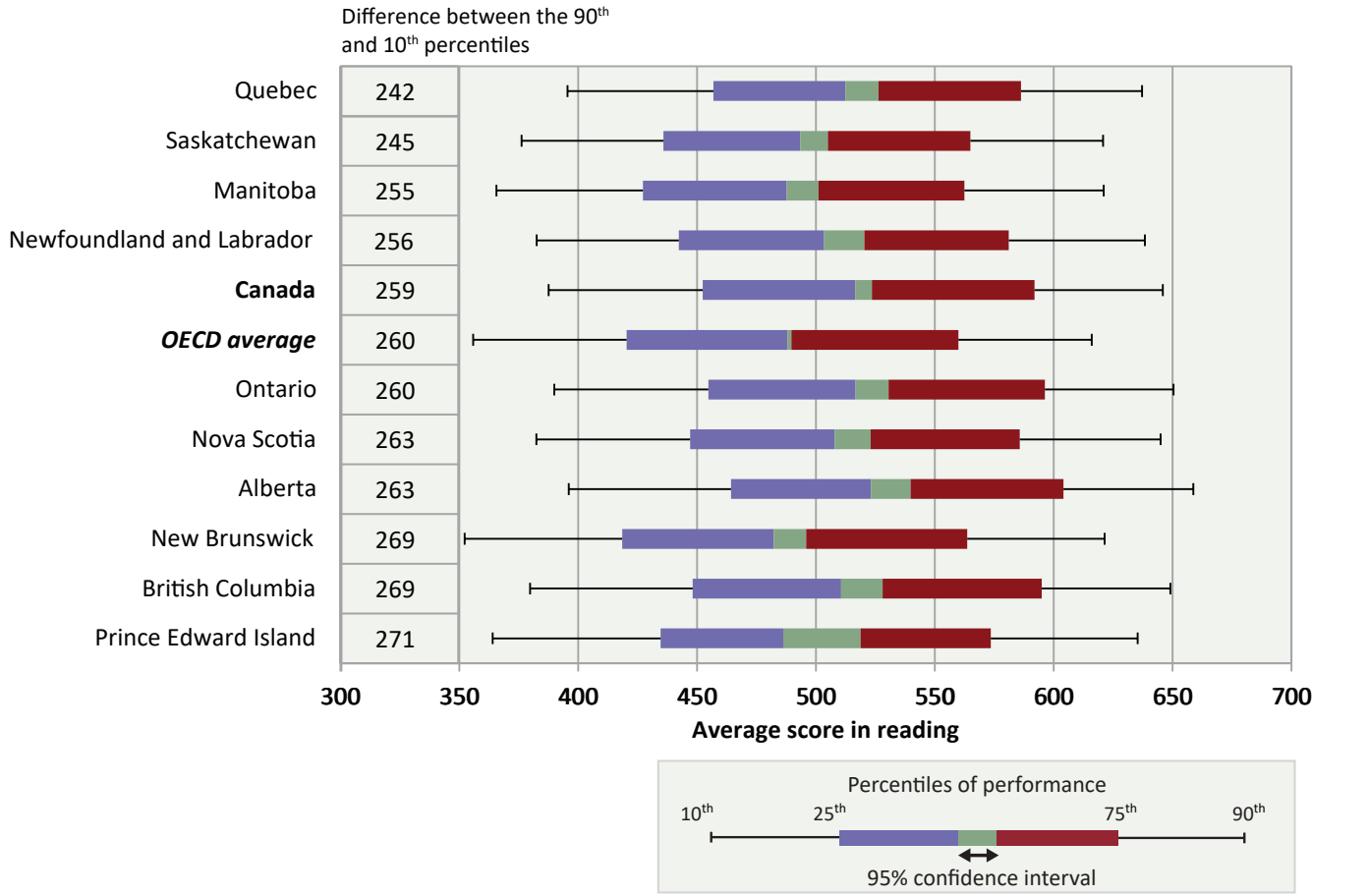
Equity in Canada

Another way of studying differences in achievement is to look at the distribution of scores within a population. The difference between the mean score of students at the 90th percentile and those at the 10th percentile is often used as a proxy for equity in educational outcomes whereby the relative distribution of scores or the gap that exists between students with the highest and lowest levels of performance within each country or province is examined. Figure 1.5 and Appendix B.1.5 show the difference in average scores between lowest achievers and highest achievers in reading in Canada and the provinces. For Canada overall, those in the highest decile scored 259 points higher than those in the lowest decile, which is similar to the gap across OECD countries (260).

At the provincial level, the smallest gaps (greater equity) are found in Quebec (242) and Saskatchewan (245), while the largest gaps (less equity) can be observed in Prince Edward Island (271), New Brunswick (269), and British Columbia (269). It is worth noting that, although high-achieving countries tend to have a larger gap, high achievement does not necessarily come at the cost of equity. For instance, B-S-J-Z (China) achieved the highest average score in reading (555) but has a smaller achievement gap (225), or greater equity, than Canada. Also of note, Macao (China) achieved a higher average score compared to Canada (525) and a similar achievement gap (238) (Appendix B.1.5).

Figure 1.5

Difference between high and low achievers in reading



Note: Results are ordered from the smallest to the largest difference between the 90th and 10th percentiles.

Achievement in reading by language of the school system

In seven Canadian provinces (Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba, Alberta, and British Columbia), samples were representative of both majority and minority official language groups.[7]

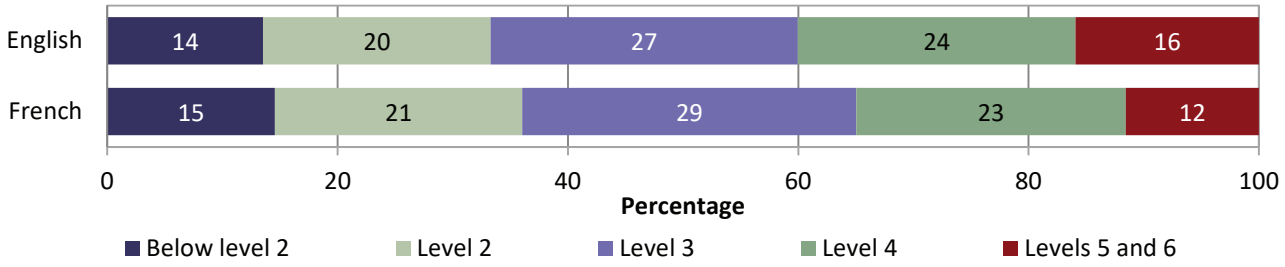
Figure 1.6 shows proficiency levels in reading by language of the school system in which students were enrolled.[8] In Canada overall, similar proportions of students in francophone and anglophone schools (85 and 86 per cent, respectively) achieved Level 2 or above. English-language school systems had a greater proportion of students attaining the highest levels of performance (Levels 5 and 6), in comparison to their French-language counterparts, while both systems had a similar proportion of students performing below Level 2 (Appendix B.1.6b).

[7] With respect to the two official languages in Canada, English is the majority language outside of Quebec — 74 per cent of Canadians report speaking English most often at home. In Quebec, French is the majority language —73 per cent of people in Quebec report speaking French most often (Statistics Canada, 2011).

[8] Within anglophone school systems, students in French immersion programs completed the reading component in English.

Figure 1.6

Percentage of students at each proficiency level in reading in Canada, by language of the school system



Note: Percentages may not add up to 100 due to rounding.

When Canadian and provincial results at Level 2 or higher for English-language schools are compared, we see that students in Newfoundland and Labrador, Prince Edward Island, Nova Scotia, Quebec, Ontario, Alberta, and British Columbia achieved these levels at a rate similar to those in Canada as a whole, while students in the remaining provinces achieved Level 2 or above at a rate lower than the Canadian average. With respect to French-language schools, a higher proportion of students in Quebec performed at or above the expected level of reading compared to the Canadian results, while students in Alberta achieved these levels at a rate similar to those in Canada as a whole; all other provinces had a lower percentage of students at Level 2 or above (Table 1.5, Appendix B.1.6b). New Brunswick, Quebec, and British Columbia were the only provinces with equity in reading achievement between the two language systems with respect to students at Level 2 or above. In the remaining provinces, performance on the overall reading scale was statistically different between the anglophone and francophone school systems. Students in the majority-language systems in Nova Scotia, Ontario, Manitoba, and Alberta performed better than their counterparts in the minority-language systems (Table 1.6, Appendix B.1.6b).

Table 1.5

Comparison of Canadian and provincial results for percentage of students achieving at or above Level 2 in reading, by language of the school system

Anglophone school systems		
Higher percentage than Canada	**The same percentage as Canada**	**Lower* percentage than Canada**
	Newfoundland and Labrador, Prince Edward Island, Nova Scotia, Quebec, Ontario, Alberta, British Columbia	New Brunswick, Manitoba, Saskatchewan
Francophone school systems		
Higher* percentage than Canada	**The same percentage as Canada**	**Lower* percentage than Canada**
Quebec	Alberta	Nova Scotia, New Brunswick, Ontario, Manitoba, British Columbia

*Denotes significant difference
Note: Because Newfoundland and Labrador, Prince Edward Island, and Saskatchewan did not oversample students by language, results for only English-language schools are available for these provinces.

Table 1.6

Comparison of provincial results for percentage of students achieving at or above Level 2 in reading, by language of the school system

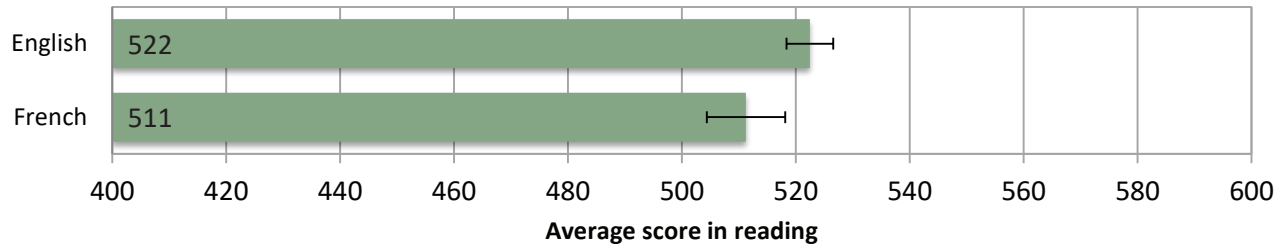
Higher* percentage in anglophone schools	Higher percentage in francophone schools	No significant difference between school systems
Nova Scotia, Ontario, Manitoba, Alberta		New Brunswick, Quebec, British Columbia

* Denotes significant difference
Note: Because Newfoundland and Labrador, Prince Edward Island, and Saskatchewan did not oversample students by language, results for only English-language schools are available for these provinces.

In Canada overall, students in English-language schools achieved higher average scores in reading than those in French-language schools (Figure 1.7, Appendix B.1.7). This differs from the results reported in the 2015 PISA study (O'Grady, Deussing, Scerbina, Fung, & Muhe, 2016) and for Canadian Grade 4 students in the PIRLS 2016 study (Brochu, O'Grady, Scerbina, & Tao, 2018); neither of these studies found a significant difference between the two language systems in reading. However, the results are consistent with those reported for Canadian Grade 4 students in ePIRLS 2016 (Brochu et al., 2018) and for Grade 8 students in PCAP 2016 (O'Grady, Fung, Servage, & Khan, 2018).

Figure 1.7

Canadian achievement scores in reading, by language of the school system



Provincially, reading scores across the provinces in the minority language systems (the anglophone school system in Quebec and francophone school systems in other provinces) ranged from 435 in Nova Scotia to 527 in Quebec, and in the majority language systems ranged from 495 in Manitoba to 532 in Alberta (Appendix B.1.7).

Table 1.7 presents a comparison of provincial achievements scores in reading with the Canadian means for both English- and French-language school systems. In English-language systems, Ontario and Alberta students scored above the Canadian English average, while the scores of students in Nova Scotia, Quebec, and British Columbia were at the Canadian English average. In French-language schools, Quebec students scored above the Canadian French average, and students in Alberta scored at the Canadian French average. The reading achievement scores for students in all remaining provinces for which reliable data are available are below the respective Canadian averages (Appendix B.1.7).

Table 1.7

Comparison of Canadian and provincial results for reading achievement scores, by language of the school system

Anglophone school systems		
Above* the Canadian English average	**At the Canadian English average**	**Below* the Canadian English average**
Ontario, Alberta	Nova Scotia, Quebec, British Columbia	Newfoundland and Labrador, Prince Edward Island, New Brunswick, Manitoba, Saskatchewan
Francophone school systems		
Above* the Canadian French average	**At the Canadian French average**	**Below* the Canadian French average**
Quebec	Alberta	Nova Scotia, New Brunswick, Ontario, Manitoba, British Columbia

* Denotes significant difference

Note: Because Newfoundland and Labrador, Prince Edward Island, and Saskatchewan did not oversample students by language, results for only English-language schools are available for these provinces.

Equity between the two language systems in overall reading scores was achieved only in Quebec (Table 1.8). The data reveal significant differences in achievement between anglophone and francophone school systems within the remaining six provinces: students in English-language systems performed better than their counterparts in French-language systems, with differences ranging from 27 points in New Brunswick to 83 points in Nova Scotia (Appendix B.1.7).

Table 1.8

Summary of differences in provincial reading achievement scores, by language of the school system

Anglophone schools performed significantly better than francophone schools	Francophone schools performed significantly better than anglophone schools	No significant differences between school systems
Nova Scotia, New Brunswick, Ontario, Manitoba, Alberta, British Columbia		Quebec

Note: Because Newfoundland and Labrador, Prince Edward Island, and Saskatchewan did not oversample students by language, results for only English-language schools are available for these provinces.

Differences between anglophone and francophone school systems were also evident in the reading subscales. At the Canadian level, students in anglophone schools performed better than their counterparts in francophone schools in the *understanding* cognitive process subscale and the *single-text structure* subscale. There was no significant difference between the two languages systems for the remaining three subscales (Table 1.9, Appendices B.1.8 and B.1.9).

Table 1.9

Comparison of Canadian achievement scores for reading subscales between language systems

	Anglophone school systems		Francophone school systems		Difference (English–French)
	Average score	Standard error	Average score	Standard error	
Reading – Cognitive process subscales					
Locating information	518	(2.5)	513	(4.6)	5
Understanding	523	(2.3)	509	(3.7)	14*
Evaluating and reflecting	529	(2.6)	523	(4.0)	6
Reading – Text structure subscales					
Single-text structure	524	(2.3)	507	(3.5)	18*
Multiple-text structure	523	(2.3)	519	(3.8)	4

* Denotes significant difference

Table 1.10 presents a comparison of provincial achievement scores to the Canadian averages for the five reading subscales for each of the two language systems. In English-language school systems, students in Ontario scored above the Canadian English average in three reading subscales: the *understanding* and *evaluating and reflecting* cognitive process subscales and the *single-text structure* subscale. Nova Scotia, Quebec, and British Columbia students were at the Canadian English average for all five subscales. In French-language school systems, Quebec students scored above the Canadian French average in all five reading subscales. Alberta students attending French-language schools achieved at the Canadian French mean for each of the reading subscales, and their peers in British Columbia achieved at this level for two of the three cognitive process subscales and one of the text structure subscales (Appendices B.1.8 and B.1.9).

Table 1.10

Comparison of Canadian and provincial achievement scores for reading subscales, by language of the school system

	Above* the Canadian average	At the Canadian average	Below* the Canadian average
Anglophone school systems			
Reading – Cognitive process subscales			
Locating information			
		Newfoundland and Labrador, Prince Edward Island, Nova Scotia, Quebec, Ontario, Alberta, British Columbia	New Brunswick, Manitoba, Saskatchewan
Understanding			
	Ontario	Nova Scotia, Quebec, Alberta, British Columbia	Newfoundland and Labrador, Prince Edward Island, New Brunswick, Manitoba, Saskatchewan
Evaluating and reflecting			
	Ontario	Newfoundland and Labrador, Prince Edward Island, Nova Scotia, Quebec, Alberta, British Columbia	New Brunswick, Manitoba, Saskatchewan
Reading – Text structure subscales			
Single-text structure			
	Ontario	Nova Scotia, Quebec, Alberta, British Columbia	Newfoundland and Labrador, Prince Edward Island, New Brunswick, Manitoba, Saskatchewan
Multiple-text structure			
	Alberta	Prince Edward Island, Nova Scotia, Quebec, Ontario, British Columbia	Newfoundland and Labrador, New Brunswick, Manitoba, Saskatchewan
Francophone school systems			
Reading – Cognitive process subscales			
Locating information			
	Quebec	Manitoba, Alberta, British Columbia	Nova Scotia, New Brunswick, Ontario
Understanding			
	Quebec	Alberta	Nova Scotia, New Brunswick, Ontario, Manitoba, British Columbia
Evaluating and reflecting			
	Quebec	Alberta, British Columbia	Nova Scotia, New Brunswick, Ontario, Manitoba
Reading – Text structure subscales			
Single-text structure			
	Quebec	Alberta	Nova Scotia, New Brunswick, Ontario, Manitoba, British Columbia
Multiple-text structure			
	Quebec	Alberta, British Columbia	Nova Scotia, New Brunswick, Ontario, Manitoba

* Denotes significant difference

Note: Because Newfoundland and Labrador, Prince Edward Island, and Saskatchewan did not oversample students by language, results for only English-language schools are available for these provinces.

Table 1.11 presents a comparison of provincial results for the five reading subscales for anglophone and francophone school systems.

Table 1.11

Summary of differences in provincial achievement scores in reading subscales, by language of the school system

	Anglophone schools performed significantly better than francophone schools	Francophone schools performed significantly better than anglophone schools	No significant differences between school systems
Reading – Cognitive process subscales			
Locating information			
	Nova Scotia, Ontario		New Brunswick, Quebec, Manitoba, Alberta, British Columbia
Understanding			
	Nova Scotia, New Brunswick, Ontario, Manitoba, Alberta, British Columbia		Quebec
Evaluating and reflecting			
	Nova Scotia, Ontario		New Brunswick, Quebec, Manitoba, Alberta, British Columbia
Reading – Text structure subscales			
Single-text structure			
	Nova Scotia, New Brunswick, Ontario, Manitoba, Alberta, British Columbia		Quebec
Multiple-text structure			
	Nova Scotia, Ontario, Manitoba, Alberta, British Columbia		New Brunswick, Quebec

Note: Because Newfoundland and Labrador, Prince Edward Island, and Saskatchewan did not oversample students by language, results for only English-language schools are available for these provinces.

The results by language of the school system suggest that policy-makers may wish to analyze provincial results more closely, given that differences between the majority and minority language school systems are as high as 83 points for overall reading and 86 points for the cognitive process and text structure subscales.

Achievement in reading by gender

Policy-makers have an interest in reducing gender disparities in education. Canada, and indeed all countries participating in PISA, consistently reports gender gaps for 15-year-old students in reading proficiency, with girls outperforming boys by approximately one school year of learning (OECD, 2016a). This finding is consistent at the Grade 4 level, as reported in PIRLS 2016 (Brochu et al., 2018), although gender equity in reading achievement was found for some countries in that assessment. Weaker overall reading literacy among boys is an enduring and widespread phenomenon noted in studies of reading (OECD, 2016a).

Inclusive education is valued in Canadian provinces and territories and has led to the development of policies and resources to support inclusion. One aspect of inclusive education relates to gender identity. In the Canadian version of the PISA 2018 student questionnaire, the question about the student's gender was expanded from the female/male choices of previous assessments to allow two additional choices, as shown in the box below.

How do you identify yourself?
(Please select one response.)
Female
Male
I identify myself in another way.
I prefer not to say.

In Canada overall, 96.9 per cent of students identified themselves as female or male, with similar proportions identifying with each gender, 48.8 and 48.1 per cent, respectively. A small proportion of students identified themselves in another way (1.5 per cent) or preferred not to say (1.6 per cent). Similar proportions are observed in the provinces, with those who chose to identify themselves in another way ranging from 1.4 to 2.5 per cent. The proportion of those who preferred not to say ranged from 1.3 to 2.0 per cent, with fewer than 30 students choosing this option in 6 of the 10 provinces (Table 1.12).

Nevertheless, due to the relatively small proportions of students in Canada who did not identify themselves as either female or male, and in order to ensure international comparability, this report uses the two standardized gender categories from student administrative data to describe results for Canadian students by gender.

Table 1.12

Percentage of students by gender self-identification

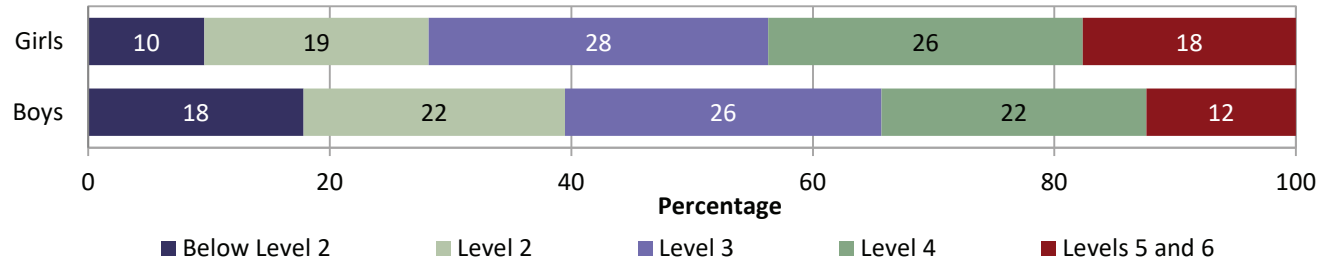
	Female		Male		I identify myself in another way		I prefer not to say	
	%	SE	%	SE	%	SE	%	SE
Canada	48.8	(0.6)	48.1	(0.6)	1.5	(0.1)	1.6	(0.1)
Newfoundland and Labrador	50.4	(1.0)	47.2	(1.0)	1.7‡	(0.3)	U‡	(0.3)
Prince Edward Island	47.1	(2.9)	49.3	(2.6)	2.1‡	(0.3)	U‡	(0.7)
Nova Scotia	49.3	(1.0)	46.6	(1.2)	2.5	(0.5)	1.5‡	(0.4)
New Brunswick	49.6	(1.1)	47.3	(1.1)	1.6	(0.3)	1.4‡	(0.3)
Quebec	49.9	(1.0)	47.0	(1.0)	1.4	(0.2)	1.7	(0.2)
Ontario	48.3	(1.3)	48.8	(1.2)	1.4	(0.2)	1.5	(0.3)
Manitoba	48.0	(1.3)	48.5	(1.3)	1.6	(0.3)	1.8	(0.3)
Saskatchewan	47.5	(1.0)	49.8	(1.0)	1.4	(0.2)	1.3‡	(0.3)
Alberta	49.6	(0.7)	47.4	(0.7)	1.7	(0.3)	1.3‡	(0.3)
British Columbia	48.4	(1.3)	48.1	(1.2)	1.5	(0.3)	2.0	(0.4)

‡ There are fewer than 30 observations.
U Too unreliable to be published.

As was the case in PISA 2009, the previous administration in which reading was the major domain of the assessment, girls performed significantly better than boys in PISA 2018. Eighty-two per cent of boys attained Level 2 or higher, compared with 90 per cent of girls (Figure 1.8, Appendix B.1.10b). This type of disparity is consistent across most countries participating in PISA 2018 (OECD, 2019b) as well as across all Canadian provinces.

Figure 1.8

Percentage of students at each proficiency level in reading in Canada, by gender



Note: Percentages may not add up to 100 due to rounding.

Compared to the respective Canadian averages, a similar percentage of both girls and boys in Newfoundland and Labrador, Prince Edward Island, Nova Scotia, Quebec, Ontario, Alberta, and British Columbia achieved at or above the expected level of reading proficiency (Level 2) for 15-year-old students. In Saskatchewan, girls also attained results similar to those in Canada overall, while boys attained a lower percentage. The proportion of boys and girls achieving at or above Level 2 was lower in New Brunswick and Manitoba than the respective Canadian averages (Table 1.13). Within all provinces, a higher percentage of girls achieved at or above the expected level of achievement (Appendix B.1.10b).

Table 1.13

Comparison of Canadian and provincial results for percentage of students achieving at or above Level 2 in reading, by gender

Girls		
Higher percentage than Canada	**The same percentage as Canada**	**Lower* percentage than Canada**
	Newfoundland and Labrador, Prince Edward Island, Nova Scotia, Quebec, Ontario, Saskatchewan, Alberta, British Columbia	New Brunswick, Manitoba
Boys		
Higher percentage than Canada	**The same percentage as Canada**	**Lower* percentage than Canada**
	Newfoundland and Labrador, Prince Edward Island, Nova Scotia, Quebec, Ontario, Alberta, British Columbia	New Brunswick, Manitoba, Saskatchewan

* Denotes significant difference

A higher proportion of boys than girls achieved below Level 2 in Canada and all provinces. Moreover, a higher proportion of girls than boys were high performers in reading (Levels 5 and 6) in Canada overall and in all provinces with the exception of Newfoundland and Labrador, Prince Edward Island, and New Brunswick, where no statistically significant difference was observed (Table 1.14, Appendix B.1.10b).

Table 1.14

Comparison of Canadian and provincial results for percentage of students achieving at the lowest and highest proficiency levels in reading, by gender

Levels 5 and 6		
Percentage of girls is significantly higher than percentage of boys	**Percentage of boys is significantly higher than percentage of girls**	**No significant differences in the percentage of boys and girls**
Canada, Nova Scotia, Quebec, Ontario, Manitoba, Saskatchewan, Alberta, British Columbia		Newfoundland and Labrador, Prince Edward Island, New Brunswick
Below Level 2		
Percentage of girls is significantly higher than percentage of boys	**Percentage of boys is significantly higher than percentage of girls**	**No significant differences in the percentage of boys and girls**
	Canada, all provinces	

On average across Canada, girls outperformed boys by 29 points on the PISA 2018 reading assessment (Figure 1.9). At the provincial level, the gender gap favouring girls ranged from 26 points in Newfoundland and Labrador, Ontario, and Manitoba, to 40 points in Nova Scotia (Appendix B.1.11).

Figure 1.9

Canadian achievement scores in reading overall, by gender

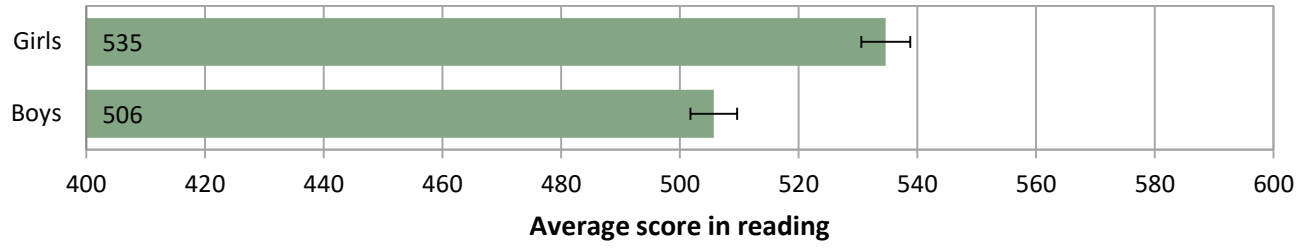


Table 1.15 presents a comparison of provincial achievement scores to the Canadian means for girls and boys. Both female and male students in Alberta scored above the respective Canadian averages in reading, while those in New Brunswick, Manitoba, and Saskatchewan scored below the Canadian averages. In all other provinces, both genders scored at the Canadian averages except in Nova Scotia, where boys scored below the Canadian average (Appendix B.1.11).

Table 1.15

Comparison of Canadian and provincial achievement scores in reading, by gender

Girls		
Above* the Canadian average for girls	**At the Canadian average for girls**	**Below* the Canadian average for girls**
Alberta	Newfoundland and Labrador, Prince Edward Island, Nova Scotia, Quebec, Ontario, British Columbia	New Brunswick, Manitoba, Saskatchewan
Boys		
Above* the Canadian average for boys	**At the Canadian average for boys**	**Below* the Canadian average for boys**
Alberta	Newfoundland and Labrador, Prince Edward Island, Quebec, Ontario, British Columbia	Nova Scotia, New Brunswick, Manitoba, Saskatchewan

* Denotes significant difference

For Canada overall, girls outperformed boys in each of the five subscales in reading (Table 1.16). Table 1.17 compares the provincial results for boys and girls with the Canadian averages for the subscales in reading. Both female and male students in Ontario achieved scores above the Canadian averages in the *understanding* and *single-text structure* subscales. Furthermore, boys in Ontario scored above the Canadian average in *evaluating and reflecting*. In Alberta, girls achieved scores above the Canadian average in *locating information*, *understanding*, and *multiple-text structure* (Table 1.17). The results for the remaining provinces were more variable (Appendices B.1.12 and B.1.13).

Table 1.16

Canadian achievement scores in reading subscales, by gender

	Girls		Boys		Difference (Girls–Boys)
	Average score	Standard error	Average score	Standard error	
Reading – Cognitive process subscales					
Locating information	531	(2.6)	503	(2.8)	28*
Understanding	534	(2.2)	506	(2.4)	28*
Evaluating and reflecting	541	(2.5)	514	(2.8)	26*
Reading – Text structure subscales					
Single-text structure	536	(2.2)	505	(2.4)	31*
Multiple-text structure	535	(2.1)	509	(2.4)	25*

* Denotes significant difference

Table 1.17

Comparison of Canadian and provincial achievement scores in reading subscales, by gender

	Above* the Canadian average for girls	At the Canadian average for girls	Below* the Canadian average for girls
Girls			
Reading – Cognitive process subscales			
Locating information	Alberta	Newfoundland and Labrador, Prince Edward Island, Nova Scotia, Quebec, Ontario, British Columbia	New Brunswick, Manitoba, Saskatchewan
Understanding	Ontario, Alberta	Newfoundland and Labrador, Nova Scotia, Quebec, British Columbia	Prince Edward Island, New Brunswick, Manitoba, Saskatchewan
Evaluating and reflecting		Newfoundland and Labrador, Prince Edward Island, Nova Scotia, Quebec, Ontario, Alberta, British Columbia	New Brunswick, Manitoba, Saskatchewan
Reading – Text structure subscales			
Single-text structure	Ontario	Newfoundland and Labrador, Nova Scotia, Quebec, Alberta, British Columbia	Prince Edward Island, New Brunswick, Manitoba, Saskatchewan
Multiple-text structure	Alberta	Prince Edward Island, Nova Scotia, Quebec, Ontario, British Columbia	Newfoundland and Labrador, New Brunswick, Manitoba, Saskatchewan
Boys			
	Above* the Canadian average for boys	**At the Canadian average for boys**	**Below* the Canadian average for boys**
Reading – Cognitive process subscales			
Locating information		Newfoundland and Labrador, Prince Edward Island, Nova Scotia, Quebec, Ontario, Alberta, British Columbia	New Brunswick, Manitoba, Saskatchewan
Understanding	Ontario	Newfoundland and Labrador, Prince Edward Island, Quebec, Alberta, British Columbia	Nova Scotia, New Brunswick, Manitoba, Saskatchewan
Evaluating and reflecting	Ontario	Newfoundland and Labrador, Prince Edward Island, Quebec, Alberta, British Columbia	Nova Scotia, New Brunswick, Manitoba, Saskatchewan
Reading – Text structure subscales			
Single-text structure	Ontario	Newfoundland and Labrador, Prince Edward Island, Quebec, Alberta, British Columbia	Nova Scotia, New Brunswick, Manitoba, Saskatchewan
Multiple-text structure		Newfoundland and Labrador, Prince Edward Island, Nova Scotia, Quebec, Ontario, Alberta, British Columbia	New Brunswick, Manitoba, Saskatchewan

* Denotes significant difference

Girls achieved higher scores than boys in the five reading subdomains in all provinces except Prince Edward Island, where no difference in reading scores was observed for *evaluating and reflecting* and *multiple texts structure* (Table 1.18, Appendices B.1.12 and B.1.13).

Table 1.18

Summary of differences in provincial results in reading subscales, by gender

	Girls performed significantly better than boys	Boys performed significantly better than girls	No significant difference between girls and boys
Reading – Cognitive process subscales			
Locating information			
	All provinces		
Understanding			
	All provinces		
Evaluating and reflecting			
	Newfoundland and Labrador, Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan, Alberta, British Columbia		Prince Edward Island
Reading – Text structure subscales			
Single-text structure			
	All provinces		
Multiple-text structure			
	Newfoundland and Labrador, Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan, Alberta, British Columbia		Prince Edward Island

Changes in reading performance over time

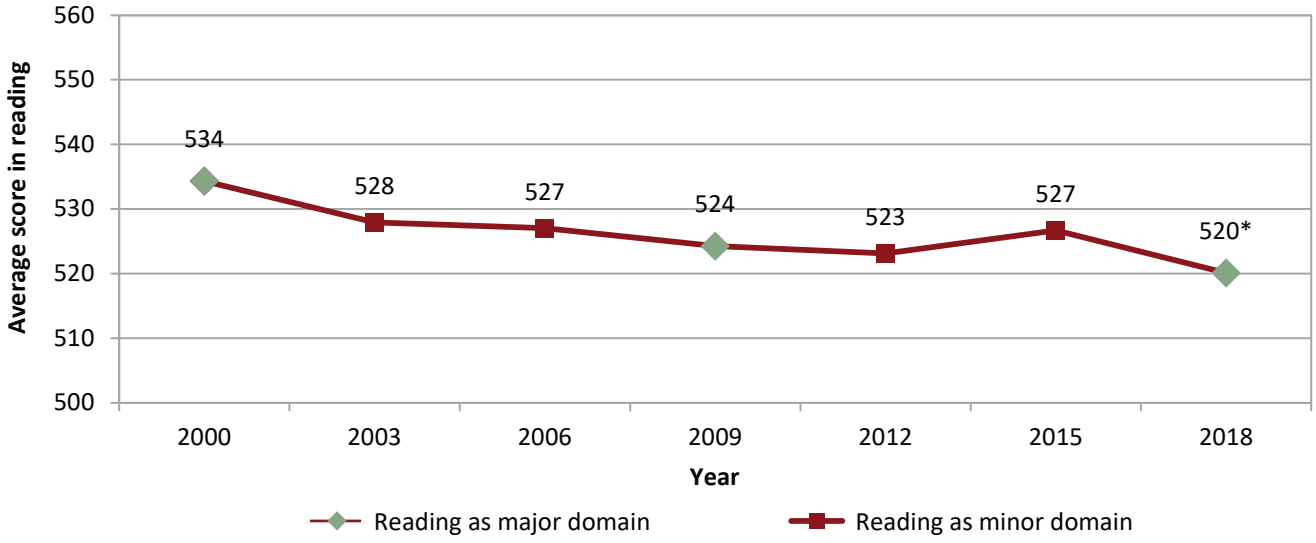
The richness of the PISA data grows with every cycle. This is especially true of PISA 2018, which constitutes the seventh assessment of reading since 2000, when the first major assessment of reading took place. More importantly, this is the third PISA assessment with reading as the major domain, the second one being PISA 2009. Performance changes over time are always compared to a baseline year, an administration in which the subject was the major domain; as a result, PISA 2018 enables countries and provincial education systems to compare their own performance over time between 2000, 2009, and 2018. This provides important information on the performance of individual education systems for almost two decades and relative to other systems, which can be used to inform educational policy and instructional practices.

While this section looks at changes over time, performance differences should be interpreted with caution. More specifically, in order to allow for comparability over time, some common assessment items were used in each survey and an equating procedure was used to align performance scales. However, all estimates of statistical quantities are associated with statistical uncertainty, and this is also true for the transformation parameters used to equate PISA scales over time. A linkage error that reflects this uncertainty is included in the estimate of the standard error for estimates of PISA performance trends and changes over time (OECD, 2019b). Consequently, only changes that are indicated as statistically significant should be considered.

In Canada, as well as on average across the OECD countries, reading performance declined between 2000 and 2018. In the 37 countries that participated in both PISA 2000 and PISA 2018, reading performance improved on a statistically significant basis in 10 countries, while it decreased in 11 countries, with the other countries maintaining their scores. At the provincial level, no significant change in reading achievement was observed in Newfoundland and Labrador, Prince Edward Island, Nova Scotia, and Ontario between 2000 and 2018. However, a decline in reading performance was observed in all the remaining provinces between these two assessment years (Figure 1.10 and Appendix B.1.14a).

Figure 1.10

Canadian results in reading over time, 2000–2018



* Significant difference compared with baseline (2000)

In contrast to the decline between 2000 and 2018, reading performance remained unchanged in Canada and on average across the OECD countries between 2009 and 2018. It is worth noting that, out of the 62 countries that participated in both PISA 2009 and PISA 2018, reading performance improved in 15 countries and declined in 16 countries on a statistically significant basis between the baseline year 2009 and 2018. No changes were observed in the remaining countries. Provincially, no significant change in reading achievement was observed in any of the provinces between 2009 and 2018 (Table 1.19 and Appendix B.1.14b).

Table 1.19

Canadian results in reading over time, 2009–2018

	2009		2012		2015		2018	
	Average score	Standard error	Average score	Standard error	Average score	Standard error	Average score	Standard error
Canada	524	(1.5)	523	(3.2)	527	(4.1)	520	(4.0)
Newfoundland and Labrador	506	(3.7)	503	(4.5)	505	(4.9)	512	(5.6)
Prince Edward Island	486	(2.4)	490	(3.7)	515*	(7.0)	503	(9.0)
Nova Scotia	516	(2.7)	508	(4.0)	517	(6.0)	516	(5.2)
New Brunswick	499	(2.5)	497	(3.7)	505	(6.3)	489	(5.0)
Quebec	522	(3.1)	520	(4.4)	532	(5.8)	519	(5.0)
Ontario	531	(3.0)	528	(5.1)	527	(5.6)	524	(5.0)
Manitoba	495	(3.6)	495	(4.2)	498	(6.0)	494	(4.9)
Saskatchewan	504	(3.3)	505	(3.8)	496	(4.9)	499	(4.6)
Alberta	533	(4.6)	525	(4.8)	533	(6.2)	532	(5.5)
British Columbia	525	(4.2)	535	(5.2)	536	(6.5)	519	(5.7)

* Significant difference compared with baseline (2009)
Note: The linkage error is incorporated into the standard error for 2012, 2015, and 2018.

At the Canadian level, the proportion of 15-year-old students who are low performers in reading increased between 2009 and 2018; this was also the case in Nova Scotia, New Brunswick, Ontario, and British Columbia. In contrast, the proportion of students achieving Levels 5 and 6 remained unchanged over the 2009 to 2018 period across Canada overall, while, at the provincial level, the proportion of high-performing students increased in Newfoundland and Labrador and Prince Edward Island (Appendix B.1.15).

A gender gap in reading achievement favouring girls was observed in Canada and all provinces in 2009, and the same gender gap was again observed consistently across Canada and in all the provinces in 2018 (Appendix B.1.16).

Summary

Canada continues to perform well in reading, with close to 90 per cent of Canadian students reaching the baseline level of reading proficiency required to participate fully in modern society (Level 2), while almost one in six students reached Level 5 or 6. Globally, Canada ranked first (along with Estonia, Finland, Ireland, and Korea) among OECD countries and fourth among all participating countries, in reading on average.

In spite of these strong results, PISA 2018 achievement in reading literacy also suggests that there is cause for some concern. Reading performance in PISA has declined in Canada overall and in many provinces since 2000. One in seven Canadian students scored at the lowest levels identified by PISA (below Level 2), and students in minority language settings achieved lower results in reading compared to their counterparts in majority-language settings in most provinces. Furthermore, the gap in reading achievement between girls and boys persists.

Chapter 2

A Profile of Students and Their Engagement in Reading

PISA contextual questionnaires

As part of the PISA assessment, students and their school principals complete questionnaires that are designed to provide all provinces and territories with contextual information to aid in the interpretation of the performance results. Researchers, policy-makers, and practitioners can use the information provided by these questionnaires to help them determine what factors influence learning outcomes. The content of the contextual questionnaires changes depending on which of the three domains is the primary focus in a PISA assessment.

As the major domain of PISA 2018 was reading, the contextual questions accompanying the assessment provided information on factors that have been found in the past cycles of PISA to correlate with reading achievement. The PISA student questionnaire gathers information about students' home background, their approaches to learning, and their learning environments. Although this questionnaire covers many relevant areas, only a select number of results are presented here for illustrative purposes. More detailed analysis of the student and school questionnaires will be presented in future CMEC reports and publications.

Student demographic characteristics

A vast array of literature has illustrated that learning outcomes are affected by a student's individual and family demographic and socioeconomic characteristics. These include gender, socioeconomic status, immigrant status, and language. This section reports descriptive results for three variables (economic, social, and cultural status; immigrant status; and language spoken at home) and their relationship with reading achievement. The relationship between gender and reading achievement has been reported in Chapter 1. Results are also compared with data from previous pan-Canadian and international assessments, when available.

Socioeconomic status

Socioeconomic status (SES), which comprises both cultural and economic factors, has often been represented by a complex cluster of variables that include parents' occupations, parents' educational attainment, learning resources in the home, and how parents communicate the value of education to their children, among other variables (Crowe, 2013; Chevalier, Harmon, O'Sullivan, & Walker, 2013).

A consequence of SES and home environment is that educational attainment tends to have an intergenerational correlation: that is, highly educated parents are more likely to have children who obtain more education, while parents with less education are more likely to have children who obtain relatively low levels of education (Causa, Dantan, & Johansson, 2009; Chevalier et al., 2013; Onuzo, Garcia, Hernandez, Peng, & Lecoq, 2013). Because educational attainment is a central component of social mobility (i.e., the relationship between the socioeconomic status of parents and that of their offspring when they become adults), policy-makers have a strong interest in improving educational outcomes for all students, regardless of their socioeconomic backgrounds (Chevalier et al., 2013). Fortunately, evidence suggests that well-structured policy interventions,

such as income support policies, have a particularly strong positive effect on the most disadvantaged children and families (Causa et al., 2009; Merry, 2013).

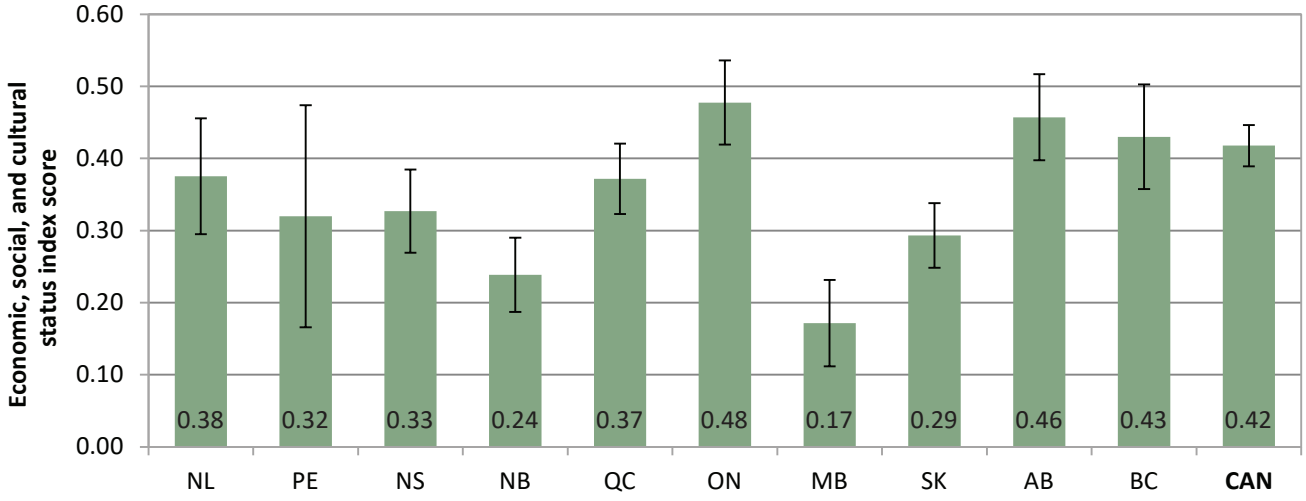
Student economic, social, and cultural status

In PISA, SES is measured using the index of economic, social, and cultural status (ESCS), which is derived from three indices: the highest occupational status of students' parents; the highest educational level attained by students' parents; and a number of home possessions that can be used as proxies for material wealth, including the number of books and other educational resources available in the home (OECD, 2019c). It is important to sound a note of caution: as the OECD (2016a) warns, "the link between socio-economic status and student achievement is neither absolute nor automatic, and should not be overstated" (p. 63).

Canada's ESCS index was 0.42; only three of the participating countries and economies (Iceland, Norway, and Denmark) had higher scores on this index than Canada. A higher index signifies a higher average SES. At the provincial level, the ESCS index varied from a high of 0.48 in Ontario to a low of 0.17 in Manitoba (Figure 2.1, Appendix B.2.1a).

Figure 2.1

Economic, social, and cultural status (ESCS) index scores



Note: The OECD average for the ESCS index is -0.03, with a standard error of 0.0.

For the purposes of reporting the ESCS index, the top 25 per cent (top quarter) of the index were defined as socioeconomically advantaged students, whereas the bottom 25 per cent (bottom quarter) were defined as socioeconomically disadvantaged students (OECD, 2017). The socioeconomically advantaged students outperformed the disadvantaged students in PISA 2018 across all countries and economies, although the difference in performance related to SES status varies considerably (OECD, 2019c). This performance pattern is found in all provinces in Canada. As shown in Table 2.1, 6.7 per cent of the variation in reading achievement results in Canada as a whole can be attributed to differences in socioeconomic status. This pattern holds true for reading overall, as well as for all reading subscales (Appendices B.2.2 and B.2.3). Provincially, socioeconomic status explained more of the variation in overall reading scores in Quebec (9.4 per cent) and less of the variation in Manitoba (4.6 per cent) (Appendix B.2.1b).

Table 2.1

Relationship between reading achievement and the ESCS index

	Socioeconomically advantaged students	Socioeconomically disadvantaged students	Difference (advantaged–disadvantaged)	Percentage of variance explained by SES factors
	Average score	Average score		
Canada	**553**	**485**	**68***	**6.7**
Newfoundland and Labrador	546	491	55*	5.1
Prince Edward Island	549	471	78*	7.9
Nova Scotia	543	480	63*	6.1
New Brunswick	524	460	63*	5.6
Quebec	554	482	71*	9.4
Ontario	555	492	63*	4.8
Manitoba	526	468	58*	4.6
Saskatchewan	539	465	74*	8.7
Alberta	568	492	76*	9.2
British Columbia	544	483	61*	5.7
OECD	**534**	**445**	**89***	**12.0**

* Denotes significant difference

Compared to other OECD countries, Canada has better-than-average social mobility (Causa et al., 2009; OECD, 2017; Parkin, 2015). However, further research is required, because averages can obscure important patterns of disparity. For example, in Canada the gap between the educational attainments of Indigenous and non-Indigenous people is particularly noteworthy, and is attributable partly to higher levels of poverty among Indigenous families (Banting, Soroka, & Koning, 2013; Britain & Blackstock, 2015; Collin & Jensen, 2009).

Immigrant status

Canada has the second-largest foreign-born population in the world in proportion to its overall population, behind only Australia (CMEC, 2015; Duff & Becker-Zayas, 2017; Parkin, 2015). Research has found that children in immigrant families are more likely to be educationally disadvantaged (Andon, Thompson, & Becker, 2014; Bruckauf, 2016; OECD, 2010). Using data from earlier cycles of PISA, PIRLS, and the Trends in International Mathematics and Science Study (TIMSS), Andon et al. (2014) have concluded that an achievement gap exists between immigrant and non-immigrants students in the three domains of reading, mathematics, and science across OECD countries.

In Canada, immigrants are more likely than non-immigrants to fall into low-income categories (Collin & Jensen, 2009; CMEC, 2015). Despite this disadvantage, Canada is among the OECD countries that are more successful in closing the "immigrant achievement gap" (Parkin, 2015; Wech & Weinkam, 2016).

Comparisons of average achievement between students who are immigrants and those who were born in Canada must be treated with caution, as scores may obscure important disparities among immigrant groups (Schnepf, 2008). Immigrant children and youth are not homogeneous (Andon et al., 2014; OECD, 2010; Parkin, 2015; Schnepf, 2008; Wech & Weinkam, 2016). They vary with respect to where they completed their previous education, at what age they were immersed in schooling in one of Canada's official languages, and whether they already spoke English or French upon arriving in Canada (Bruckauf, 2016; OECD, 2016a). Like their domestic-born counterparts, immigrant children and youth also vary in the levels of education held by their parents.

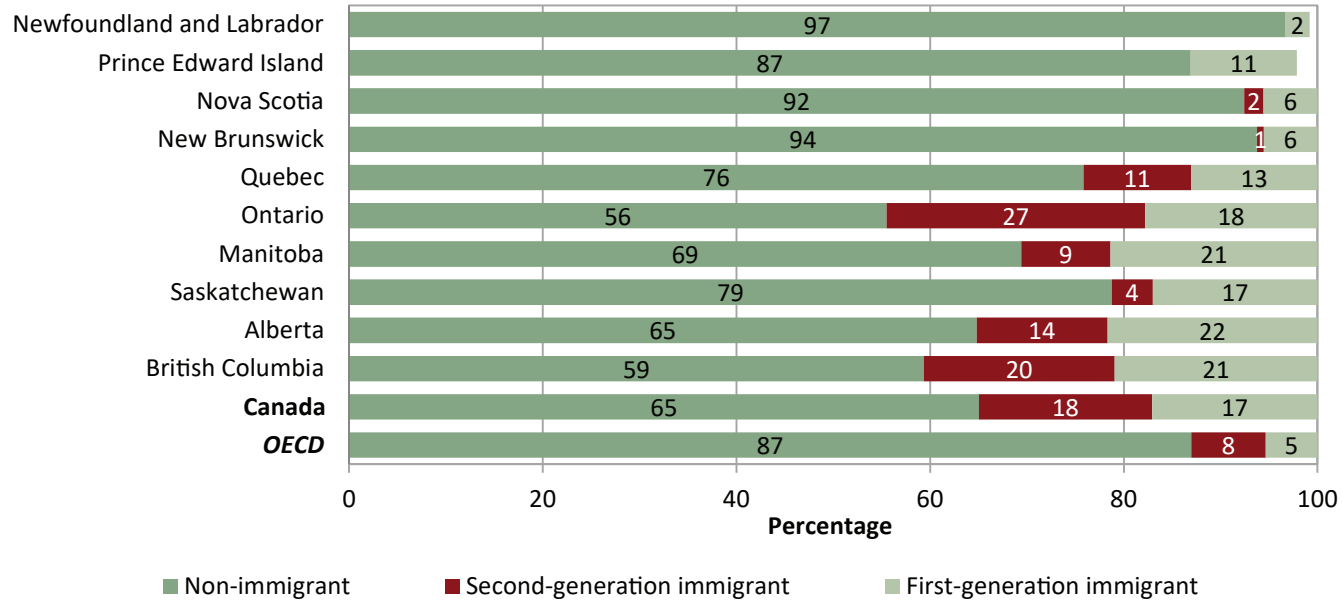
In PISA, students are classified using three categories related to immigrant status (OECD, 2019c, Chapter 9, p. 4):

- **Non-immigrant** students have at least one parent who was born in the country in which the assessment was administered, regardless of whether the student himself or herself was born in that country.
- **Second-generation immigrant** students were born in the country in which the assessment was administered but have foreign-born parents.
- **First-generation immigrant** students are foreign-born students whose parents are also foreign-born.

In Canada, 35 per cent of students identified themselves as having an immigrant background. Provincially, the highest proportion of immigrant students were in Ontario (44 per cent) and British Columbia (41 per cent) (Figure 2.2, Appendix B.2.4a). In the majority of countries participating in PISA 2018, non-immigrant students outperformed their first- and second-generation immigrant peers. This finding has been consistent across previous cycles of PISA (OECD, 2019c). However, this pattern is not observed in all countries, including Canada.

Figure 2.2

Percentage of students by their immigrant status

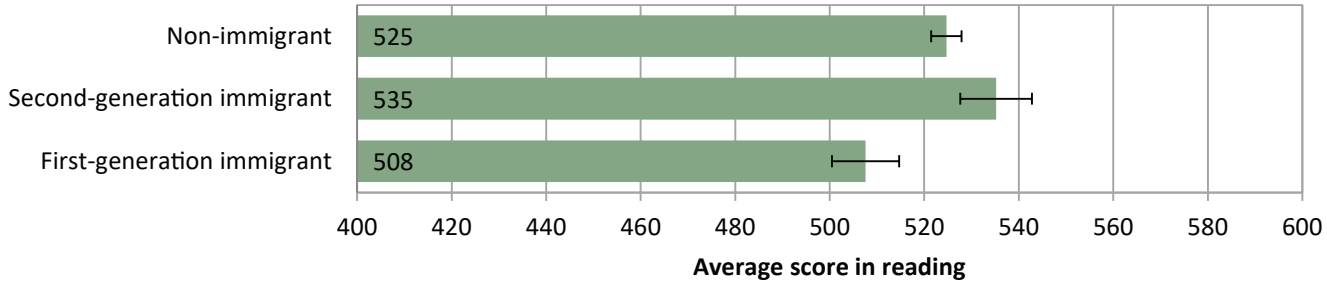


Note: Owing to the small sample size, percentages for second-generation immigrant students participating in Newfoundland and Labrador and Prince Edward Island are not indicated separately, and so percentages may not add up to 100.

In general, Canadian immigrant students performed as well as non-immigrant students on the reading assessment. However, if we look at the different immigrant groups, first-generation immigrant students in Canada were outperformed by their non-immigrant and second-generation immigrant peers. As well, second-generation immigrant students had significantly higher average reading scores compared to non-immigrant students (Figure 2.3). These comparisons are quite variable across provinces (see Appendix B.2.4b). The most notable differences were observed in Quebec, where non-immigrant students outperformed both first- and second-generation immigrant students, and in New Brunswick, where first-generation immigrant students outperformed non-immigrant students. The results by the reading subscales are presented in Appendices B.2.5 and B.2.6.

Figure 2.3

Relationship between immigrant status and reading achievement in Canada



Language spoken at home

Canada is a multilingual and multicultural country with various immigrant and Indigenous populations. In the 2016 census, over 200 languages were reported as a mother tongue (Statistics Canada, 2017b). "Mother tongue," as used in Statistics Canada data reports, may be considered synonymous with "first language spoken." Canada's language groups may be classified into three distinct categories: official languages, non-official or heritage languages, and Indigenous languages (Duff & Becker-Zayas, 2017).

Learning in Canada's official languages

The two official languages of instruction in Canada are English and French, but the majority of students in Canada receive their first-language instruction in English. Although Canada is officially bilingual, New Brunswick is the only province outside Quebec with a substantial francophone population (31 per cent) (Statistics Canada, 2016b). Canada's federal government and provincial and territorial governments, both in principle and practice, support opportunities for all Canadians to learn one or both of Canada's official languages (Government of Canada, 2017; Statistics Canada, 2016a). To ensure that all students have the opportunity to learn both of Canada's official languages, all school systems offer English or French as second language courses, and French immersion programs are offered in public education systems throughout Canada.[9] Some provinces also offer bilingual programs that combine instruction in an official language and a heritage language or an Indigenous language. As well, many schools offer second-language courses in languages other than English or French (Government of Canada, 2017).

Provinces and territories are differently impacted by immigration, and this affects findings with respect to mother tongue. Immigrants are heavily concentrated in Canada's urban centres in British Columbia, Alberta, Ontario, and Quebec (Statistics Canada, 2015). Canadian census data from 2016 show that 72.5 per cent of immigrants have a first language other than French or English (Statistics Canada, 2017c).

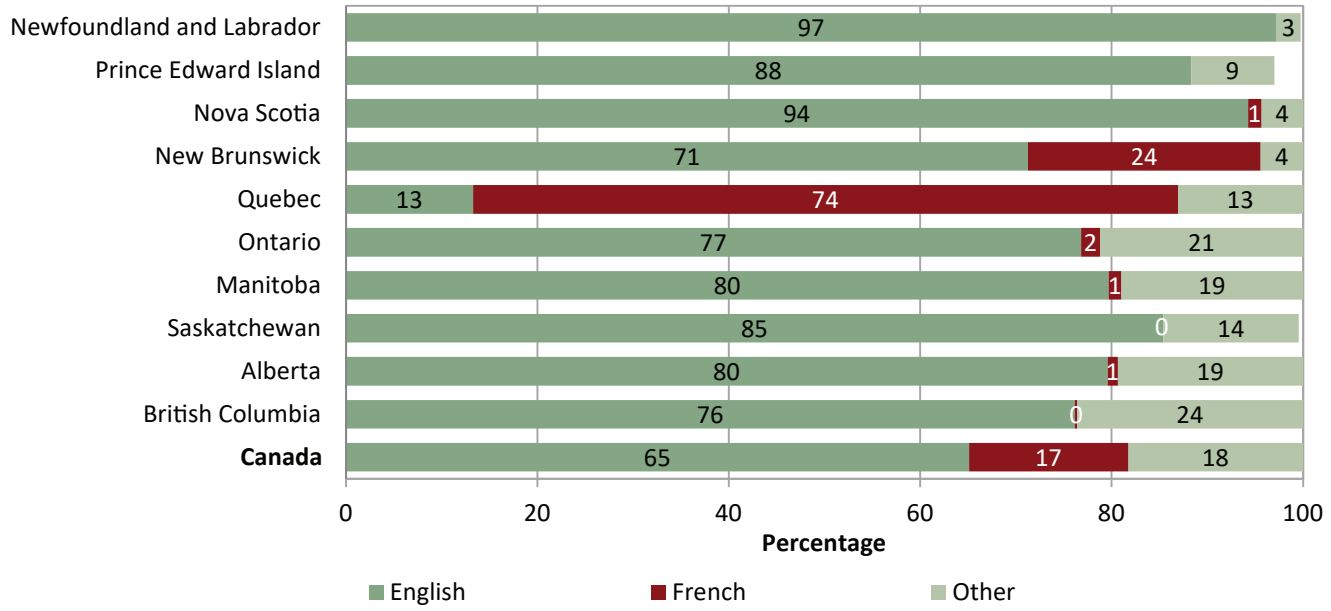
As part of the PISA student questionnaire, participants were asked, "What language do you speak at home most of the time?" The three response options were "English," "French," and "another language." The majority of students who participated in PISA 2018 spoke one of Canada's official languages at home.

In Canada overall, 65 per cent of students participating in PISA spoke English at home, while about equal proportions of students spoke French or another language at home (17 and 18 per cent, respectively). Quebec is the only province where French was spoken at home by the majority of students (74 per cent), while one in four students spoke French at home in New Brunswick. The proportion of students speaking a language other than French or English at home ranges from 24 per cent in British Columbia to 3 per cent in Newfoundland and Labrador (Figure 2.4, Appendix B.2.7a).

[9] For a more detailed description of language policies in Canada, see the country chapter for Canada in the *PIRLS 2016 Encyclopedia* (Mullis, Martin, Goh, & Prendergast, 2017).

Figure 2.4

Language spoken at home as reported by students



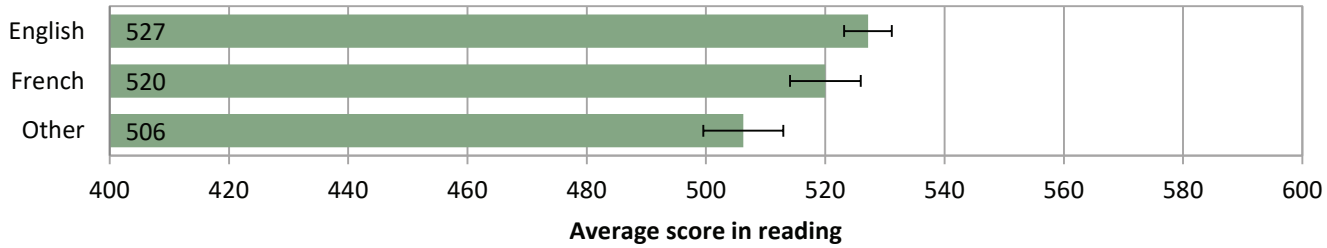
Note: Owing to the small sample size, percentages for francophone students participating in Newfoundland and Labrador and Prince Edward Island are not indicated separately, and so percentages may not add up to 100.

According to the 2016 census, over 70 per cent of immigrants to Canada report a language other than English or French as their mother tongue (Statistics Canada, 2017c). At the same time, the ability of immigrants to speak one of Canada's official languages is an important condition for their full participation in Canadian society.

As shown in Figure 2.5, students who spoke a language at home other than English or French had lower achievement in reading compared to those who spoke either of the two official languages at home. Students who spoke English at home outperformed students who spoke a language other than English or French in Nova Scotia, Quebec, Ontario, Manitoba, Saskatchewan, Alberta, and British Columbia. Students who spoke French at home outperformed students who spoke a language other than French or English in Quebec and Saskatchewan, but performed lower than students in the same category in Newfoundland and Labrador, New Brunswick, and Ontario (Appendix B.2.7b).

Figure 2.5

Relationship between students' language spoken at home and reading achievement in Canada



Students who spoke a language other than French or English at home outperformed those who spoke French at home in Newfoundland and Labrador, New Brunswick, and Ontario; but they performed lower than those who spoke French at home in Quebec and Saskatchewan (Appendix B.2.7b).

The results for the reading subscales were also examined by language spoken at home. For Canada overall, students who spoke a language other than English or French at home had lower achievement in three subscales — *locating information*, *evaluating and reflecting*, and *multiple-text structure*. For the remaining two subscales (*understanding* and *single-text structure*), students who spoke another language at home were outperformed by their English-speaking peers, but there was no significant difference compared to their French-speaking counterparts (Table 2.2, Appendices B.2.8 and B.2.9). These results varied within the provinces.

Table 2.2

Relationship between students' language spoken at home and achievement in reading subscales in Canada

	English		French		Other		Difference		
	Average score	Standard error	Average score	Standard error	Average score	Standard error	English–French	English–Other	French–Other
Locate information	523	(2.6)	520	(4.4)	504	(4.0)		*	*
Understand	526	(2.3)	517	(3.3)	510	(3.8)	*	*	
Evaluate and reflect	533	(2.5)	531	(4.1)	515	(4.4)		*	*
Single-text structure	528	(2.3)	515	(3.2)	510	(3.9)	*	*	
Multiple-text structure	527	(2.3)	527	(3.4)	510	(3.9)		*	*

* Denotes significant difference

Students' attitudes and beliefs

This section focuses on students' attitudes toward reading (enjoyment of reading and time spent reading for enjoyment), reading self-efficacy, reading preferences (types of reading materials and digital versus paper formats), and reading strategies. Further results from the student and school questionnaires on these issues will be published in forthcoming reports and in issues of *Assessment Matters!*[10]

Attitude toward reading

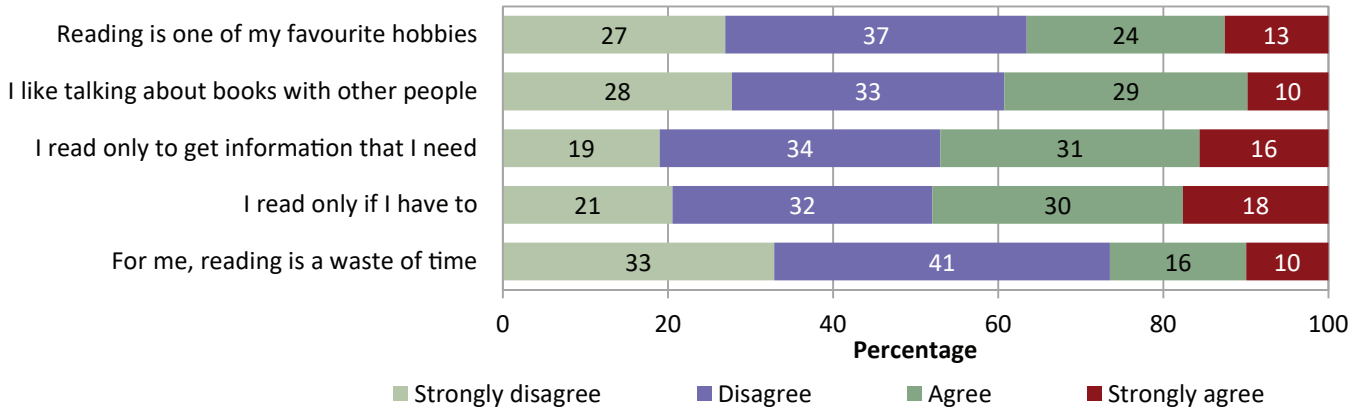
As students progress through public education, they learn increasingly challenging and sophisticated curriculum. In recent decades, curriculum and pedagogy have evolved in response to increasing information, increasing demands for skilled work and knowledge on the job, and increasing social and citizenship complexities in a globalized world. The literature refers to these changes as requiring "21st century knowledge and skills" and recognizes that assessing learning processes are as important as assessing learning outcomes (Goldman, 2012; Learned, Stockdill, & Moje, 2011; OECD, 2010). The student questionnaire that accompanied PISA 2018 provides insights into the attitudes, motivations, and skills that students are bringing to the process of "learning how to learn."

In PISA 2018, students were asked to respond to five items concerning attitudes toward reading, as shown in Figure 2.6 (Appendices B.2.10a–e). In Canada overall, close to 40 per cent of 15-year-old students reported that reading is one of their favourite hobbies and that they like talking about books with other people. However, one in four students reported that reading is a waste of time (Figure 2.6). This is a proportion similar to the results from PCAP 2016, in which almost one in five Grade 8/Secondary II students reported that they consider reading a waste of time (O'Grady, Fung, Brochu, Servage, & Tao, 2019). Additionally, approximately one out of two students across Canada and in the OECD countries reported that they read only if they have to or only to get the information that they need.

[10] *Assessment Matters!* is a series of articles and research notes available on the CMEC website, at https://cmec.ca/459/Overview.html

Figure 2.6

Percentage of Canadian students by their responses to questionnaire items related to the enjoyment of reading



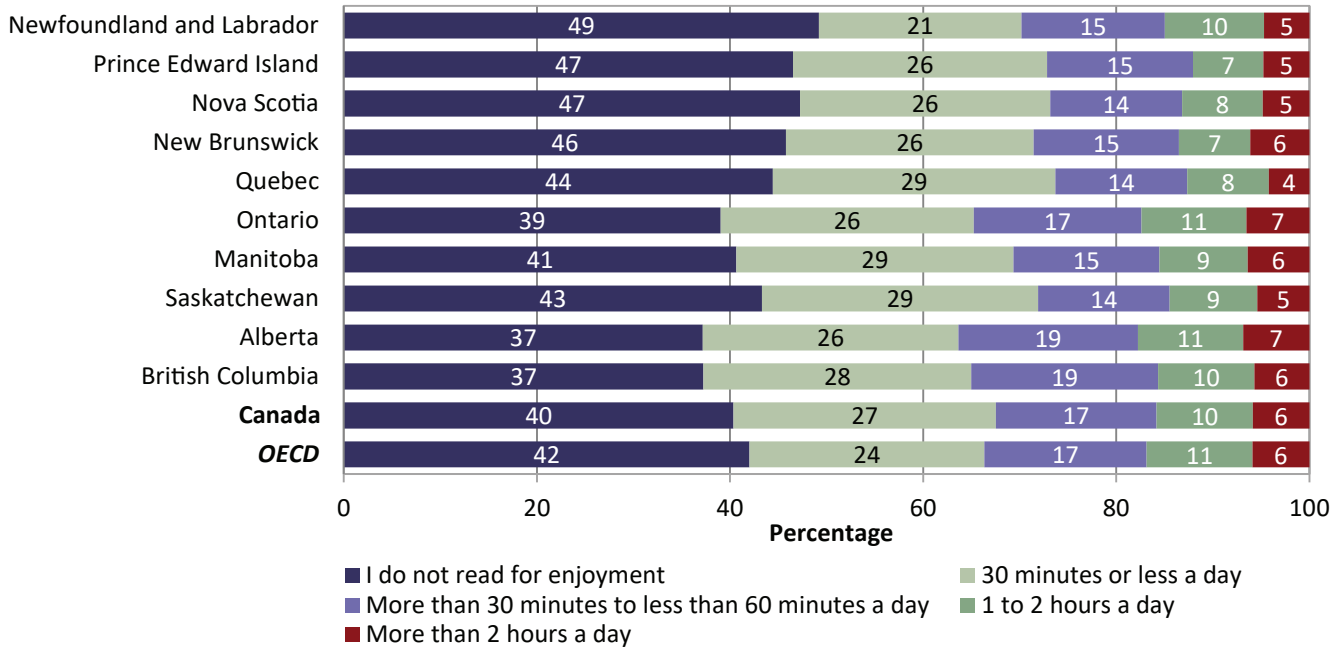
Note: Percentages may not add up to 100 due to rounding.

Positive attitudes toward reading were positively related to student reading achievement (Appendices B.2.10a–e). Students who indicated that they enjoy reading outperformed those who did not, as reported by their responses to statements on attitudes toward reading. This finding was consistent across the OECD countries and in all Canadian provinces except Prince Edward Island, where students' scores did not significantly differ by their responses to two of the five reading statements (Appendices B.2.10b and B.2.10c).

Students were also asked how much time they spent reading for enjoyment. As shown in Figure 2.7, 40 per cent of Canadian students did not read for enjoyment, which is similar to the proportion across the OECD countries (42 per cent). The proportion ranged from 37 per cent in Alberta and British Columbia to 49 per cent in Newfoundland and Labrador (Appendix B.2.11). The proportion of Canadian students who spent one or more hours per day reading for enjoyment was also similar to that in the OECD countries (16 and 17 per cent, respectively). Within Canada, the proportion of students in this category ranged from 12 per cent in Prince Edward Island to 18 per cent in Alberta (Appendix B.2.11).

Figure 2.7

Percentage of students by time spent reading for enjoyment

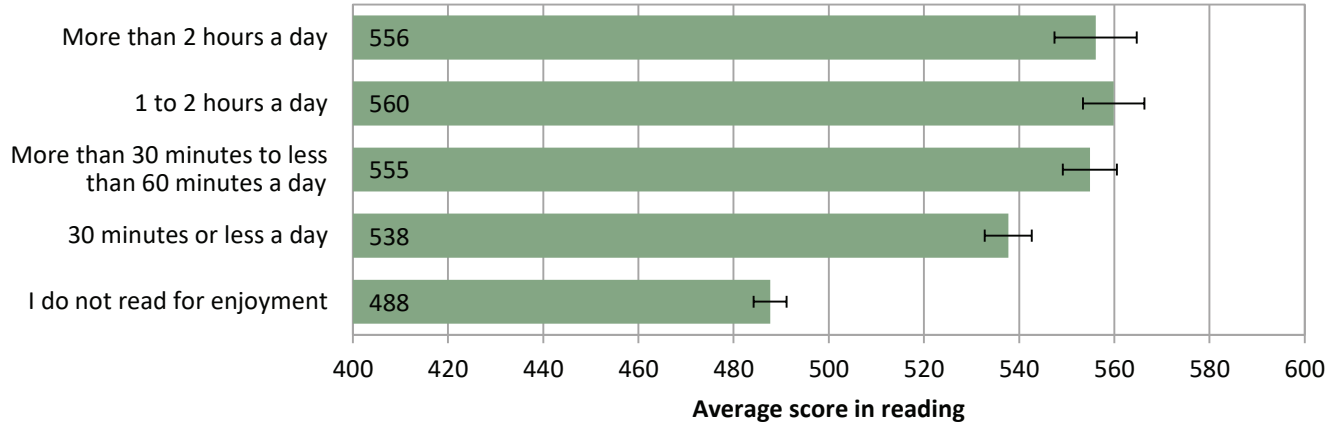


Note: Percentages may not add up to 100 due to rounding.

Student motivation to read has been shown to be an important factor that influences reading ability. Reading motivation involves a variety of factors, including self-efficacy, reading goals, social motivation, and intrinsic and extrinsic influences (Aarnoutse & Schellings, 2003). While reading strategies have been shown to be successful in the classroom, that success is contingent on the motivation of students to learn and use those strategies. Better readers tend to read more because of their higher motivation for reading; in turn, reading for pleasure is more strongly linked to cognitive progress in adolescence than to SES factors such as parental education (Sullivan & Brown, 2015). As shown in Figure 2.8, Canadian students who enjoy reading are more likely to have higher achievement in reading, although there appears to be a threshold, with little further improvement in reading scores when time spent on reading for enjoyment surpasses 30 minutes per day (Appendix B.2.11). This general pattern was observed in most of the provinces. Notable exceptions include students in New Brunswick and British Columbia who reported reading more than two hours a day for enjoyment: in the former province, scores were lower, while, in the latter, scores were higher compared to students who spent 30 to 60 minutes reading for enjoyment. In Quebec, students who reported reading for enjoyment for more than two hours a day scored lower than who read one to two hours a day (Appendix B.2.11).

Figure 2.8

Relationship between students' time spent reading for enjoyment and reading achievement in Canada



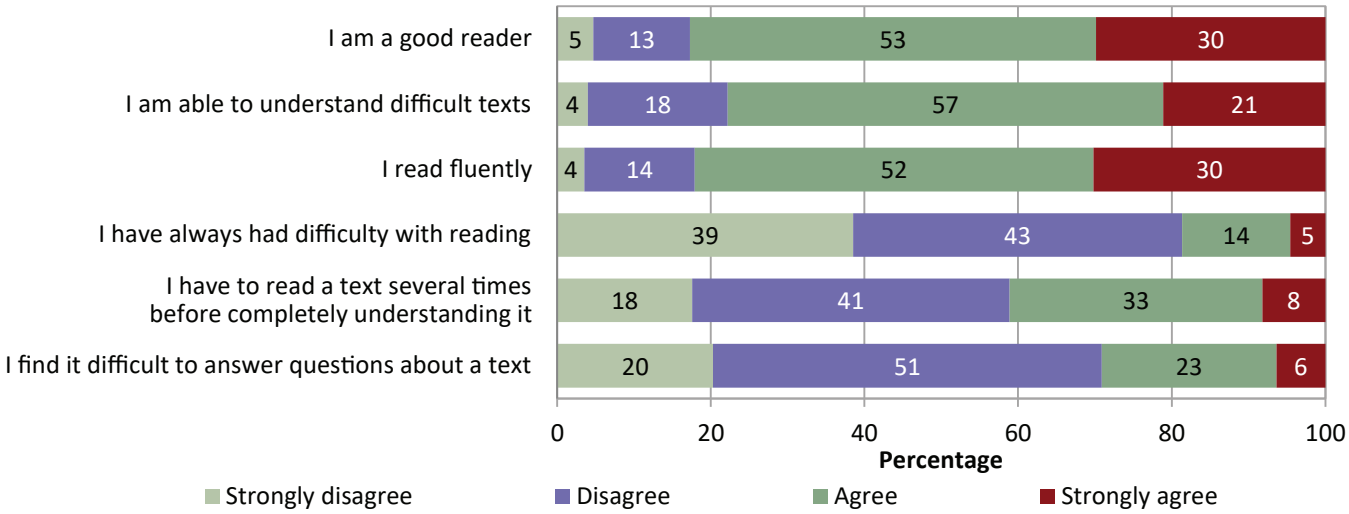
Reading self-efficacy

Self-efficacy refers to a student's belief that, by engaging in specific activities, he or she can produce desired effects, such as achieving a personal goal (Bandura, 1977). Although cognitive processes and strategies have been the focus of learning-to-read research for many years, student self-efficacy with respect to reading has been shown to be associated with reading ability. Research has revealed that students reporting higher levels of self-efficacy obtained higher reading comprehension scores than students reporting lower levels of perceived competence (Schunk & Pajares, 2009).

In PISA 2018, students were asked to respond to six items, shown in Figure 2.9, that gauged their feelings about their ability to read. Students responding positively to the first three items and negatively to the last three would have higher self-efficacy and be considered as confident in their reading abilities. For Canada overall, over 80 per cent of 15-year-olds believe that they are good readers and/or fluent readers, while a slightly smaller proportion of students reported that they are able to understand difficult texts. However, close to 20 per cent of students reported having difficulty with reading, while just over 40 per cent struggle with comprehension (Appendices B.2.12a–f).

Figure 2.9

Percentage of Canadian students by their responses to questionnaire items related to reading self-efficacy



Note: Percentages may not add up to 100 due to rounding.

Students' reading self-efficacy varied across provinces. In six of the provinces, at least 85 per cent of students believe that they are good readers (Appendix B.2.12a). The proportion of students that reported reading fluently ranged from 76 per cent in Newfoundland and Labrador to 84 per cent in Ontario and Alberta (Appendix B.2.12c). On the other hand, the proportion of students who reported difficulty with reading comprehension ranged from 35 per cent in Prince Edward Island to 46 per cent in Alberta (Appendix B.2.12e), while more than one-third of students in New Brunswick reported difficulty with reading and answering questions (Appendices B.2.12d and B.2.12f).

As shown in Table 2.3, there is a positive relationship between students' confidence in their ability to read well and their success in reading. Average reading scores were significantly lower for students with less confidence in their reading abilities and higher for those with more confidence. This is consistent with the pattern reported for Grade 4 students in PIRLS 2016 (Brochu et al., 2018) and for Grade 8 students in PCAP 2016 (O'Grady et al., 2019). Higher reading proficiency by confident readers in comparison to less confident readers was observed in all provinces.

Table 2.3

Relationship between reading self-efficacy and reading achievement in Canada

	Not confident at all		Not confident		Confident		Very confident		Difference
	Average score	Standard error	Average score	Standard error	Average score	Standard error	Average score	Standard error	Confident–not confident
I am a good reader[a]	446	(4.4)	477	(2.9)	518	(2.0)	573	(2.1)	40*
I am able to understand difficult texts[a]	445	(4.5)	485	(2.4)	528	(1.9)	572	(2.3)	43*
I read fluently[a]	439	(4.6)	473	(2.7)	517	(1.8)	576	(2.2)	45*
I have always had difficulty with reading[b]	456	(3.6)	468	(2.9)	520	(2.0)	562	(1.8)	52*
I have to read a text several times before completely understanding it[b]	482	(3.1)	504	(2.2)	542	(2.0)	550	(2.7)	37*
I find it difficult to answer questions about a text[b]	475	(3.5)	495	(2.6)	536	(1.8)	552	(2.7)	41*

* Denotes significant difference

Note: For this table, responses were converted from a four-point agreement–disagreement scale to a four-point level-of-confidence scale.

[a] Students who answered "strongly agree" are considered "very confident"; those who answered "strongly disagree" are considered "not confident at all."

[b] Students who answered "strongly disagree" are considered "very confident"; those who answered "strongly agree" are considered "not confident at all."

Reading preferences

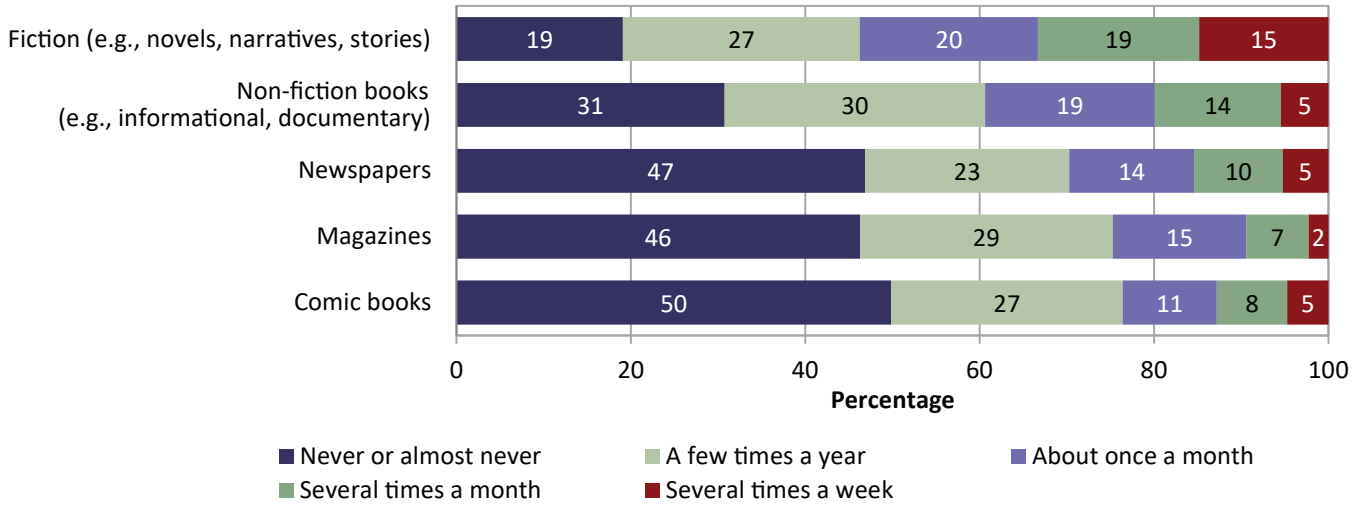
A big challenge for teachers is not simply getting students to read — it is getting them to enjoy it too. In motivating their students to read, language arts teachers are encouraged to expose students to a wide variety of genres in their classrooms and to allow students some choice in their reading materials to increase their engagement and to accommodate different reading skill levels (Gambrell, Marinak, Brooker, & McCrea-Andrews, 2011; Merga, 2015; Sturtevat, Boyd, Brozo, Hinchman, Moore, & Alvermann, 2010).

In PISA 2018, students were asked about the types of reading materials that they read because they wanted to. As shown in Figure 2.10, Canadian students reported a higher preference for reading fiction and a lower preference for magazines and comic books (Appendices B.2.13a–e). This general pattern holds up across participating countries as well as the Canadian provinces.

If reading a particular type of reading material once a month or more, in comparison to reading it a few times a year or less frequently, is taken to represent student's preference for reading that type of material, then interesting patterns in reading preferences emerge. Notably, compared to Canada, more students across the OECD countries preferred reading magazines (37 versus 25 per cent) and newspapers (41 versus 30 per cent). In the Canadian provinces, students' preferences for types of reading materials varied greatly. Notable findings were a high preference for reading magazines in Quebec, fiction and newspapers in Prince Edward Island, and non-fiction books in British Columbia, and a low preference for reading comic books in Prince Edward Island (Appendices B.2.13a–e).

Figure 2.10

Percentage of Canadian students by their responses to questionnaire items related to their preferences for reading material



Note: Percentages may not add up to 100 due to rounding.

As shown in Table 2.4, in Canada, there is a positive relationship between reading achievement and increasing frequency of reading fiction, non-fiction books, and newspapers, while reading magazines and comic books has little impact on reading scores (Appendices B.2.13a–e). On average across the OECD countries, only reading fiction is associated with a continual upward trend in reading scores, where the results did not taper off with increased frequency of reading. Provincially, results varied, but a positive relationship between reading achievement and an increase in the frequency of reading was found in most provinces for reading fiction and non-fiction books.

Table 2.4

Relationship between reading preferences and reading achievement in Canada

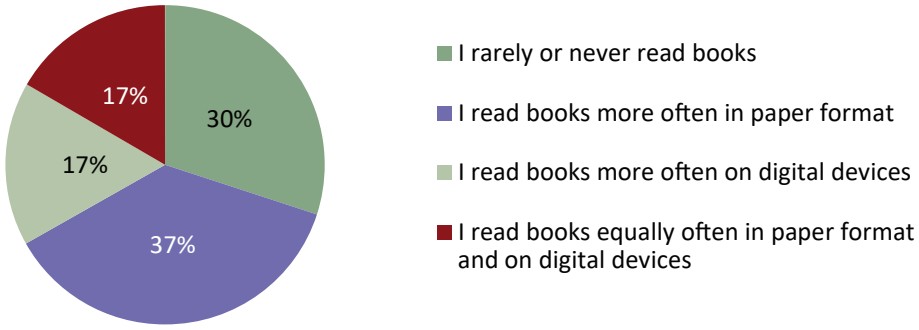
	Never or almost never		A few times a year		About once a month		Several times a month		Several times a week	
	Average score	Standard error	Average score	Standard error	Average score	Standard error	Average score	Standard error	Average score	Standard error
Fiction (e.g., novels, narratives, stories)	479	(2.4)	520	(2.2)	526	(2.8)	544	(2.9)	572	(2.9)
Non-fiction books (e.g., informational, documentary)	507	(2.1)	534	(2.3)	531	(3.1)	539	(2.9)	537	(4.5)
Newspapers	518	(1.7)	532	(2.5)	532	(2.8)	537	(3.6)	536	(4.9)
Magazines	524	(2.0)	530	(1.9)	529	(3.2)	521	(4.2)	508	(7.3)
Comic books	525	(2.1)	531	(2.3)	520	(3.4)	522	(3.7)	526	(6.1)

The PISA 2018 student questionnaire asked students about whether they preferred to read print or digital books. As shown in Figure 2.11, more than twice as many students in Canada overall preferred to read books in paper compared to in digital format. Similar proportions were found across the provinces, with the proportion of students who preferred to "read books more often in paper format" ranging from 32 per cent in Newfoundland and Labrador to 46 in Prince Edward Island, and those who preferred to "read books more often on digital devices" ranging from 11 per cent in New Brunswick to 19 per cent in Ontario (Appendix B.2.14). This preference for paper formats was consistent with the finding for Grade 8/Secondary II students in PCAP 2016,

in which the majority of students prefer to read on paper, both when reading for themselves and when reading for school (O'Grady et al., 2019).

Figure 2.11

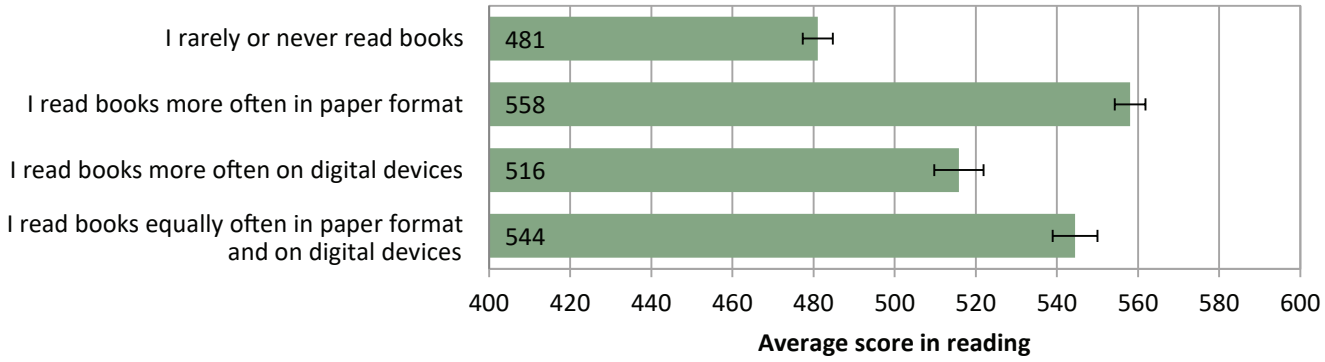
Canadian students' preferences for reading print or digital material



In Canada overall, students who preferred to read in paper format achieved higher scores than those who preferred a digital format or who read in both formats with equal frequency. For the 30 per cent of students who reported rarely or never reading books, reading achievement was significantly lower than that of their peers who read in any format (Figure 2.12, Appendix B.2.14). In all provinces, students who preferred reading in paper format outperformed their peers who reported rarely or never reading books as well as those who preferred reading on digital devices. In the majority of the provinces, there was no statistically significant difference in reading scores between students who read in both formats with equal frequency and students who read more often in paper format, except for Quebec, Ontario, Manitoba, and British Columbia, where the latter had higher reading achievement.

Figure 2.12

Relationship between students' preferences for reading format and reading achievement in Canada



Students' reading strategies

As Jang (2016) observes, "One of the most notable trends in literacy theory and research is the increasing interest in the reading and writing practices of adolescents" (p. 7). Interest has been driven in part by concerns about adolescent disengagement from reading, and the demands of complex global societies and knowledge economies (Goldman, 2012; Guthrie, Wigfield, & You, 2012; McKenna, Conradi, Lawrence, Jang, & Meyer, 2012; OECD, 2010). These factors have caused policy-makers and some researchers to call for a shift in the role of the language arts teacher from literature teacher to literacy teacher. In other words, language arts teachers in high school, and indeed high-school teachers in other subject areas, need to recognize that, over and above being content area teachers, they are also reading teachers, instructing students in the use of effective reading strategies (Wigent, 2013).

Good pedagogy in secondary-school grades thus calls for teachers to explicitly teach and guide students in the practice of effective reading strategies (Goldman, 2012). More and less effective reading strategies have been widely researched, and this research has established that students can learn strategies to help themselves when they encounter difficulties in their reading (Learned et al., 2011). Pedagogically, it is most helpful when the teacher can teach, and give students the opportunity to practise, an array of strategies and guide students effectively toward independent use of these strategies (Goldman, 2012; Wigent, 2013).

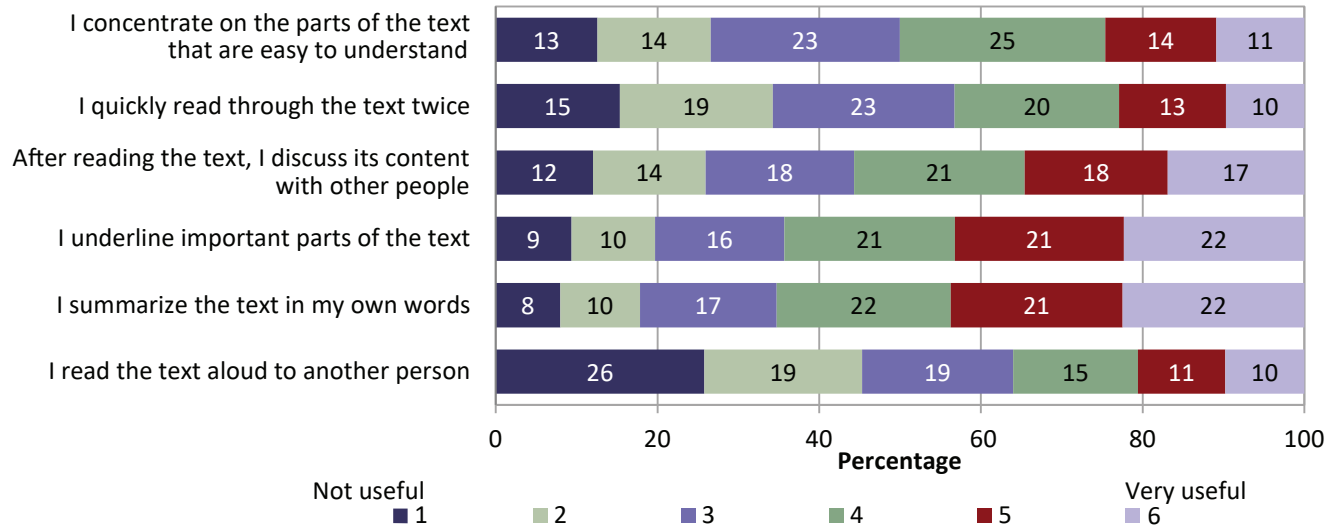
Reading literacy is an important skill that is necessary for full participation in society. Students are taught to read in the earliest grades, and reading-related activities become increasingly challenging throughout schooling. The reading strategies employed and the effort applied to reading activities might be expected to have some impact on reading performance. This section looks at students' perceptions of the use of reading strategies for understanding and memorizing texts.

There are several factors to consider when interpreting the usefulness of reading strategies as reported by students. Students may apply different strategies to different kinds of texts, depending on genre and level of difficulty. Both genres and modes of disciplinary thinking influence the ways in which students approach texts and the kinds of reading strategies that might be effective for comprehension (Goldman, 2012; Yoo, 2015). Students require a degree of metacognition to identify the strategies they are using. While effective reading instruction helps students develop such metacognition (Learned et al., 2011; Wigent, 2013), they may not be able to name some of the strategies they are using, or they may lack the metacognitive awareness to be able to identify that they are using particular strategies (Yoo, 2015).

In PISA 2018, students were given six reading strategies and asked to rank them on a six-point scale from "not useful" to "very useful," according to their usefulness for helping them understand and memorize texts. As shown in Figure 2.13, students reported that the most useful strategies were summarizing the text in their own words and underlining the important parts of the text. The same preferences were also reported in the provinces, but the proportions varied. The proportion of students who reported that summarizing the text in their own words was a very useful strategy ranged from 16 per cent in New Brunswick to 28 per cent in Quebec, and those who reported underlining the important parts of the text as a very useful strategy ranged from 17 per cent in Saskatchewan to 32 per cent in Quebec. The two strategies that were considered the least useful across Canada were reading the text aloud to another person and quickly reading through the text twice (Appendices B.2.15a–f).

Figure 2.13

Canadian students' perceptions of the usefulness of reading strategies for understanding and memorizing texts



Note: Percentages may not add up to 100 due to rounding.

Three strategies were found to be positively related to reading scores. Students who reported that discussing content with other people and summarizing the text in their own words were very useful strategies achieved significantly higher scores (by 45 and 39 points, respectively) than those who found that these strategies were not useful. To a lesser extent, students who reported underlining the important parts of the text scored higher (by 10 points) than those who found this strategy not useful (Table 2.5, Appendices B.2.15a–f). Both discussing content with others and summarizing in their own words are associated with a higher level of metacognition in reading. Higher reading scores for students who reported these two strategies as very useful, in comparison to those who did not find them useful, were observed in all provinces except in Prince Edward Island, where there was no significant difference with respect to discussing content with other people.

Table 2.5

Relationship between students' perception of the usefulness of reading strategies and reading achievement

	Not useful					Very useful
	1	2	3	4	5	6
I concentrate on the parts of the text that are easy to understand	523	540*	526	525	531	516
I quickly read through the text twice	526	533*	525	521	533	526
After reading the text, I discuss its content with other people	507	515	511	528*	542*	552*
I underline important parts of the text	522	523	518	524	538*	531*
I summarize the text in my own words	506	517	516*	524*	534*	544*
I read the text aloud to another person	523	532*	528	526	528	527

* Denotes significant difference compared to category 1 (not useful)

Summary

In PISA 2018, Canada placed near the top of all participating countries on the index of economic, social, and cultural status. In Canada overall and all the provinces, socioeconomically advantaged students outperformed disadvantaged students in reading achievement. In contrast to the majority of countries participating in PISA 2018, where non-immigrant students outperformed their first- and second-generation immigrant peers in reading, Canadian immigrant students performed as well as non-immigrant students. However, first-generation immigrant students did not perform as well as their non-immigrant and second-generation immigrant peers, while second-generation immigrant students had significantly higher average reading scores than non-immigrant students. In terms of language spoken at home, Canadian students who spoke a language other than English or French at home had lower reading achievement than those who spoke either of the two official languages at home.

In PISA 2018, students who reported that they enjoy reading and who are more confident about their reading abilities were more likely to have higher reading scores, although the patterns vary depending on time spent reading for enjoyment and type of reading material. For example, reading for enjoyment, even 30 minutes or less per day, was associated with higher average reading scores relative to not reading at all, and a positive association between reading scores and reading frequency was observed only among students who prefer to read fiction books. In terms of reading strategies, students who found discussing content with other people, summarizing the text in their own words, and underlining important parts of the text as very useful achieved significantly higher reading scores than those who did not find these strategies useful.

These findings highlight not only the relevance of the sociodemographic characteristics of students in determining reading achievement, but also the importance of their attitudes toward reading, sense of self-efficacy, reading preferences, and use of effective reading strategies.

Chapter 3

Canadian Students' Mathematics and Science Performance in an International Context

This chapter presents the overall results of the PISA 2018 assessments in the minor domains of mathematics and science. For each domain, the performance of 15-year-old students is first described in terms of PISA proficiency levels for Canada and the 10 provinces. The average mathematics and science scores of Canadian students are then compared to those from the other countries that participated in PISA 2018. Next, the performance of students enrolled in anglophone and francophone school systems in Canada is presented for those provinces where the samples of the two groups were of sufficient size. This is followed by a comparison between the performance of boys and girls in Canada and the provinces. Lastly, changes over time are discussed.

Defining mathematics and science

Since mathematics and science were minor domains in PISA 2018, there were fewer assessment items in these two areas than in the major domain of reading. As a result, PISA 2018 allows for an update only on overall performance in mathematics and science, and not on their subscales.

With an emphasis on functional knowledge and skills that facilitate active participation in society, the PISA definition of *mathematical literacy* and *scientific literacy* are as follow:

- *Mathematical literacy* is "an individual's capacity to formulate, employ and interpret mathematics in a variety of contexts. It includes reasoning mathematically and using mathematical concepts, procedures, facts and tools to describe, explain and predict phenomena. It assists individuals to recognise the role that mathematics plays in the world and to make the well-founded judgements and decisions needed by constructive, engaged and reflective citizens" (OECD, 2019a, p. 75).
- *Scientific literacy* is an individual's "ability to engage with science-related issues, and with the ideas of science, as a reflective citizen. A scientifically literate person is willing to engage in reasoned discourse about science and technology, which requires the competencies to explain phenomena scientifically, evaluate and design scientific enquiry, and interpret data and evidence scientifically" (OECD, 2019a, p. 15).

PISA achievement results by proficiency levels in mathematics and science

PISA has developed useful benchmarks that relate a range of average scores to levels of knowledge and skills, as measured by the assessment. Although these levels are not linked directly to any specific program of study, they provide an overall picture of students' accumulated understanding at age 15. PISA mathematical literacy is expressed on a six-level proficiency scale, whereas PISA scientific literacy is expressed on a seven-level proficiency scale. Tasks at the lower end of the scale (Level 1 in mathematics; Levels 1a and 1b in science) are deemed easier and less complex than tasks at the higher end (Level 6). Tables 3.1 and 3.2 provide summary descriptions of the tasks that students are able to do at each proficiency level for mathematics and science, and include the corresponding lower limit for each level. It is assumed that students classified at a given proficiency level can perform most of the tasks at that level as well as those at the lower levels.

Table 3.1

PISA 2018 mathematics proficiency levels – summary description

Level	Lower score limit	Percentage of students able to perform tasks at this level or above	Characteristics of tasks
6	669.30	2.4% of students across the OECD and 4.0% in Canada	Students at **Level 6** of the PISA mathematics assessment are able to successfully complete the most difficult PISA items. At Level 6, students can: ◆ conceptualize, generalize, and utilize information based on their investigations and modelling of complex problem situations, and can use their knowledge in relatively non-standard contexts ◆ link different information sources and representations and flexibly translate among them ◆ apply advanced mathematical insight and understanding, along with a mastery of symbolic and formal mathematical operations and relationships, to develop new approaches and strategies for attacking novel situations ◆ reflect on their actions, and formulate and precisely communicate their actions and reflections regarding their findings, interpretations, and arguments, and the appropriateness of these to the original situation
5	606.99	10.9% of students across the OECD and 15.3% in Canada	At **Level 5**, students can: ◆ develop and work with models for complex situations, identifying constraints and specifying assumptions ◆ select, compare, and evaluate appropriate problem-solving strategies for dealing with complex problems related to these models ◆ work strategically using broad, well-developed thinking and reasoning skills, appropriate linked representations, symbolic and formal characterizations, and insight pertaining to these situations ◆ begin to reflect on their work and formulate and communicate their interpretations and reasoning
4	544.68	29.5% of students across the OECD and 37.1% in Canada	At **Level 4**, students can: ◆ work effectively with explicit models for complex concrete situations that may involve constraints or call for making assumptions ◆ select and integrate different representations, including symbolic representations, linking them directly to aspects of real-world situations ◆ utilize their limited range of skills and reason with some insight, in straightforward contexts ◆ construct and communicate explanations and arguments based on their interpretations, arguments, and actions
3	482.38	53.8% of students across the OECD and 62.9% in Canada	At **Level 3**, students can: ◆ execute clearly described procedures, including those that require sequential decisions ◆ use their interpretations as a base to build a simple model or to select and apply simple problem-solving strategies ◆ interpret and use representations based on different information sources, and reason directly from them ◆ handle percentages, fractions, and decimal numbers, and work with proportional relationships ◆ engage in basic interpretation and reasoning
2	420.07	76.0% of students across the OECD and 83.7% in Canada	**Level 2** is considered the baseline level of mathematics proficiency that is required to participate fully in modern society. At Level 2, students can: ◆ interpret and recognize situations in contexts that require no more than direct inference ◆ extract relevant information from a single source and make use of a single representational mode ◆ employ basic algorithms, formulae, procedures, or conventions to solve problems involving whole numbers ◆ make literal interpretations of the results
1	357.77	90.9% of student across the OECD and 95.0% in Canada	At **Level 1**, students can: ◆ answer questions involving familiar contexts where all relevant information is present and the questions are clearly defined ◆ identify information and carry out routine procedures according to direct instructions in explicit situations ◆ perform actions that are almost always obvious and follow immediately from the given stimuli

Adapted from OECD 2019a, p. 92.

Table 3.2

PISA 2018 science proficiency levels – summary description

Level	Lower score limit	Percentage of students able to perform tasks at this level or above	Characteristics of tasks
6	707.93	0.8% of students across the OECD and 1.8% in Canada	Students at **Level 6** of the PISA science assessment are able to successfully complete the most difficult PISA items. At Level 6, students can: ◆ draw on a range of interrelated scientific ideas and concepts from the physical, life, and earth and space sciences and link different information sources and representations and move flexibly among them ◆ use content, procedural, and epistemic knowledge in order to offer explanatory hypotheses of novel scientific phenomena, events, and processes or to make predictions ◆ discriminate between relevant and irrelevant information and draw on knowledge external to the normal school curriculum when interpreting data and evidence ◆ distinguish between arguments that are based on scientific evidence and theory and those based on other considerations ◆ evaluate competing designs of complex experiments, field studies, or simulations, and justify their choices
5	633.33	6.8% of students across the OECD and 11.3% in Canada	At **Level 5**, students can: ◆ use abstract scientific ideas or concepts to explain unfamiliar and more complex phenomena, events, and processes involving multiple causal links ◆ apply more sophisticated epistemic knowledge to evaluate alternative experimental designs and justify their choices, and use theoretical knowledge to interpret information or make predictions ◆ evaluate ways of exploring a given question scientifically and identify limitations in interpretations of data sets including sources and the effects of uncertainty in scientific data
4	558.73	24.9% of students across the OECD and 34.8% in Canada	At **Level 4**, students can: ◆ use more complex or more abstract content knowledge, which is either provided or recalled, to construct explanations of more complex or less familiar events and processes ◆ conduct experiments involving two or more independent variables in a constrained context ◆ justify an experimental design, drawing on elements of procedural and epistemic knowledge ◆ interpret data drawn from a moderately complex data set or less familiar context, draw appropriate conclusions that go beyond the data, and provide justifications for their choices
3	484.14	52.3% of students across the OECD and 64.2% in Canada	At **Level 3**, students can: ◆ draw upon moderately complex content knowledge to identify or construct explanations of familiar phenomena ◆ construct explanations with relevant cueing or support in less familiar or more complex situations ◆ draw on elements of procedural or epistemic knowledge to carry out a simple experiment in a constrained context ◆ distinguish between scientific and non-scientific issues and identify the evidence supporting a scientific claim
2	409.54	78.0% of students across the OECD and 86.6% in Canada	**Level 2** is considered the baseline level of science proficiency that is required to participate fully in modern society. At Level 2, students can: ◆ draw on everyday content knowledge and basic procedural knowledge to identify an appropriate scientific explanation, interpret data, and identify the question being addressed in a simple experimental design ◆ use basic or everyday scientific knowledge to identify a valid conclusion from a simple data set ◆ demonstrate basic epistemic knowledge by being able to identify questions that could be investigated scientifically
1a	334.94	94.1% of student across the OECD and 97.0% in Canada	At **Level 1a**, students can: ◆ use basic or everyday content and procedural knowledge to recognize or identify explanations of simple scientific phenomena ◆ undertake structured scientific enquiries with no more than two variables, with support ◆ identify simple causal or correlational relationships and interpret graphical and visual data that require a low level of cognitive demand ◆ select the best scientific explanation for given data in familiar personal, local, and global contexts
1b	260.54	99.3% of student across the OECD and 99.6% in Canada	At **Level 1b**, students can: ◆ use basic or everyday scientific knowledge to recognize aspects of familiar or simple phenomena ◆ identify simple patterns in data, recognize basic scientific terms, and follow explicit instructions to carry out a scientific procedure

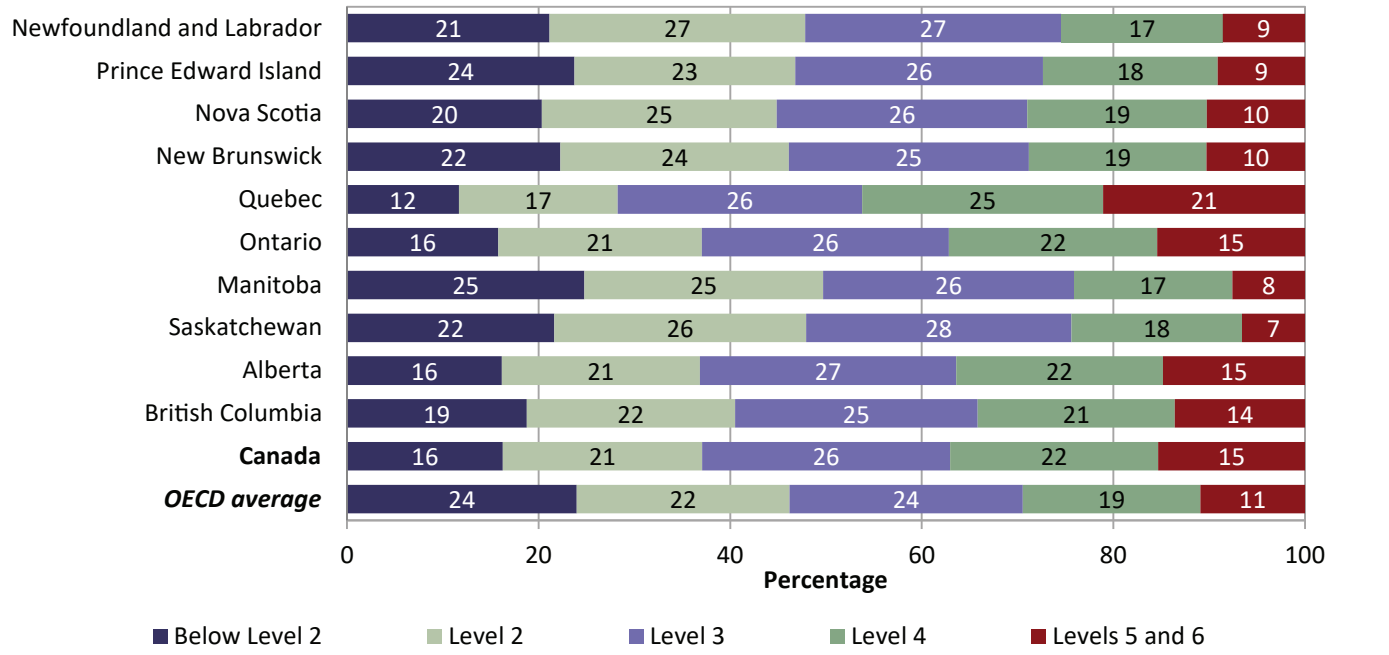
Adapted from OECD 2019a, p. 115.

In PISA 2018, 84 per cent of Canadian students and 76 per cent of students in the OECD countries performed at or above Level 2 in mathematics, which the OECD defines as the baseline level of mathematical proficiency that is required to participate fully in modern society (Appendix B.3.1b). Across the provinces, the percentage of Canadian students at or above the baseline level of proficiency ranges from 75 per cent in Manitoba to close to 90 per cent in Quebec (Figure 3.1). In contrast, 16 per cent of Canadian students did not reach the baseline level in mathematics, compared to an average of 24 per cent across the OECD countries. More than 60 countries had a higher proportion of low performers (below Level 2) in mathematics relative to Canada. Within Canada, there is a lot of variability among the provinces. Quebec (12 per cent) had the lowest proportion of low achievers in mathematics, and Manitoba (25 per cent) had the highest.

Students performing at Level 5 or above in mathematics are considered high-achieving students in this report. In Canada, 15 per cent of students performed at Level 5 or above, compared to an average of 11 per cent across the OECD countries (Figure 3.1). Although Canada had a higher proportion of students at Level 5 or above than most other countries participating in PISA 2018, eight countries (B-S-J-Z (China), Singapore, Hong Kong (China), Macao (China), Chinese Taipei, Korea, the Netherlands, and Japan) had a statistically higher proportion of high achievers than Canada; of these, Singapore and B-S-J-Z (China) had over 35 per cent of students performing at Level 5 or 6. Provincially, slightly more than 1 in 5 students in Quebec performed at this level. Conversely, Newfoundland and Labrador, Prince Edward Island, Manitoba, and Saskatchewan had fewer than 1 in 10 high-performing students (Appendix B.3.1b).

Figure 3.1

Percentage of students at each proficiency level in mathematics



Note: Percentages may not add up to 100 due to rounding.

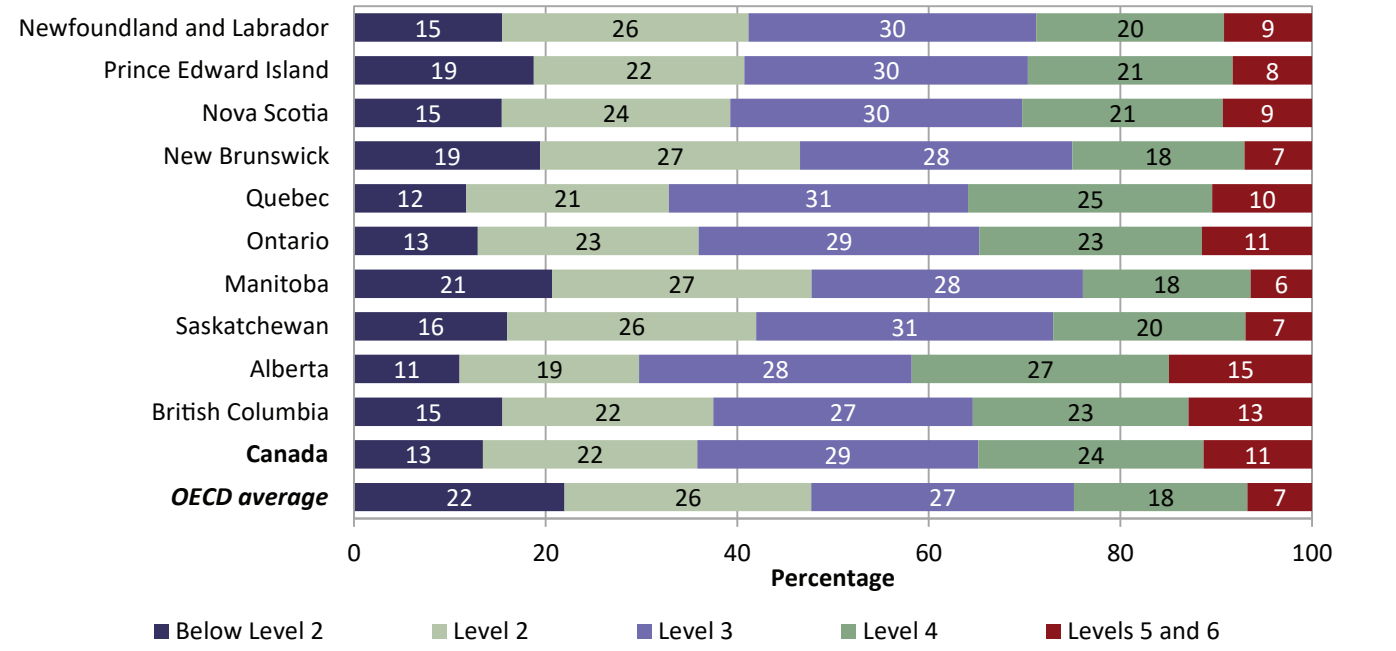
Students achieving below Level 1 may still be able to perform very direct and straightforward mathematical tasks, such as reading a single value from a well-labelled chart or table where the labels match the words in the question, or performing arithmetic calculations with whole numbers by following clear and well-defined instructions. Across the OECD countries, 9 per cent of participants did not achieve Level 1, while the proportion in Canada was 5 per cent. Provincially, the proportion of students that did not achieve Level 1 in mathematics varied between 4 per cent in Quebec and 8 per cent in Prince Edward Island, New Brunswick, and Manitoba (Appendix B.3.1a).

In science, 87 per cent of Canadian students and 78 per cent of students in the OECD countries performed at or above Level 2 on the PISA 2018 assessment (Appendix B.3.2b). Across the provinces, the percentage of Canadian students performing at or above this baseline level of proficiency ranges from 79 per cent in Manitoba to 89 per cent in Alberta (Figure 3.2). In Canada, 13 per cent of students did not reach the baseline level in science, compared to 22 per cent of students on average across the OECD countries. More than 60 countries had a higher proportion of low performers in science relative to Canada. Provincially, just over 1 in 5 students in Manitoba were low achievers in science, compared to around 1 in 10 students in Ontario, Quebec, and Alberta (Appendix B.3.2a).

At the higher end of the science achievement scale, 11 per cent of Canadian students performed at Level 5 or above, compared to an OECD average of 7 per cent (Figure 3.2). In fact, Canada is among the countries with the highest share of high-performing students in science, surpassed only by B-S-J-Z (China), Singapore, and Macao (China) (Appendix B.3.2b). Provincially, 10 per cent or more of students in Quebec, Ontario, Alberta, and British Columbia performed at Level 5 or above.

Figure 3.2

Percentage of students at each proficiency level in science



Note: Percentages may not add up to 100 due to rounding.

Across the OECD countries, 6 per cent of participants did not achieve Level 1 in science, while this proportion was 3 per cent in Canada. Provincially, 5 per cent of students in New Brunswick and Manitoba did not achieve Level 1, compared to 2 per cent of students in Quebec and Alberta (Appendix B.3.2a).

Results in mathematics and science by average score

One way to summarize student performance and compare the relative standing of countries is by examining average test scores by country. However, simply ranking countries based on their average scores can be misleading because there is a margin of uncertainty associated with each score. As discussed in Chapter 1, when interpreting average scores, only those differences between countries that are statistically significant should be considered (see the note on statistical comparisons in Box 1 in that chapter).

On average, Canadian 15-year-olds performed well in mathematics and science (Tables 3.3–3.5). Canadian students had an average score of 512 in mathematics and 518 in science, well above the OECD average of 489 in both domains (Appendices B.3.3 and B.3.4). Table 3.3 shows the countries that performed significantly better than or the same as Canada in mathematics and science. The average achievement scores of the students in all the remaining countries were significantly below those of Canada. Among the 79 countries that participated in PISA 2018, nine outperformed Canada in mathematics while five outperformed Canada in science.

Table 3.3

Comparison of participating countries' achievement scores to the Canadian average in mathematics and science

	Above* the Canadian average	At the Canadian average
Mathematics		
	B-S-J-Z (China), Singapore, Macao (China), Hong Kong (China), Chinese Taipei, Japan, Korea, Estonia, the Netherlands	Poland, Switzerland, Denmark, Slovenia, Belgium, Finland
Science		
	B-S-J-Z (China), Singapore, Macao (China), Estonia, Japan	Finland, Korea, Hong Kong (China), Chinese Taipei

* Denotes significant difference

Table 3.4

Achievement scores in mathematics

Country or province	Average score	95% confidence interval	Countries or provinces whose mean score is not significantly different from the comparison country or province	
B-S-J-Z (China)	591	586–596		Above the OECD average
Singapore	569	566–572		
Macao (China)	558	555–561	Hong Kong (China)	
Hong Kong (China)	551	545–557	Macao (China)	
Quebec	532	525–539	Chinese Taipei, Japan, Korea	
Chinese Taipei	531	525–537	Quebec, Japan, Korea	
Japan	527	522–532	Quebec, Chinese Taipei, Korea, Estonia	
Korea	526	520–532	Quebec, Chinese Taipei, Japan, Estonia, Netherlands	
Estonia	523	520–527	Japan, Korea, Netherlands	
Netherlands	519	514–524	Korea, Estonia, Poland, Switzerland, Ontario, Alberta	
Poland	516	511–521	Netherlands, Switzerland, Ontario, Canada, Alberta, British Columbia	
Switzerland	515	510–521	Netherlands, Poland, Ontario, Canada, Alberta, Denmark, British Columbia	
Ontario	513	504–521	Netherlands, Poland, Switzerland, Canada, Alberta, Denmark, Slovenia, Belgium, Finland, British Columbia	
CANADA	512	507–517	Poland, Switzerland, Ontario, Alberta, Denmark, Slovenia, Belgium, Finland, British Colombia	
Alberta	511	501–521	Netherlands, Poland, Switzerland, Ontario, Canada, Denmark, Slovenia, Belgium, Finland, British Columbia, Sweden, United Kingdom, Norway, Germany	
Denmark	509	506–513	Switzerland, Ontario, Canada, Alberta, Slovenia, Belgium, Finland, British Columbia	
Slovenia	509	506–512	Ontario, Canada, Alberta, Denmark, Belgium, Finland, British Columbia	
Belgium	508	504–513	Ontario, Canada, Alberta, Denmark, Slovenia, Finland, British Columbia, Sweden, United Kingdom, Prince Edward Island	
Finland	507	503–511	Ontario, Canada, Alberta, Denmark, Slovenia, Belgium, British Columbia, Sweden, United Kingdom, Nova Scotia, Prince Edward Island	
British Columbia	504	494–515	Poland, Switzerland, Ontario, Canada, Alberta, Denmark, Slovenia, Belgium, Finland, Sweden, United Kingdom, Norway, Germany, Ireland, Czech Republic, Austria, Latvia, France, Iceland, New Zealand, Nova Scotia, New Brunswick, Newfoundland and Labrador, Prince Edward Island	
Sweden	502	497–508	Alberta, Belgium, Finland, British Columbia, United Kingdom, Norway, Germany, Ireland, Czech Republic, Austria, Latvia, Nova Scotia, New Brunswick, Prince Edward Island	
United Kingdom	502	497–507	Alberta, Belgium, Finland, British Columbia, Sweden, Norway, Germany, Ireland, Czech Republic, Austria, Latvia, France, Nova Scotia, New Brunswick, Newfoundland and Labrador, Prince Edward Island	
Norway	501	497–505	Alberta, British Columbia, Sweden, United Kingdom, Germany, Ireland, Czech Republic, Austria, Latvia, France, Iceland, Nova Scotia, New Brunswick, Newfoundland and Labrador, Prince Edward Island	
Germany	500	495–505	Alberta, British Columbia, Sweden, United Kingdom, Norway, Ireland, Czech Republic, Austria, Latvia, France, Iceland, New Zealand, Nova Scotia, New Brunswick, Newfoundland and Labrador, Prince Edward Island	
Ireland	500	495–504	British Columbia, Sweden, United Kingdom, Norway, Germany, Czech Republic, Austria, Latvia, France, Iceland, New Zealand, Nova Scotia, New Brunswick, Newfoundland and Labrador, Prince Edward Island	
Czech Republic	499	495–504	British Columbia, Sweden, United Kingdom, Norway, Germany, Ireland, Austria, Latvia, France, Iceland, New Zealand, Nova Scotia, Portugal, New Brunswick, Newfoundland and Labrador, Prince Edward Island	
Austria	499	493–505	British Columbia, Sweden, United Kingdom, Norway, Germany, Ireland, Czech Republic, Latvia, France, Iceland, New Zealand, Nova Scotia, Portugal, New Brunswick, Newfoundland and Labrador, Prince Edward Island	
Latvia	496	492–500	British Columbia, Sweden, United Kingdom, Norway, Germany, Ireland, Czech Republic, Austria, France, Iceland, New Zealand, Nova Scotia, Portugal, Australia, New Brunswick, Newfoundland and Labrador, Prince Edward Island	
France	495	491–500	British Columbia, United Kingdom, Norway, Germany, Ireland, Czech Republic, Austria, Latvia, Iceland, New Zealand, Nova Scotia, Portugal, Australia, New Brunswick, Newfoundland and Labrador, Prince Edward Island, Saskatchewan	
Iceland	495	491–499	British Columbia, Norway, Germany, Ireland, Czech Republic, Austria, Latvia, France, New Zealand, Nova Scotia, Portugal, Australia, New Brunswick, Newfoundland and Labrador, Prince Edward Island, Saskatchewan	
New Zealand	494	491–498	British Columbia, Germany, Ireland, Czech Republic, Austria, Latvia, France, Iceland, Nova Scotia, Portugal, Australia, New Brunswick, Newfoundland and Labrador, Prince Edward Island, Saskatchewan	
Nova Scotia	494	482–507	Finland, British Columbia, Sweden, United Kingdom, Norway, Germany, Ireland, Czech Republic, Austria, Latvia, France, Iceland, New Zealand, Portugal, Australia, New Brunswick, Newfoundland and Labrador, Russian Federation, Italy, Prince Edward Island, Slovak Republic, Saskatchewan, Luxembourg, Manitoba	At the OECD average
Portugal	492	487–498	Czech Republic, Austria, Latvia, France, Iceland, New Zealand, Nova Scotia, Australia, New Brunswick, Newfoundland and Labrador, Russian Federation, Italy, Prince Edward Island, Slovak Republic, Saskatchewan	
Australia	491	488–495	Latvia, France, Iceland, New Zealand, Nova Scotia, Portugal, New Brunswick, Newfoundland and Labrador, Russian Federation, Italy, Prince Edward Island, Slovak Republic, Saskatchewan	
New Brunswick	491	480–502	British Columbia, Sweden, United Kingdom, Norway, Germany, Ireland, Czech Republic, Austria, Latvia, France, Iceland, New Zealand, Nova Scotia, Portugal, Australia, Newfoundland and Labrador, Russian Federation, Italy, Prince Edward Island, Slovak Republic, Saskatchewan, Luxembourg, Manitoba, Spain, Lithuania, Hungary, United States	
Newfoundland and Labrador	488	476–501	British Columbia, United Kingdom, Norway, Germany, Ireland, Czech Republic, Austria, Latvia, France, Iceland, New Zealand, Nova Scotia, Portugal, Australia, New Brunswick, Russian Federation, Italy, Prince Edward Island, Slovak Republic, Saskatchewan, Luxembourg, Manitoba, Spain, Lithuania, Hungary, United States	
Russian Federation	488	482–494	Nova Scotia, Portugal, Australia, New Brunswick, Newfoundland and Labrador, Italy, Prince Edward Island, Slovak Republic, Saskatchewan, Luxembourg, Manitoba, Spain, Lithuania, Hungary	
Italy	487	481–492	Nova Scotia, Portugal, Australia, New Brunswick, Newfoundland and Labrador, Russian Federation, Prince Edward Island, Slovak Republic, Saskatchewan, Luxembourg, Manitoba, Spain, Lithuania, Hungary, United States	

Country or province	Average score	95% confidence interval	Countries or provinces whose mean score is not significantly different from the comparison country or province
Prince Edward Island	487	465–508	Belgium, Finland, British Columbia, Sweden, United Kingdom, Norway, Germany, Ireland, Czech Republic, Austria, Latvia, France, Iceland, New Zealand, Nova Scotia, Portugal, Australia, New Brunswick, Newfoundland and Labrador, Russian Federation, Italy, Slovak Republic, Saskatchewan, Luxembourg, Manitoba, Spain, Lithuania, Hungary, United States, Belarus, Malta
Slovak Republic	486	481–491	Nova Scotia, Portugal, Australia, New Brunswick, Newfoundland and Labrador, Russian Federation, Italy, Prince Edward Island, Saskatchewan, Luxembourg, Manitoba, Spain, Lithuania, Hungary, United States
Saskatchewan	485	475–495	France, Iceland, New Zealand, Nova Scotia, Portugal, Australia, New Brunswick, Newfoundland and Labrador, Russian Federation, Italy, Prince Edward Island, Slovak Republic, Luxembourg, Manitoba, Spain, Lithuania, Hungary, United States
Luxembourg	483	481–486	Nova Scotia, New Brunswick, Newfoundland and Labrador, Russian Federation, Italy, Prince Edward Island, Slovak Republic, Saskatchewan, Manitoba, Spain, Lithuania, Hungary, United States
Manitoba	482	474–489	Nova Scotia, New Brunswick, Newfoundland and Labrador, Russian Federation, Italy, Prince Edward Island, Slovak Republic, Saskatchewan, Luxembourg, Spain, Lithuania, Hungary, United States
Spain	481	479–484	New Brunswick, Newfoundland and Labrador, Russian Federation, Italy, Prince Edward Island, Slovak Republic, Saskatchewan, Luxembourg, Manitoba, Lithuania, Hungary, United States
Lithuania	481	477–485	New Brunswick, Newfoundland and Labrador, Russian Federation, Italy, Prince Edward Island, Slovak Republic, Saskatchewan, Luxembourg, Manitoba, Spain, Hungary, United States
Hungary	481	477–486	New Brunswick, Newfoundland and Labrador, Russian Federation, Italy, Prince Edward Island, Slovak Republic, Saskatchewan, Luxembourg, Manitoba, Spain, Lithuania, United States
United States	478	472–485	New Brunswick, Newfoundland and Labrador, Italy, Prince Edward Island, Slovak Republic, Saskatchewan, Luxembourg, Manitoba, Spain, Lithuania, Hungary, Belarus, Malta
Belarus	472	467–477	Prince Edward Island, United States, Malta
Malta	472	468–475	Prince Edward Island, United States, Belarus
Croatia	464	459–469	Israel
Israel	463	456–470	Croatia
Turkey	454	449–458	Ukraine, Greece, Cyprus, Serbia
Ukraine	453	446–460	Turkey, Greece, Cyprus, Serbia
Greece	451	445–457	Turkey, Ukraine, Cyprus, Serbia
Cyprus[a]	451	448–453	Turkey, Ukraine, Greece, Serbia
Serbia	448	442–454	Turkey, Ukraine, Greece, Cyprus, Malaysia
Malaysia	440	435–446	Serbia, Albania, Bulgaria, United Arab Emirates, Romania
Albania	437	432–442	Malaysia, Bulgaria, United Arab Emirates, Romania
Bulgaria	436	429–444	Malaysia, Albania, United Arab Emirates, Brunei Darussalam, Romania, Montenegro
United Arab Emirates	435	431–439	Malaysia, Albania, Bulgaria, Romania
Brunei Darussalam	430	428–432	Bulgaria, Romania, Montenegro
Romania	430	420–440	Malaysia, Albania, Bulgaria, United Arab Emirates, Brunei Darussalam, Montenegro, Kazakhstan, Moldova, Baku (Azerbaijan), Thailand
Montenegro	430	427–432	Bulgaria, Brunei Darussalam, Romania
Kazakhstan	423	419–427	Romania, Moldova, Baku (Azerbaijan), Thailand, Uruguay, Chile
Moldova	421	416–425	Romania, Kazakhstan, Baku (Azerbaijan), Thailand, Uruguay, Chile
Baku (Azerbaijan)	420	414–425	Romania, Kazakhstan, Moldova, Thailand, Uruguay, Chile, Qatar
Thailand	419	412–425	Romania, Kazakhstan, Moldova, Baku (Azerbaijan), Uruguay, Chile, Qatar
Uruguay	418	413–423	Kazakhstan, Moldova, Baku (Azerbaijan), Thailand, Chile, Qatar
Chile	417	413–422	Kazakhstan, Moldova, Baku (Azerbaijan), Thailand, Uruguay, Qatar
Qatar	414	412–417	Baku (Azerbaijan), Thailand, Uruguay, Chile, Mexico
Mexico	409	404–414	Qatar, Bosnia and Herzegovina, Costa Rica
Bosnia and Herzegovina	406	400–412	Mexico, Costa Rica, Peru, Jordan
Costa Rica	402	396–409	Mexico, Bosnia and Herzegovina, Peru, Jordan, Georgia, Lebanon
Peru	400	395–405	Bosnia and Herzegovina, Costa Rica, Jordan, Georgia, Republic of North Macedonia, Lebanon
Jordan	400	393–406	Bosnia and Herzegovina, Costa Rica, Peru, Georgia, Republic of North Macedonia, Lebanon
Georgia	398	392–403	Costa Rica, Peru, Jordan, Republic of North Macedonia, Lebanon, Colombia
Republic of North Macedonia	394	391–398	Peru, Jordan, Georgia, Lebanon, Colombia
Lebanon	393	386–401	Costa Rica, Peru, Jordan, Georgia, Republic of North Macedonia, Colombia
Colombia	391	385–397	Georgia, Republic of North Macedonia, Lebanon
Brazil	384	380–388	Argentina, Indonesia
Argentina	379	374–385	Brazil, Indonesia, Saudi Arabia
Indonesia	379	373–385	Brazil, Argentina, Saudi Arabia
Saudi Arabia	373	367–379	Argentina, Indonesia, Morocco
Morocco	368	361–374	Saudi Arabia, Kosovo
Kosovo	366	363–369	Morocco
Panama	353	348–358	Philippines
Philippines	353	346–359	Panama
Dominican Republic	325	320–330	

Below the OECD average

Note: OECD countries appear in italics. The OECD average was 489, with a standard error of 0.4.

[a] See OECD (2019b), p. 21, for a note regarding Cyprus.

Above the Canadian average
At the Canadian average
Below the Canadian average

Above the OECD average
At the OECD average
Below the OECD average

Table 3.5

Achievement scores in science

Country or province	Average score	95% confidence interval	Countries or provinces whose mean score is not significantly different from the comparison country or province
B-S-J-Z (China)	590	585–596	
Singapore	551	548–554	
Macao (China)	544	541–546	
Alberta	534	525–542	Estonia, Japan
Estonia	530	526–534	Alberta, Japan
Japan	529	524–534	Alberta, Estonia, Quebec
Finland	522	517–527	Quebec, Korea, Ontario, Canada, Hong Kong (China), British Columbia, Chinese Taipei
Quebec	522	514–529	Japan, Finland, Korea, Ontario, Canada, Hong Kong (China), British Columbia, Chinese Taipei
Korea	519	514–525	Finland, Quebec, Ontario, Canada, Hong Kong (China), British Columbia, Chinese Taipei, Newfoundland and Labrador, Prince Edward Island
Ontario	519	511–526	Finland, Quebec, Korea, Canada, Hong Kong (China), British Columbia, Chinese Taipei, Poland, Nova Scotia, Newfoundland and Labrador, Prince Edward Island
CANADA	518	514–522	Finland, Quebec, Korea, Ontario, Hong Kong (China), British Columbia, Chinese Taipei, Nova Scotia, Newfoundland and Labrador, Prince Edward Island
Hong Kong (China)	517	512–522	Finland, Quebec, Korea, Ontario, Canada, British Columbia, Chinese Taipei, Poland, Nova Scotia, Newfoundland and Labrador, Prince Edward Island
British Columbia	517	506–527	Finland, Quebec, Korea, Ontario, Canada, Hong Kong (China), Chinese Taipei, Poland, New Zealand, Nova Scotia, Slovenia, Newfoundland and Labrador, Prince Edward Island
Chinese Taipei	516	510–521	Finland, Quebec, Korea, Ontario, Canada, Hong Kong (China), British Columbia, Poland, Nova Scotia, Newfoundland and Labrador, Prince Edward Island
Poland	511	506–516	Ontario, Hong Kong (China), British Columbia, Chinese Taipei, New Zealand, Nova Scotia, Slovenia, Newfoundland and Labrador, United Kingdom, Prince Edward Island
New Zealand	508	504–513	British Columbia, Poland, Nova Scotia, Slovenia, Newfoundland and Labrador, United Kingdom, Netherlands, Germany, United States, Prince Edward Island, Saskatchewan
Nova Scotia	508	499–517	Ontario, Canada, Hong Kong (China), British Columbia, Chinese Taipei, Poland, New Zealand, Slovenia, Newfoundland and Labrador, United Kingdom, Netherlands, Germany, Australia, United States, Prince Edward Island, Saskatchewan, Sweden, Belgium
Slovenia	507	505–509	British Columbia, Poland, New Zealand, Nova Scotia, Newfoundland and Labrador, United Kingdom, Netherlands, Germany, Australia, United States, Prince Edward Island, Saskatchewan
Newfoundland and Labrador	506	494–519	Korea, Ontario, Canada, Hong Kong (China), British Columbia, Chinese Taipei, Poland, New Zealand, Nova Scotia, Slovenia, United Kingdom, Netherlands, Germany, Australia, United States, Prince Edward Island, Saskatchewan, Sweden, Belgium, Czech Republic, Ireland, Switzerland, France, New Brunswick
United Kingdom	505	500–510	Poland, New Zealand, Nova Scotia, Slovenia, Newfoundland and Labrador, Netherlands, Germany, Australia, United States, Prince Edward Island, Saskatchewan, Sweden, Belgium
Netherlands	503	498–509	New Zealand, Nova Scotia, Slovenia, Newfoundland and Labrador, United Kingdom, Germany, Australia, United States, Prince Edward Island, Saskatchewan, Sweden, Belgium, Czech Republic, New Brunswick
Germany	503	497–509	New Zealand, Nova Scotia, Slovenia, Newfoundland and Labrador, United Kingdom, Netherlands, Australia, United States, Prince Edward Island, Saskatchewan, Sweden, Belgium, Czech Republic, Ireland, Switzerland, New Brunswick
Australia	503	499–506	Nova Scotia, Slovenia, Newfoundland and Labrador, United Kingdom, Netherlands, Germany, United States, Prince Edward Island, Saskatchewan, Sweden, Belgium, New Brunswick
United States	502	496–509	New Zealand, Nova Scotia, Slovenia, Newfoundland and Labrador, United Kingdom, Netherlands, Germany, Australia, Prince Edward Island, Saskatchewan, Sweden, Belgium, Czech Republic, Ireland, Switzerland, New Brunswick
Prince Edward Island	502	484–519	Korea, Ontario, Canada, Hong Kong (China), British Columbia, Chinese Taipei, Poland, New Zealand, Nova Scotia, Slovenia, Newfoundland and Labrador, United Kingdom, Netherlands, Germany, Australia, United States, Saskatchewan, Sweden, Belgium, Czech Republic, Ireland, Switzerland, France, Denmark, New Brunswick, Portugal, Norway, Austria, Manitoba, Latvia
Saskatchewan	501	493–508	New Zealand, Nova Scotia, Slovenia, Newfoundland and Labrador, United Kingdom, Netherlands, Germany, Australia, United States, Prince Edward Island, Sweden, Belgium, Czech Republic, Ireland, Switzerland, France, Denmark, New Brunswick, Portugal
Sweden	499	493–505	Nova Scotia, Newfoundland and Labrador, United Kingdom, Netherlands, Germany, Australia, United States, Prince Edward Island, Saskatchewan, Belgium, Czech Republic, Ireland, Switzerland, France, Denmark, New Brunswick, Portugal
Belgium	499	494–503	Nova Scotia, Newfoundland and Labrador, United Kingdom, Netherlands, Germany, Australia, United States, Prince Edward Island, Saskatchewan, Sweden, Czech Republic, Ireland, Switzerland, France, New Brunswick
Czech Republic	497	492–502	Newfoundland and Labrador, Netherlands, Germany, United States, Prince Edward Island, Saskatchewan, Sweden, Belgium, Ireland, Switzerland, France, Denmark, New Brunswick, Portugal, Norway, Austria, Manitoba
Ireland	496	492–500	Newfoundland and Labrador, Germany, United States, Prince Edward Island, Saskatchewan, Sweden, Belgium, Czech Republic, Switzerland, France, Denmark, New Brunswick, Portugal, Norway, Austria, Manitoba
Switzerland	495	489–501	Newfoundland and Labrador, Germany, United States, Prince Edward Island, Saskatchewan, Sweden, Belgium, Czech Republic, Ireland, France, Denmark, New Brunswick, Portugal, Norway, Austria, Manitoba
France	493	489–497	Newfoundland and Labrador, Prince Edward Island, Saskatchewan, Sweden, Belgium, Czech Republic, Ireland, Switzerland, Denmark, New Brunswick, Portugal, Norway, Austria, Manitoba
Denmark	493	489–496	Prince Edward Island, Saskatchewan, Sweden, Czech Republic, Ireland, Switzerland, France, New Brunswick, Portugal, Norway, Austria, Manitoba
New Brunswick	492	481–504	Newfoundland and Labrador, Netherlands, Germany, Australia, United States, Prince Edward Island, Saskatchewan, Sweden, Belgium, Czech Republic, Ireland, Switzerland, France, Denmark, Portugal, Norway, Austria, Manitoba, Latvia, Spain, Lithuania, Hungary

Above the OECD average

Country or province	Average score	95% confidence interval	Countries or provinces whose mean score is not significantly different from the comparison country or province	
Portugal	492	486–497	Prince Edward Island, Saskatchewan, Sweden, Czech Republic, Ireland, Switzerland, France, Denmark, New Brunswick, Norway, Austria, Manitoba, Latvia	At the OECD average
Norway	490	486–495	Prince Edward Island, Czech Republic, Ireland, Switzerland, France, Denmark, New Brunswick, Portugal, Austria, Manitoba, Latvia	
Austria	490	484–495	Prince Edward Island, Czech Republic, Ireland, Switzerland, France, Denmark, New Brunswick, Portugal, Norway, Manitoba, Latvia	
Manitoba	489	482–497	Prince Edward Island, Czech Republic, Ireland, Switzerland, France, Denmark, New Brunswick, Portugal, Norway, Austria, Manitoba, Latvia, Spain, Lithuania, Hungary	
Latvia	487	484–491	Prince Edward Island, New Brunswick, Portugal, Norway, Austria, Manitoba, Spain	
Spain	483	480–486	New Brunswick, Manitoba, Latvia, Lithuania, Hungary, Russian Federation	At the OECD average
Lithuania	482	479–485	New Brunswick, Manitoba, Spain, Hungary, Russian Federation	
Hungary	481	476–485	New Brunswick, Manitoba, Spain, Lithuania, Russian Federation, Luxembourg	
Russian Federation	478	472–483	Spain, Lithuania, Hungary, Luxembourg, Iceland, Croatia, Belarus	
Luxembourg	477	474–479	Hungary, Russian Federation, Iceland, Croatia	
Iceland	475	472–479	Russian Federation, Luxembourg, Croatia, Belarus, Ukraine	
Croatia	472	467–478	Russian Federation, Luxembourg, Iceland, Belarus, Ukraine, Turkey, Italy	
Belarus	471	466–476	Russian Federation, Iceland, Croatia, Ukraine, Turkey, Italy	
Ukraine	469	463–475	Iceland, Croatia, Belarus, Turkey, Italy, Slovak Republic, Israel	
Turkey	468	464–472	Croatia, Belarus, Ukraine, Italy, Slovak Republic, Israel	
Italy	468	463–473	Croatia, Belarus, Ukraine, Turkey, Slovak Republic, Israel	
Slovak Republic	464	460–469	Ukraine, Turkey, Italy, Israel	
Israel	462	455–469	Ukraine, Turkey, Italy, Slovak Republic, Malta	
Malta	457	453–460	Israel, Greece	
Greece	452	445–458	Malta	
Chile	444	439–448	Serbia, Cyprus, Malaysia	
Serbia	440	434–446	Chile, Cyprus, Malaysia, United Arab Emirates	
Cyprus[a]	439	436–442	Chile, Serbia, Malaysia	
Malaysia	438	432–443	Chile, Serbia, Cyprus, United Arab Emirates	
United Arab Emirates	434	430–438	Serbia, Malaysia, Brunei Darussalam, Jordan, Moldova, Romania	
Brunei Darussalam	431	429–433	United Arab Emirates, Jordan, Moldova, Thailand, Uruguay, Romania, Bulgaria	
Jordan	429	424–435	United Arab Emirates, Brunei Darussalam, Moldova, Thailand, Uruguay, Romania, Bulgaria	
Moldova	428	424–433	United Arab Emirates, Brunei Darussalam, Jordan, Thailand, Uruguay, Romania, Bulgaria	
Thailand	426	420–432	Brunei Darussalam, Jordan, Moldova, Uruguay, Romania, Bulgaria, Mexico	
Uruguay	426	421–431	Brunei Darussalam, Jordan, Moldova, Thailand, Romania, Bulgaria, Mexico	
Romania	426	417–435	United Arab Emirates, Brunei Darussalam, Jordan, Moldova, Thailand, Uruguay, Bulgaria, Mexico, Qatar, Albania, Costa Rica	
Bulgaria	424	417–431	Brunei Darussalam, Jordan, Moldova, Thailand, Uruguay, Romania, Mexico, Qatar, Albania, Costa Rica	
Mexico	419	414–424	Thailand, Uruguay, Romania, Bulgaria, Qatar, Albania, Costa Rica, Montenegro, Colombia	
Qatar	419	417–421	Romania, Bulgaria, Mexico, Albania, Costa Rica, Colombia	
Albania	417	413–421	Romania, Bulgaria, Mexico, Qatar, Costa Rica, Montenegro, Colombia, Republic of North Macedonia	
Costa Rica	416	409–422	Romania, Bulgaria, Mexico, Qatar, Albania, Montenegro, Colombia, Republic of North Macedonia	
Montenegro	415	413–418	Mexico, Albania, Costa Rica, Colombia, Republic of North Macedonia	
Colombia	413	407–419	Mexico, Qatar, Albania, Costa Rica, Montenegro, Republic of North Macedonia	
Republic of North Macedonia	413	410–416	Albania, Costa Rica, Montenegro, Colombia	
Peru	404	399–409	Argentina, Brazil, Bosnia and Herzegovina, Baku (Azerbaijan)	
Argentina	404	398–410	Peru, Brazil, Bosnia and Herzegovina, Baku (Azerbaijan)	
Brazil	404	400–408	Peru, Argentina, Bosnia and Herzegovina, Baku (Azerbaijan)	
Bosnia and Herzegovina	398	393–404	Peru, Argentina, Brazil, Baku (Azerbaijan), Kazakhstan, Indonesia	
Baku (Azerbaijan)	398	393–402	Peru, Argentina, Brazil, Bosnia and Herzegovina, Kazakhstan, Indonesia	
Kazakhstan	397	394–400	Bosnia and Herzegovina, Baku (Azerbaijan), Indonesia	
Indonesia	396	391–401	Bosnia and Herzegovina, Baku (Azerbaijan), Kazakhstan	
Saudi Arabia	386	381–392	Lebanon, Georgia	
Lebanon	384	377–391	Saudi Arabia, Georgia, Morocco	
Georgia	383	378–387	Saudi Arabia, Lebanon, Morocco	
Morocco	377	371–382	Lebanon, Georgia	
Kosovo	365	363–367	Panama	
Panama	365	359–370	Kosovo, Philippines	
Philippines	357	320–330	Panama	
Dominican Republic	336	320–330		

Note: OECD countries appear in italics. The OECD average was 489, with a standard error of 0.4.
[a] See OECD (2019b), p. 21, for a note regarding Cyprus.

Above the Canadian average
At the Canadian average
Below the Canadian average

Above the OECD average
At the OECD average
Below the OECD average

In mathematics, students in Manitoba performed below the OECD average, while students in all other provinces performed at or above the OECD average. In science, students in all provinces had achievement scores at or above the OECD average.

Within Canada, students in Quebec performed above the Canadian average in mathematics and at the Canadian average in science, as shown in Table 3.6. Students in Alberta performed above the Canadian average in science and at the Canadian average in mathematics. Students in Newfoundland and Labrador, Prince Edward Island, and Nova Scotia performed below the Canadian average in mathematics and at the Canadian average in science. Students in New Brunswick, Manitoba, and Saskatchewan performed below the Canadian average in both minor domains.

Table 3.6

Comparison of provincial achievement scores to the Canadian average in mathematics and science

	Above* the Canadian average	At the Canadian average	Below* the Canadian average
Mathematics			
	Quebec	Ontario, Alberta, British Columbia	Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick, Manitoba, Saskatchewan
Science			
	Alberta	Newfoundland and Labrador, Prince Edward Island, Nova Scotia, Quebec, Ontario, British Columbia	New Brunswick, Manitoba, Saskatchewan

* Denotes significant difference

While average performance is useful in assessing the overall performance of students, it can mask significant variation within participating countries and provinces. The gap that exists between students with the highest and those with the lowest levels of performance is an important indicator of the equity of educational outcomes. Further information on the performance within countries and provinces can be obtained by examining the relative distribution of scores.

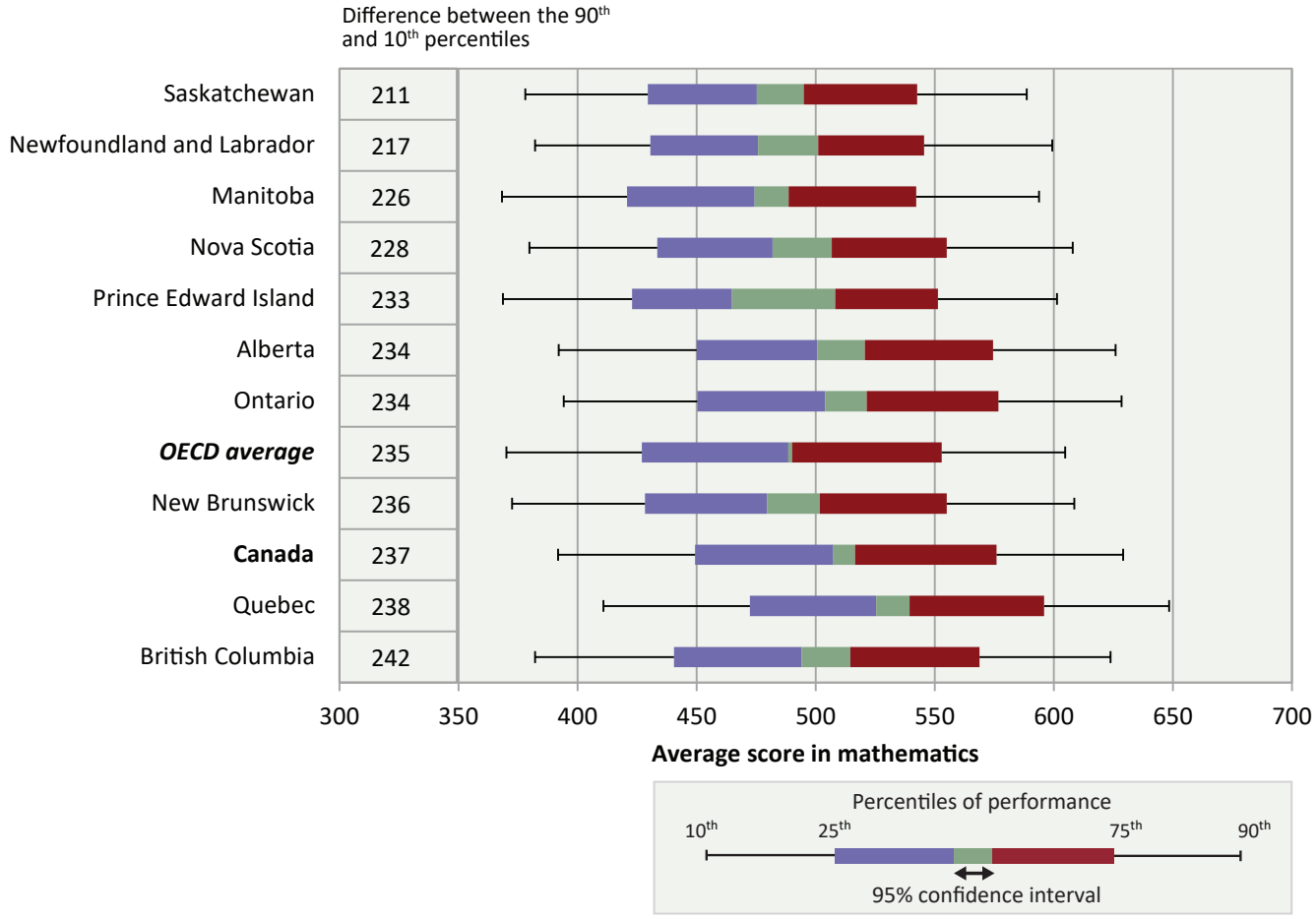
For Canada overall, those in the highest decile (90th percentile) scored 237 points higher in mathematics and 247 points higher in science than those in the lowest decile (10th percentile) (Appendices B.3.5 and B.3.6). This gap is similar to the 235-point difference in mathematics and 244-point difference in science on average across all OECD countries. However, the average scores of Canadian students in the lowest decile in mathematics (392 points) and science (393 points) were higher than those of students in the lowest decile across the OECD countries (370 points and 365 points, respectively). In fact, the slightly higher disparities observed in Canada may be a reflection of the students in the highest decile in Canada scoring higher than students in the highest decile on average across the OECD countries (629 points compared to 605 points in mathematics, and 640 points compared to 609 points in science).

Figures 3.3 and 3.4 show the difference in average scores between the lowest and highest deciles in Canada, the provinces, and the OECD. For mathematics, differences range from 211 in Saskatchewan to 242 in British Columbia; for science, differences range from 234 in Quebec to 263 in British Columbia. In most provinces, with the exception of New Brunswick, Quebec, and British Columbia, the difference in performance between high achievers and low achievers in mathematics was smaller than or equal to the OECD average. In science, the difference in performance between high achievers and low achievers was smaller than the OECD average in Newfoundland and Labrador, Quebec, and Saskatchewan. It is worth noting that, although high-achieving countries tend to have a larger gap, high achievement does not necessarily come at the cost of equity. Notably,

B-S-J-Z (China) achieved the highest average mathematics and science scores across all participating countries (591 and 590, respectively) while at the same time having a relatively small difference in the score gap between the lowest and highest achievers (205 and 213, respectively) (Appendices B.3.5 and B.3.6).

Figure 3.3

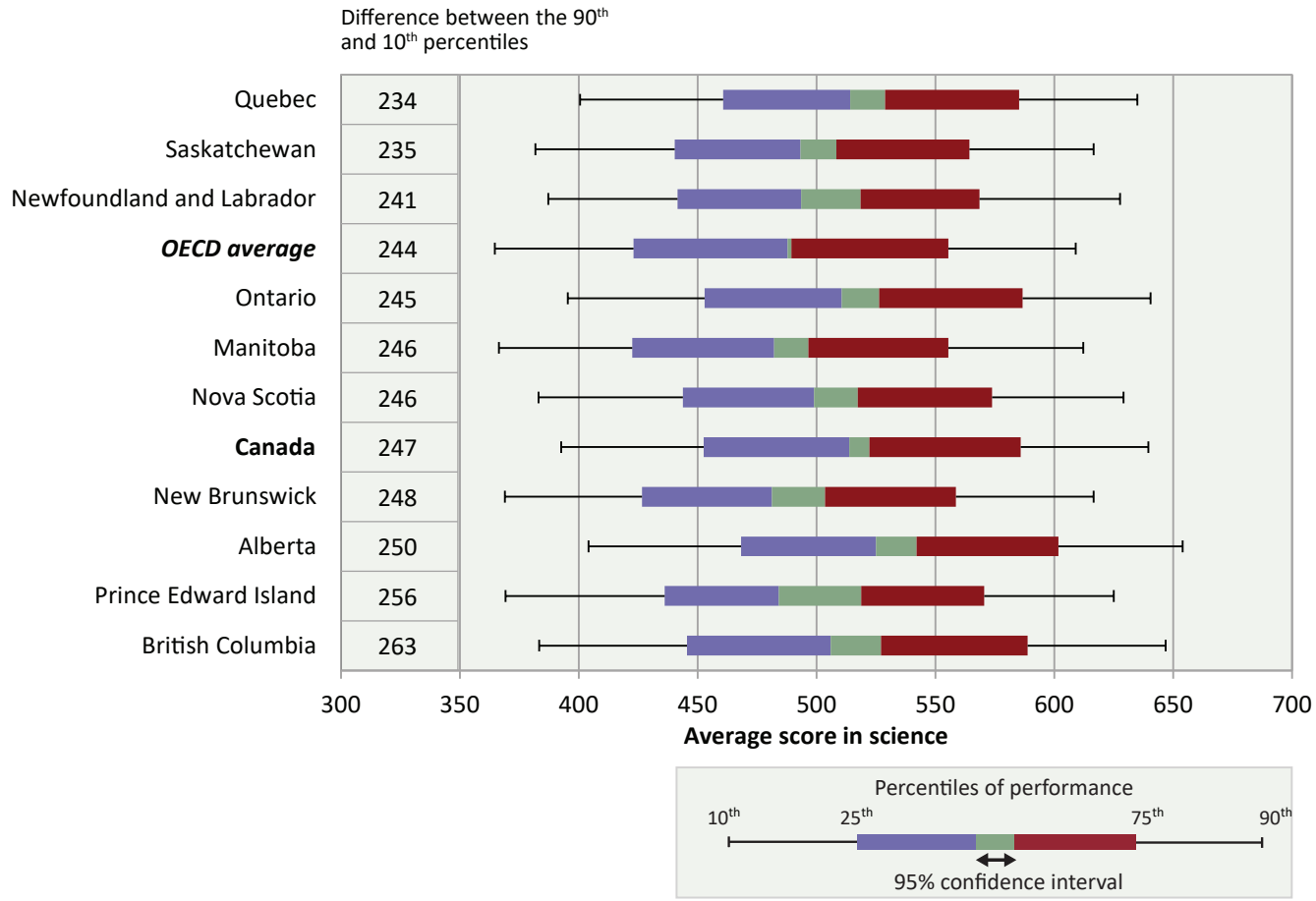
Difference between high and low achievers in mathematics



Note: Results are ordered from the smallest to the largest difference between the 90th and 10th percentiles.

Figure 3.4

Difference between high and low achievers in science



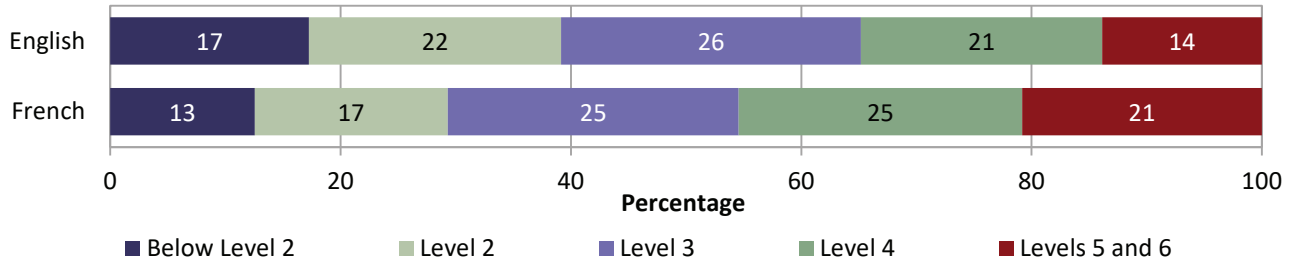
Note: Results are ordered from the smallest to the largest difference between the 90th and 10th percentiles.

Achievement in mathematics and science by language of the school system

In Canada, in PISA 2018, oversampling allowed separate reporting of results by language of the school system for seven provinces (see the Introduction). In mathematics, on average across these provinces, a higher proportion of students in francophone than in anglophone school systems reached Level 2 or higher (Figure 3.5, Appendices B.3.7a–b). As well, a higher proportion of students in francophone school systems were high achievers in mathematics (Levels 5 and 6) relative to their peers in anglophone school systems, in large part due to the results in Quebec. Specifically, 22 per cent of students in the francophone school system in Quebec performed at this high level of proficiency, compared to 13 per cent in the anglophone school system (Appendix B.3.7b).

Figure 3.5

Percentage of students at each proficiency level in mathematics in Canada, by language of the school system



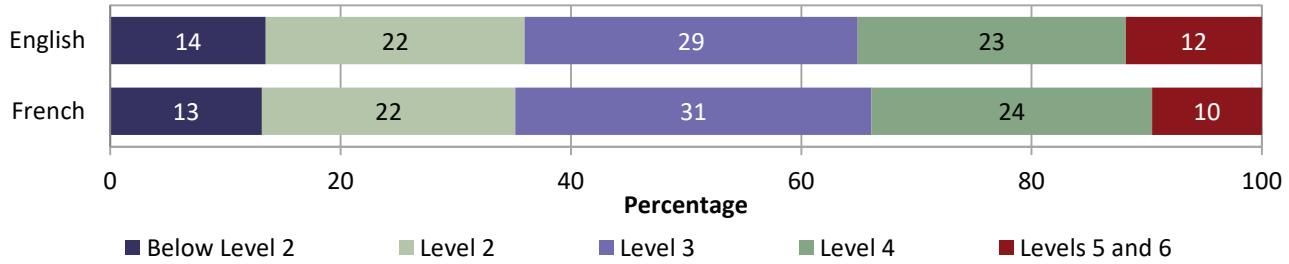
Note: Percentages may not add up to 100 due to rounding.

Provincially, the proportion of students performing at or above Level 2 in mathematics in English-language school systems ranged from 75 per cent in New Brunswick and Manitoba to 87 per cent in Quebec. In French-language school systems, this proportion ranged from 78 per cent in British Columbia to 88 per cent in Quebec (Appendix B.3.7b). None of the provinces showed a statistically significant difference between the two language systems in the proportion of students performing at or above the baseline level of mathematics proficiency.

With respect to science, on average across Canada, no statistically significant difference between the two language systems was observed in the proportion of students reaching Level 2 or higher (Figure 3.6), although a higher proportion of students in English-language school systems than in French-language school systems performed at the highest levels of proficiency (Levels 5 and 6) (Appendix B.3.8b).

Figure 3.6

Percentage of students at each proficiency level in science in Canada, by language of the school system



Note: Percentages may not add up to 100 due to rounding.

Provincially, the proportion of students performing at or above Level 2 in science in English-language school systems varied from 79 per cent in Manitoba to 89 per cent in Quebec and Alberta (Appendix B.3.8b). In francophone school systems, the proportion ranged from 71 per cent in Nova Scotia to 88 per cent in Quebec. The proportion of students performing at or above the baseline level of science proficiency was similar across the two school systems in most provinces, with the exception of Nova Scotia and Ontario. In those two provinces, a higher proportion of students in English-language systems reached this level compared to students in French-language school systems. As well, in Ontario, a higher proportion of students in English-language school systems were high achievers in science, compared to their peers in French-language school systems, with no significant differences observed in the remaining provinces.

Figure 3.7 and Table 3.7 summarize and compare achievement scores in mathematics and science by the language of the school system for Canada and the provinces. The relative performance of students in the two systems varied across provinces and by domain. Students in English-language school systems in Newfoundland and Labrador, Nova Scotia, New Brunswick, Manitoba, and Saskatchewan had lower mathematics scores than

students on average in the English-language school systems across Canada, while those in Ontario had higher scores. Students in French-language school systems in New Brunswick, Ontario, and British Columbia scored below the average of students in French-language school systems across Canada in mathematics, while in Quebec they scored above this average (Appendix B.3.9). In science, students in English-language school systems in Alberta outperformed students in the English-language school systems on average across Canada, while those in New Brunswick, Manitoba, and Saskatchewan underperformed the anglophone Canadian average. Students in French-language school systems in Nova Scotia, New Brunswick, Ontario, and Manitoba scored below the average of French-language school systems across Canada in science, while students in Quebec scored above it (Appendix B.3.10).

Differences in mathematics performance between the two language systems were observed on average across Canada: students in francophone school systems outperformed those in anglophone school systems in mathematics by 23 points (Figure 3.7). At the provincial level, students in the francophone school system in Quebec outperformed their peers in the anglophone school system by 21 points; in the remaining provinces, there was no statistically significant difference in mathematics performance between the two language systems (Appendix B.3.9). In science, the difference in performance between students in anglophone school systems and those in francophone school systems was not statistically significant in Canada overall. Provincially, students in anglophone school systems in Nova Scotia, Ontario, and Alberta performed better in science than their counterparts in francophone school systems in those provinces; no significant difference in performance between the two language systems was observed in the remaining provinces (Table 3.7, Appendix B.3.10).

Figure 3.7

Canadian achievement scores in mathematics and science, by language of the school system

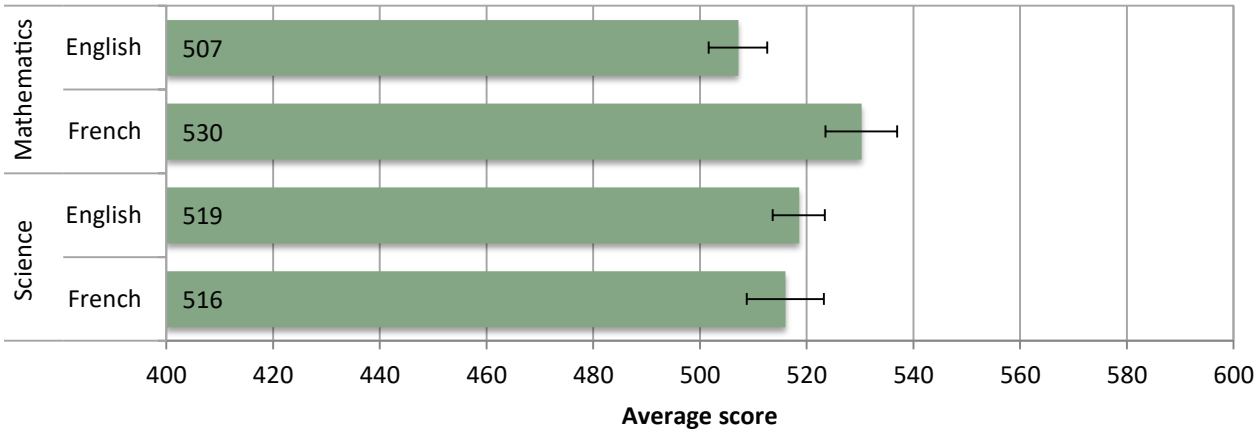


Table 3.7

Summary and comparison of achievement scores in mathematics and science for Canada and the provinces, by language of the school system

Mathematics			
	Anglophone schools performed significantly better than francophone schools	**Francophone schools performed significantly better than anglophone schools**	**No significant differences between school systems**
		Canada, Quebec	Nova Scotia, New Brunswick, Ontario, Manitoba, Alberta, British Columbia
	Anglophone school systems		
	Above* the Canadian English average	**At the Canadian English average**	**Below* the Canadian English average**
	Ontario	Prince Edward Island, Quebec, Alberta, British Columbia	Newfoundland and Labrador, Nova Scotia, New Brunswick, Manitoba, Saskatchewan
	Francophone school systems		
	Above* the Canadian French average	**At the Canadian French average**	**Below* the Canadian French average**
	Quebec	Nova Scotia, Manitoba, Alberta	New Brunswick, Ontario, British Columbia
Science			
	Anglophone schools performed significantly better than francophone schools	**Francophone schools performed significantly better than anglophone schools**	**No significant differences between school systems**
	Nova Scotia, Ontario, Alberta		Canada, New Brunswick, Quebec, Manitoba, British Columbia
	Anglophone school systems		
	Above* the Canadian English average	**At the Canadian English average**	**Below* the Canadian English average**
	Alberta	Newfoundland and Labrador, Prince Edward Island, Nova Scotia, Quebec, Ontario, British Columbia	New Brunswick, Manitoba, Saskatchewan
	Francophone school systems		
	Above* the Canadian French average	**At the Canadian French average**	**Below* the Canadian French average**
	Quebec	Alberta, British Columbia	Nova Scotia, New Brunswick, Ontario, Manitoba

* Denotes significant difference

Note: Because Newfoundland and Labrador, Prince Edward Island, and Saskatchewan did not oversample students by language, results for only English-language schools are available for these provinces.

Achievement in mathematics and science by gender

In mathematics, on average across the OECD countries, boys outperformed girls by five points in PISA 2018. In Canada as a whole, boys also outperformed girls by five points on average, although none of the provinces showed a statistically significant difference in average achievement scores in mathematics between boys and girls (Table 3.10, Appendix B.3.13). With respect to proficiency levels, a higher proportion of boys than girls performed at the highest levels (Levels 5 and 6) in mathematics, while a similar proportion of boys and girls

performed at the lowest level (below Level 2). Provincially, more boys than girls performed at the highest levels of proficiency in Quebec; no gender differences were observed in any of the provinces at the lowest level of proficiency (Table 3.8, Appendix B.3.11b).

Table 3.8

Summary and comparison of highest and lowest levels of proficiency in mathematics for Canada and the provinces, by gender

Mathematics – Levels 5 and 6			
	Percentage of girls is significantly higher than percentage of boys	**Percentage of boys is significantly higher than percentage of girls**	**No significant differences in the percentage of boys and girls**
		Canada, Quebec	Newfoundland and Labrador, Nova Scotia, New Brunswick, Ontario, Manitoba, Saskatchewan, Alberta, British Columbia
Girls			
	Higher* percentage than Canada	**The same percentage as Canada**	**Lower* percentage than Canada**
	Quebec	Ontario, Alberta, British Columbia	Newfoundland and Labrador, Nova Scotia, New Brunswick, Manitoba, Saskatchewan
Boys			
	Higher* percentage than Canada	**The same percentage as Canada**	**Lower* percentage than Canada**
	Quebec	New Brunswick, Ontario, Alberta, British Columbia	Newfoundland and Labrador, Nova Scotia, Manitoba, Saskatchewan
Mathematics – Below Level 2			
	Percentage of girls is significantly higher than percentage of boys	**Percentage of boys is significantly higher than percentage of girls**	**No significant differences in the percentage of boys and girls**
			Canada, all provinces
Girls			
	Higher* percentage than Canada	**The same percentage as Canada**	**Lower* percentage than Canada**
	Prince Edward Island, New Brunswick, Manitoba	Newfoundland and Labrador, Nova Scotia, Ontario, Saskatchewan, Alberta, British Columbia	Quebec
Boys			
	Higher* percentage than Canada	**The same percentage as Canada**	**Lower* percentage than Canada**
	Newfoundland and Labrador, Nova Scotia, New Brunswick, Manitoba, Saskatchewan	Prince Edward Island, Ontario, Alberta, British Columbia	Quebec

* Denotes significant difference

Note: Results for Levels 5 and 6 in Prince Edward Island are too unreliable to be published due to small sample sizes.

There was some variation in the mathematics performance of girls and boys across the provinces (Table 3.9, Appendix B.3.13). In particular, girls in Quebec had higher achievement scores than girls on average across Canada, while those in Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick, Manitoba, and Saskatchewan had scores lower than the Canadian average for girls. In comparison to boys on average across Canada, boys in Quebec had higher achievement scores on the mathematics assessment, while boys in Newfoundland and Labrador, Nova Scotia, New Brunswick, Manitoba, and Saskatchewan had lower scores.

Table 3.9

Comparison of Canadian and provincial achievement scores in mathematics and science, by gender

Girls			
	Above* the Canadian average for girls	**At the Canadian average for girls**	**Below* the Canadian average for girls**
	Mathematics		
	Quebec	Ontario, Alberta, British Columbia	Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick, Manitoba, Saskatchewan
	Science		
	Alberta	Newfoundland and Labrador, Prince Edward Island, Nova Scotia, Quebec, Ontario, British Columbia	New Brunswick, Manitoba, Saskatchewan
Boys			
	Above* the Canadian average for boys	**At the Canadian average for boys**	**Below* the Canadian average for boys**
	Mathematics		
	Quebec	Prince Edward Island, Ontario, Alberta, British Columbia	Newfoundland and Labrador, Nova Scotia, New Brunswick, Manitoba, Saskatchewan
	Science		
	Alberta	Newfoundland and Labrador, Prince Edward Island, Quebec, Ontario, British Columbia	Nova Scotia, New Brunswick, Manitoba, Saskatchewan

* Denotes significant difference

In science, no difference in average achievement scores between boys and girls was seen in Canada overall. There was a small gender gap across the OECD countries, with girls outperforming boys by two points on average. Provincially, a gender gap in science was observed only in Alberta, where girls outperformed boys by eight points (Tables 3.10 and 3.11; Appendix B.3.14).

Table 3.10

Summary of Canadian and provincial achievement scores in mathematics and science, by gender

	Girls performed significantly better than boys	**Boys performed significantly better than girls**	**No significant difference between girls and boys**
Mathematics			
		Canada	All provinces
Science			
	Alberta		Canada, Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan, British Columbia

In Canada overall, no gender differences were observed at the highest levels of proficiency (Levels 5 and 6) in science, while more boys than girls performed at the lowest level of proficiency (below Level 2). Provincially, more boys than girls performed below Level 2 in Nova Scotia, New Brunswick, Saskatchewan, and Alberta. No gender differences were observed in any of the provinces at the highest levels of proficiency (Table 3.11, Appendix B.3.12b).

Table 3.11

Summary and comparison of highest and lowest levels of proficiency in science for Canada and the provinces, by gender

Science – Levels 5 and 6			
	Percentage of girls is significantly higher than percentage of boys	**Percentage of boys is significantly higher than percentage of girls**	**No significant differences in the percentage of boys and girls**
			Canada, all provinces
Girls			
	Higher* percentage than Canada	**The same percentage as Canada**	**Lower* percentage than Canada**
	Alberta	Nova Scotia, Quebec, Ontario, British Columbia	Newfoundland and Labrador, New Brunswick, Manitoba, Saskatchewan
Boys			
	Higher percentage than Canada	**The same percentage as Canada**	**Lower* percentage than Canada**
		Newfoundland and Labrador, Nova Scotia, Quebec, Ontario, Alberta, British Columbia	New Brunswick, Manitoba, Saskatchewan
Science – Below Level 2			
	Percentage of girls is significantly higher than percentage of boys	**Percentage of boys is significantly higher than percentage of girls**	**No significant differences in the percentage of boys and girls**
		Canada, Nova Scotia, New Brunswick, Saskatchewan, Alberta	Newfoundland and Labrador, Prince Edward Island, Quebec, Ontario, Manitoba, British Columbia
Girls			
	Higher* percentage than Canada	**The same percentage as Canada**	**Lower* percentage than Canada**
	New Brunswick, Manitoba	Newfoundland and Labrador, Prince Edward Island, Nova Scotia, Quebec, Ontario, Saskatchewan, British Columbia	Alberta
Boys			
	Higher* percentage than Canada	**The same percentage as Canada**	**Lower* percentage than Canada**
	New Brunswick, Manitoba	Newfoundland and Labrador, Prince Edward Island, Nova Scotia, Quebec, Ontario, Saskatchewan, Alberta, British Columbia	

* Denotes significant difference

Note: Results for Levels 5 and 6 in Prince Edward Island are too unreliable to be published due to small sample sizes.

Results in science varied across the provinces for both girls and boys (Table 3.9, Appendix B.3.14). Girls in Alberta had higher achievement scores than girls on average across Canada, while girls in New Brunswick, Manitoba, and Saskatchewan had scores that were below the Canadian average. Boys in Alberta also had higher average scores in science than boys on average across Canada, while boys in Nova Scotia, New Brunswick, Manitoba, and Saskatchewan had lower scores.

Changes in mathematics and science performance over time

PISA 2018 is the sixth assessment of mathematics since 2003, when mathematics was the major domain for the first time, and the fifth assessment of science since 2006, when science was the major domain for the first time. Because a comprehensive analysis of trends in mathematics (between 2003 and 2015) and in science (between 2006 and 2015) was included in the PISA 2015 national report (O'Grady et al., 2016), this section focuses on changes in mathematics since 2012 and changes in science since 2015 — the most recent cycles when mathematics and science were the major domains.

> While this section looks at changes over time, performance differences should be interpreted with caution. More specifically, in order to allow for comparability over time, some common assessment items were used in each survey, and an equating procedure was used to align performance scales. However, all estimates of statistical quantities are associated with statistical uncertainty, and this is also true for the transformation parameters used to equate PISA scales over time. A linkage error that reflects this uncertainty is included in the estimate of the standard error for estimates of PISA performance trends and changes over time (OECD, 2019b). Consequently only changes that are indicated as statistically significant should be considered.

On average across OECD countries, mathematics performance remained unchanged between 2012 and 2018. The OECD average of 489 points in 2018 was not significantly different from the baseline average score of 494 in 2012. However, there were changes in performance in some of the 61 countries that participated in both PISA 2012 and PISA 2018. In 13 countries, mathematics performance improved on a statistically significant basis, while in 7 countries it declined, with other countries maintaining their scores. In Canada, performance in mathematics remained stable between 2012 and 2018 (Table 3.12, Appendix B.3.15b).

In science, on average across OECD countries, performance remained broadly stable over the 2015 to 2018 period, although changes in performance were observed in some of the 64 countries that participated in both cycles. Science performance increased on a statistically significant basis in 6 countries and decreased in 20, with no statistically significant changes observed in the remaining countries. In Canada overall, the decrease in science performance was statistically significant between 2015 (528) and 2018 (518) (Table 3.13, Appendix B.3.16b).

Performance in mathematics and science remained stable across the provinces, with the following exceptions: achievement scores in mathematics declined in Saskatchewan and British Columbia between 2012 and 2018, and scores in science declined in Quebec and British Columbia between 2015 and 2018 (Tables 3.12 and 3.13; Appendices B.3.15b and B.3.16b).

Table 3.12

Canadian results in mathematics over time, 2012–2018

	2012		2015		2018	
	Average score	Standard error	Average score	Standard error	Average score	Standard error
Canada	518	(1.8)	516	(4.2)	512	(4.1)
Newfoundland and Labrador	490	(3.7)	486	(4.8)	488	(7.3)
Prince Edward Island	479	(2.5)	499*	(7.3)	487	(11.6)
Nova Scotia	497	(4.1)	497	(5.8)	494	(7.2)
New Brunswick	502	(2.6)	493	(6.2)	491	(6.6)
Quebec	536	(3.4)	544	(5.9)	532	(4.9)
Ontario	514	(4.1)	509	(5.5)	513	(5.6)
Manitoba	492	(2.9)	489	(5.5)	482	(5.0)
Saskatchewan	506	(3.0)	484*	(4.6)	485*	(6.0)
Alberta	517	(4.6)	511	(5.9)	511	(6.1)
British Columbia	522	(4.4)	522	(6.1)	504*	(6.2)

* Significant difference compared with baseline (2012)
Note: The linkage error is incorporated into the standard error for 2015 and 2018.

Table 3.13

Canadian results in science over time, 2015–2018

	2015		2018	
	Average score	Standard error	Average score	Standard error
Canada	528	(2.1)	518*	(2.6)
Newfoundland and Labrador	506	(3.2)	506	(6.5)
Prince Edward Island	515	(5.4)	502	(9.0)
Nova Scotia	517	(4.5)	508	(4.9)
New Brunswick	506	(4.5)	492	(5.9)
Quebec	537	(4.7)	522*	(4.0)
Ontario	524	(3.9)	519	(4.3)
Manitoba	499	(4.7)	489	(4.0)
Saskatchewan	496	(3.1)	501	(4.1)
Alberta	541	(4.0)	534	(4.6)
British Columbia	539	(4.3)	517*	(5.6)

*Significant difference compared with baseline (2015)
Note: The linkage error is incorporated into the standard error for 2015 and 2018.

At the Canadian level, the proportion of low-performing (below Level 2) 15-year-old students remained stable in mathematics between 2012 and 2018; however, the proportion of students achieving below Level 2 increased in New Brunswick, Saskatchewan, and British Columbia. The proportion of high-achieving students (Levels 5 and 6) in mathematics also remained unchanged over the 2012–2018 period at the Canadian level, although, provincially, the proportion decreased in Saskatchewan (Appendix B.3.17).

In science, the proportion of low-performing students increased in Canada overall between 2015 and 2018. At the provincial level, the proportion of students performing below Level 2 in science increased in Prince Edward Island, Quebec, and British Columbia. The proportion of students achieving at Levels 5 and 6 in science remained unchanged between 2015 and 2018 in Canada overall and across all provinces (Appendix B.3.18).

Summary

Because mathematics and science were minor domains in PISA 2018, a smaller number of items and less testing time were dedicated to them, compared to the reading assessment. As a result, this chapter has provided information on overall performance in each of these domains, but not their subscales.

Canada continues to perform well internationally in mathematics and science. Students in Canada scored well above the OECD average and were outperformed by students in nine countries in mathematics and five in science among the 79 countries that participated in PISA 2018. Among the provinces, students in Quebec, Ontario, Alberta, and British Columbia performed above the OECD average in both mathematics and science. Students in Newfoundland and Labrador, Nova Scotia, and Saskatchewan performed above the OECD average in science and at the OECD average in mathematics. Students in Manitoba performed below the OECD average in mathematics and at the OECD average in science, while students in Prince Edward Island and New Brunswick performed at the OECD average in both mathematics and science.

However, in spite of these strong results, PISA 2018 results in mathematics and science in Canada suggest that there is cause for some concern. In particular, it is noteworthy that around one in six Canadian students did not meet the benchmark level of mathematics (Level 2), a proportion that has not changed since 2012. In science, around one in eight Canadian students did not meet the benchmark level, a proportion that has increased since 2015. At the same time, the proportion of high-achieving students in these minor domains has remained relatively unchanged over these periods. It is noteworthy as well that, in mathematics, boys continued to outperform girls in Canada overall, although no statistically significant differences in performance between girls and boys were observed for science. Students in francophone school systems outperformed their peers in anglophone school systems in Canada overall and in Quebec in mathematics, while in science, anglophone students outperformed their francophone peers in Nova Scotia, Ontario, and Alberta. There was no significant difference between the two language systems in other provinces.

Conclusion

In 2018, Canada participated for the seventh time in the Programme for International Student Assessment (PISA), which measures trends in the learning outcomes of 15-year-old students in reading, mathematics, and science. The study has been conducted every three years since 2000, under the aegis of the Organisation for Economic Co-operation and Development (OECD). In 2018, around 600,000 students from 79 countries participated; in Canada, over 22,500 students from approximately 800 schools participated across the 10 provinces. The major focus of PISA 2018 was reading, while mathematics and science were tested as minor domains, with global competence as an innovative domain and financial literacy as an optional minor domain.

PISA is valuable for its capacity to provide comparative information on the skill levels of students as they near the end of compulsory education. Not only does PISA enable comparisons between provinces and countries, it also provides an opportunity to monitor how these skill levels change over time.

The 2018 cycle of PISA included some changes to the reading assessment relative to 2009, when reading was last a major domain. For example, a greater emphasis was placed on multiple-source texts, which expanded the range of higher-level reading processes and strategies. As well, in order to improve the accuracy of the scores of both high- and low-performing students, PISA 2018 introduced adaptive testing in its reading assessment, whereby the electronic test form that a student received depended on his or her answers to earlier questions.

In Canada overall, 86 per cent of students performed at or above a reading proficiency of Level 2, the baseline level of reading literacy required to take advantage of further learning opportunities and to participate fully in modern society. This proportion was higher than the OECD average of 77 per cent. Across provinces, the proportion of students reaching this benchmark varied from 78 per cent in New Brunswick to 88 per cent in Quebec and Alberta.

At the higher end of the PISA reading scale, 15 per cent of Canadian students performed at the highest reading proficiency levels (Levels 5 and 6), compared to 9 per cent performing at these levels on average across the OECD countries. At the provincial level, more than 10 per cent of students in Newfoundland and Labrador, Prince Edward Island, Nova Scotia, Quebec, Ontario, Alberta, and British Columbia achieved a proficiency level of 5 or higher in reading. Although the proportion of students in Canada overall achieving at the highest levels is greater than in most other countries participating in PISA 2018, Singapore and B-S-J-Z (China) had a much higher proportion of students reading at the highest proficiency levels.

In addition to reporting results by proficiency levels, this report has also presented results by average scores, which are expressed on a scale with an average of 500 points for the OECD countries and a standard deviation of 100. This average was established in 2000 and decreased to 487 in 2018. According to this measure, Canadian 15-year-old students achieved a mean score of 520 in overall reading, 33 points above the OECD average, and were surpassed by students from only three countries. At the provincial level, with the exception of Prince Edward Island and New Brunswick, which scored at the OECD average, all provinces performed above the OECD average. Students in Alberta achieved a higher score than the Canadian average, placing them among the top-performing participants globally.

Canadian results in reading were also reported for three cognitive process subscales and two text structure subscales. The Canadian averages for the three cognitive process subscales are 517 for *locating information*, 520 for *understanding*, and 527 for *evaluating and reflecting*. Across the OECD countries, students scored 487, 487, and 489, respectively, on these three subscales. On the text structure subscales, Canadian students achieved an average score of 521 on items associated with the single-text subscale and 522 on those related to multiple texts, while the OECD average on these subscales was 485 and 490, respectively.

Canada continues to perform well internationally in mathematics, with 84 per cent of Canadian students performing at or above Level 2, compared to the OECD average of 76 per cent. At the provincial level, the proportion reaching this benchmark varies from 75 per cent in Manitoba to close to 90 per cent in Quebec. At the lower end of the PISA mathematics scale, 16 per cent of Canadian students performed below the baseline (Level 2), compared with 24 per cent of students across the OECD countries. At the same time, 15 per cent of Canadian students were considered high achievers in mathematics, performing at a proficiency level of 5 or above, compared to 11 per cent on average across the OECD countries. Eight countries had a higher proportion of high achievers than Canada; of these, Singapore and B-S-J-Z (China) had over 35 per cent of students performing at Level 5 or 6 in mathematics.

Canadian students had an average score of 512 in mathematics, well above the OECD average of 489, and were outperformed in this domain by students in nine other countries. At the provincial level, students in Manitoba scored below the OECD average in mathematics, while students in all other provinces performed at or above the OECD average. Students in Quebec performed above the Canadian average in mathematics; students in Ontario, Alberta, and British Columbia performed at the Canadian average; and students in the remaining provinces performed below the Canadian average.

Canada also achieved a strong performance in science, with 87 per cent of Canadian students performing at or above Level 2 in this domain, compared to 78 per cent on average across the OECD countries. Across the provinces, the percentage of students performing at or above this baseline level of proficiency ranges from 79 per cent in Manitoba to 89 per cent in Alberta. In Canada overall, 13 per cent of students were low achievers in science (below Level 2), compared to the OECD average of 22 per cent. Eleven per cent of Canadian students performed at the highest proficiency levels (Levels 5 and 6) in science, compared to the OECD average of 7 per cent. In fact, Canada is among the countries with the highest share of high-performing students in science, surpassed only by B-S-J-Z (China), Singapore, and Macao (China).

Canadian students had an average score of 518 in science, well above the OECD average of 489, and were outperformed by students in five other countries. At the provincial level, the performance of students in all provinces was at or above the OECD average. Students in Alberta performed above the Canadian average in science; those in Newfoundland and Labrador, Prince Edward Island, Nova Scotia, Quebec, Ontario, and British Columbia performed at the Canadian average; and those in the remaining provinces performed below the Canadian average.

Performance by language of the school system

In reading, students in anglophone school systems had higher achievement scores than their counterparts in francophone systems in Canada overall and in Nova Scotia, New Brunswick, Ontario, Manitoba, Alberta, and British Columbia. No significant difference was observed between the two language systems in Quebec. In terms of the reading subscales, students in English-language school systems achieved higher scores than their counterparts in French-language school systems in the *understanding* cognitive process subscale and the *single-text structure* subscale. There was no significant difference between the two language systems for the remaining three reading subscales.

In mathematics, students in francophone school systems outperformed those in anglophone school systems in Canada overall and in Quebec. In science, no achievement difference between the two school systems was observed at the Canadian level.

Performance by gender

As was the case internationally, Canadian girls continued to outperform boys in reading. In all provinces and across the five reading subscales, girls attained higher achievement scores than did boys. The only exception was in Prince Edward Island, where boys performed as well as girls in the *evaluating and reflecting* cognitive process subscale and the *multiple-text structure* subscale.

In mathematics, boys continued to outperform girls in Canada overall, although there was no gap in mathematics achievement scores between the two genders in any of the provinces. In science, no difference in average achievement scores between boys and girls was apparent in Canada or in most provinces. The only exception was observed in Alberta, where girls outperformed boys in science.

Performance comparisons over time

Overall reading performance has not changed between 2009 and 2018 (the last two times reading was the major domain) in Canada or in any of the provinces. Nevertheless, at the Canadian level and in Nova Scotia, New Brunswick, Ontario, and British Columbia, the proportion of low-performing students in reading (below Level 2) increased over this period. At the same time, no statistically significant change in the proportion of students reaching the highest levels in reading (Levels 5 and 6) was observed at the Canadian level, although the proportion of high-performing students increased significantly in Newfoundland and Labrador and Prince Edward Island.

Between 2012 — the last time the major focus of PISA was mathematics — and 2018, mathematics performance did not change in Canada overall, although Saskatchewan and British Columbia observed significant declines in the average mathematics performance of their students. The proportions of top-performing (Level 5 or above) and low-performing (below Level 2) 15-year-olds in mathematics remained relatively stable over the period at the Canadian level. Provincially, New Brunswick and British Columbia observed an increase in the proportion of low-performing students, and Saskatchewan observed both an increase in the proportion of low-performing students and a decrease in the proportion of high-performing ones.

With respect to science, at the Canadian level and in Quebec and British Columbia, the average performance of students decreased between 2015 — the last time the major focus of PISA was science — and 2018. The proportion of low-performing students in science increased significantly in Prince Edward Island, Quebec, and British Columbia over the period, while no statistically significant differences were observed in Canada overall or in any provinces in the proportion of top-performing students.

Contextual factors influencing reading scores

As part of the PISA 2018 assessment, students completed a background questionnaire designed to provide contextual information to aid in the interpretation of the performance results. This report has presented information on select factors that in past cycles of PISA have been found to correlate with reading achievement. In particular, this report has looked at key background characteristics of 15-year-old Canadian students and their association with reading achievement.

Students' success is connected to "learning how to learn," and their continued success depends on learning throughout their lives. The student questionnaire provides insights into the attitudes, motivations, and skills that students bring to the process of "learning how to learn." As future development of reading proficiency can be predicted by students' attitudes, behaviours, and strategies, this report has examined variables related to student engagement in and attitudes toward reading, as well as their use of reading strategies.

Student demographic characteristics

In the background questionnaire of the PISA 2018 assessment, students were asked to provide information on themselves and their home environment. In particular, they were asked to provide information on the occupation and educational attainment of their parents and on a number of home possessions that can be used as proxies for material wealth, including the number of books and other educational resources available in the home. Answers to these questions were used to derive a measure of socioeconomic status called the index of economic, social, and cultural status (ESCS). Students were also asked about their immigration background and languages spoken at home.

Canada placed among the top of all participating countries in terms of socioeconomic status, with only three countries observing higher average scores on the ESCS index. In Canada, the strength of the relationship between reading performance and socioeconomic status is weaker than the OECD average, which means that socioeconomic disadvantage plays a relatively minor role in explaining variation in student reading performance in Canada. That said, socioeconomically advantaged students outperformed socioeconomically disadvantaged students by 68 points in reading in Canada overall, with the difference ranging from 55 points in Newfoundland and Labrador to 78 points in Prince Edward Island.

In Canada, 35 per cent of students identified themselves as having an immigrant background. While non-immigrant students outperformed their immigrant peers in reading in the majority of countries participating in PISA 2018, in Canada, immigrant students performed as well as non-immigrant students. However, across the three different immigrant categories in Canada, first-generation immigrant students were outperformed by their non-immigrant and second-generation immigrant peers. As well, second-generation immigrant students had significantly higher average reading scores relative to non-immigrant students. These comparisons are quite variable across provinces, with the most notable differences observed in Quebec, where non-immigrant students outperformed both first- and second-generation immigrant students, and in New Brunswick, where first-generation immigrant students outperformed non-immigrant students.

In Canada overall, 65 per cent of students spoke English at home; of the remainder, about equal proportions of students spoke French or another language at home (17 and 18 per cent, respectively). Canadian students who spoke a language at home other than English or French had lower achievement in reading than those who spoke either of the two official languages. Provincially, students who spoke English at home outperformed their peers speaking a language other than English or French in Nova Scotia, Quebec, Ontario, Manitoba, Saskatchewan, Alberta, and British Columbia. Students who spoke French at home outperformed their peers speaking a language other than English or French in Quebec and Saskatchewan. Students who spoke a language other than French or English at home outperformed those who spoke French at home in Newfoundland and Labrador, New Brunswick, and Ontario; but they performed lower than those who spoke French at home in Quebec and Saskatchewan.

Student engagement in reading, attitudes toward reading, and use of reading strategies

PISA assesses several factors associated with how students develop reading skills. These factors become increasingly important as youth move beyond high school and take on a more active role in determining their individual learning trajectories. PISA 2018 assessed student engagement with reading through questions related to student enjoyment of reading, time spent reading for enjoyment, diversity of reading material, and preferences for reading print or digital material. PISA also assessed how students felt about their ability to read and which strategies they found useful for understanding and memorizing texts.

In Canada, close to 40 per cent of 15-year-old students reported that reading is one of their favourite hobbies, while one in four students reported that reading is a waste of time. Students who enjoyed reading were more likely to have higher reading scores.

When asked how much time they spent reading for enjoyment, 40 per cent of Canadian students reported that they do not read for enjoyment, while close to 30 per cent reported reading for enjoyment 30 minutes or less a day. Time spent reading for enjoyment is positively correlated with reading proficiency, although improvements in reading performance diminish once reading for enjoyment surpasses 30 minutes per day.

Students were also asked about the kinds of materials they read because they wanted to. In Canada, students reported a higher preference for reading fiction and a lower preference for magazines and comic books. They were also asked whether they preferred to read print or digital books. More than twice as many Canadian students reported that they preferred reading books in paper format to reading in digital format. Reading fiction, non-fiction books, and newspapers is positively associated with reading proficiency, while reading magazines and comic books has little impact on reading scores. As well, reading in paper format was associated with higher reading scores than was reading in digital format.

Students were asked to report on how they felt about their ability to read. In Canada, over 80 per cent of students reported that they believe they are good and/or fluent readers, with a slightly smaller proportion of students reporting that they are able to understand difficult texts. Nevertheless, close to 20 per cent of students reported having difficulty with reading, while a higher proportion reported struggling with reading comprehension. Students who had little confidence in their ability to read had lower reading scores than students who were more confident.

To help them understand and memorize text, most Canadian students found summarizing the text in their own words and underlining the important parts of the text to be very useful strategies. Reading the text aloud to another person was not found to be a useful strategy by most students. Discussing content with other people, underlining the important parts of the text, and summarizing the text in their own words were all strategies found to be positively associated with reading proficiency. In contrast, concentrating on the parts of the text that are easy to understand, quickly reading through the text twice, and reading the text aloud to another person were strategies found to have no relationship with reading proficiency in Canada overall.

Final statement

The results of PISA 2018 reveal that, in Canada, a majority of students have attained the level of reading proficiency required to take advantage of further learning opportunities and to participate fully in modern society. Nevertheless, a persistent gender gap favouring girls continues to exist, and there are still numerous students who perform at lower levels of proficiency and for whom reading is a challenge.

Results from this assessment provide an opportunity to confirm the success of our world-class education systems from a global perspective. Canada remains in the group of top-performing countries and achieves its standing with relatively equitable outcomes. Nevertheless, the performance of Canadian students has remained relatively unchanged in reading and mathematics since the last time those domains were the major focus of PISA (2009 and 2012, respectively) and has declined in science (since 2015). At the same time, several provinces have observed an increase in the proportion of students not reaching the benchmark level established by the OECD (Level 2) in mathematics and science.

The comparative approach taken in this report does not lend itself to developing causal explanations for these changes over time. The report provides information for ministries and departments of education as well as for education partners, contributing to their ability to validate current education policies, learning outcomes, and teaching approaches and strategies, as well as to allocate resources to ensure that they continue meeting the needs of our society. While this report has looked at the association between selected background variables and reading performance, further analysis of the information collected through PISA will help provide a better understanding of the extent to which other important background variables are related to the differences in

performance highlighted here. Reports on such secondary analysis will be available in forthcoming issues of *Assessment Matters!*, a series of articles available on the CMEC website.[11]

Today's PISA teenagers will eventually become adults responsible for the success of our economy, so it is important to both celebrate the successes and address the challenges highlighted in this report. It is essential that our education systems contribute significantly to preparing Canadian youth for full participation in our modern society for the generations to come.

[11] http://www.cmec.ca/131/Programs-and-Initiatives/Assessment/Overview/index.html

References

Aarnoutse, C., & Schellings, G. (2003) Learning reading strategies by triggering reading motivation. *Educational Studies, 29*(4), 387–409.

Andon, A., Thompson, C. G., & Becker, B. J. (2014). A quantitative synthesis of the immigrant achievement gap across OECD countries. *Large-Scale Assessments in Education, 2*(1), 7. Retrieved from http://doi.org/10.1186/s40536-014-0007-2

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*(2), 191–215. Retrieved from https://doi.org/10.1037/0033-295X.84.2.191

Banting, K., Soroka, S., and Koning, E. (2013). Multicultural diversity and redistribution. In K. Banting & J. Myles (Eds.), *Inequality and the fading of redistributive politics* (pp. 165–186). Vancouver: UBC Press.

Britain, M., & Blackstock, C. (2015). First Nations child poverty: A literature review and analysis. Ottawa: First Nations Children's Action Research and Education Service. Retrieved from https://fncaringsociety.com/sites/default/files/First%20Nations%20Child%20Poverty%20-%20A%20Literature%20Review%20and%20Analysis%202015-3.pdf

Brochu, P., O'Grady, K., Scerbina, T., & Tao, Y. (2018). *PIRLS/ePIRLS 2016: Canada in context – Canadian results from the Progress in International Reading Literacy Study*. Toronto: Council of Ministers of Education, Canada. Retrieved from https://cmec.ca/Publications/Lists/Publications/Attachments/385/PIRLS2016-Report-EN.pdf

Bruckauf, Z. (2016). *Falling behind: Socio-demographic profiles of educationally disadvantaged youth. Evidence from PISA 2000–2012*. UNICEF Office of Research, Innocenti Working Papers. Retrieved from https://www.unicef-irc.org/publications/pdf/IWP_2016_11.pdf

Causa, O., Dantan, S., & Johansson, Å. (2009). Intergenerational social mobility in European OECD countries. OECD Economics Department Working Papers, No. 709. Paris: OECD Publishing. Retrieved from http://doi.org/10.1787/223043801483

Chevalier, A., Harmon, C., O'Sullivan, V., & Walker, I. (2013). The impact of parental income and education on the schooling of their children. *IZA Journal of Labor Economics, 2*(8), 1–22. Retrieved from http://doi.org/10.1186/2193-8997-2-8

Collin, C., and Jensen, H. 2009. *A statistical profile of poverty in Canada*. Library of Parliament Cat. No. PRB 09-17E. Retrieved from http://www.parl.gc.ca/content/lop/researchpublications/prb0917-e.pdf

Council of Ministers of Education, Canada. (2008). *PCAP-13 2007: Report on the assessment of 13-year-olds in reading, mathematics, and science.* Toronto: Author. Retrieved from https://www.cmec.ca/Publications/Lists/Publications/Attachments/124/PCAP2007-Report.en.pdf

Council of Ministers of Education, Canada. (2015). Immigrants in Canada: Does socioeconomic background matter? *Assessment Matters! 9*, 1–8. Toronto: Author. Retrieved from https://cmec.ca/Publications/Lists/Publications/Attachments/343/AMatters_No9_EN.pdf

Crowe, C. C. (2013). A longitudinal investigation of parent educational involvement and student achievement: Disentangling parent socialization and child evocative effects across development. *Journal of Educational Research and Policy Studies, 13*(2), 1–33.

Duff, P. A., & Becker-Zayas, A. (2017). Demographics and heritage languages in Canada. In O. Kagan, M. Carreira, & C. Hitchens (Eds.), *The Routledge handbook of heritage language education: From innovation to program building* (pp. 57–67). New York and Abingdon, UK: Routledge.

Gambrell, L., Marinak, B., Brooker, H., & McCrea-Andrews, H. (2011). The importance of independent reading. In J. Samuels & A. E. Farstrup (Eds.), *What the research says about reading instruction* (4th ed.), (pp. 143–157). Newark, DE: International Reading Association.

Goldman, S. (2012). Adolescent literacy: Learning and understanding content. *The Future of Children, 22*(2), 89–116.

Government of Canada. (2017). *Official languages annual report 2015–2016*. Retrieved from http://open.canada.ca/data/dataset/3eb6e5a0-1618-4ced-8bc5-49615ed5b43d/resource/82cdc735-7896-4d6a-828c-851219be02a7/download/rapport15-16finalen-finalqc-1.pdf

Guthrie, J. T., Wigfield, A., & You, W. (2012). Instructional contexts for engagement and achievement in reading. In S. Christenson, A. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 601–634). New York: Springer. Retrieved from https://doi.org/10.1007/978-1-4614-2018-7

Jang, B. G. (2016). Trends and issues in adolescent literacy theories and research: An integrative review. *Korean Language Education Research, 50*(5), 5–40. Retrieved from https://doi.org/10.20880/kler.2016.51.5.5

Learned, J., Stockdill, D., & Moje, E. (2011). Integrating reading strategies and knowledge building in adolescent literacy instruction. In J. Samuels and A. Farstrup (Eds.), *What research has to say about reading instruction* (4th ed.), (pp. 159–185). Newark, DE: International Reading Association.

McKenna, M. C., Conradi, K., Lawrence, C., Jang, B. G., & Meyer, J. P. (2012). Reading attitudes of middle school students: Results of a U.S. survey. *Reading Research Quarterly, 47*(3), 283–306.

Merga, M. K. (2015). Access to books in the home and adolescent engagement in recreational book reading: Considerations for secondary school educators. *English in Education, 49*(3), 197–214. Retrieved from http://doi.org/10.1111/eie.12071

Merry, J. J. (2013). Tracing the U.S. deficit in PISA reading skills to early childhood. *Sociology of Education, 86*(3), 234–252. Retrieved from http://doi.org/10.1177/0038040712472913

Mullis, I. V. S., Martin, M. O., Goh, S., & Prendergast, C. (2017). *PIRLS 2016 encyclopedia: Education policy and curriculum in reading*. Boston: TIMSS & PIRLS International Study Center. Retrieved from http://timssandpirls.bc.edu/pirls2016/encyclopedia/

OECD. (2010). *Pathways to success: How knowledge and skills at age 15 shape future lives in Canada.* Paris: OECD Publishing. Retrieved from https://www.oecd.org/canada/pathwaystosuccess-howknowledgeandskillsatage15shapefuturelivesincanada.htm

OECD. (2012). *Learning beyond fifteen: Ten years after PISA.* Paris: OECD Publishing. Retrieved from https://www.oecd-ilibrary.org/education/learning-beyond-15_9789264172104-en

OECD. (2016a). *Low-performing students: Why they fall behind and how to help them succeed*. Paris: OECD Publishing. Retrieved from http://dx.doi.org/10.1787/9789264250246-en

OECD. (2016b). *PISA 2015 results (Volume 1): Excellence and equity in education.* Paris: OECD Publishing. Retrieved from https://www.oecd.org/publications/pisa-2015-results-volume-i-9789264266490-en.htm

OECD. (2017). *PISA 2015 results (Volume 3): Students' well-being*. Paris: OECD Publishing. Retrieved from https://www.oecd-ilibrary.org/education/pisa-2015-results-volume-iii_9789264273856-en

OECD. (2019a). *PISA 2018 assessment and analytical framework.* Paris: OECD Publishing. Retrieved from https://www.oecd-ilibrary.org/education/pisa-2018-assessment-and-analytical-framework_b25efab8-en

OECD. (2019b). *PISA 2018 results (Volume I): What students know and can do*. Paris: OECD Publishing. Retrieved from https://www.oecd-ilibrary.org/education/pisa-2018-results-volume-i_5f07c754-en

OECD. (2019c). *PISA 2018 results (Volume II): Where all students can succeed.* Paris: OECD publishing. Retrieved from https://www.oecd-ilibrary.org/education/pisa-2018-results-volume-ii_b5fd1b8f-en

O'Grady, K., Deussing, M. A., Scerbina, T., Fung, K., & Muhe, N. (2016). *Measuring up: Canadian results of the OECD PISA study. The performance of Canada's youth in science, reading and mathematics – 2015 first results for Canadians aged 15.* Toronto: Council of Ministers of Education, Canada. Retrieved from https://www.cmec.ca/Publications/Lists/Publications/Attachments/365/PISA2015-CdnReport-EN.pdf

O'Grady, K., Fung, K., Brochu, P., Servage, L., & Tao, Y. (2019). *PCAP 2016: Contextual report on student achievement in reading*. Toronto: Council of Ministers of Education, Canada. Retrieved from https://cmec.ca/Publications/Lists/Publications/Attachments/393/PCAP2016_Contextual_Report_EN_FINAL.pdf

O'Grady, K., Fung, K., Servage, L., & Khan, G. (2018). *PCAP 2016: Report on the pan-Canadian assessment of reading, mathematics, and science*. Toronto: Council of Ministers of Education, Canada. Retrieved from https://cmec.ca/Publications/Lists/Publications/Attachments/381/PCAP-2016-Public-Report-EN.pdf

Onuzo, U., Garcia, A. F., Hernandez, A., Peng, Y., & Lecoq, T. (2013). *Intergenerational equity: Understanding the linkages between parents and children – A systematic review*. London: London School of Economics and Political Science. Retrieved from https://www.unicef.org/socialpolicy/files/LSE_Capstone_Intergenerational_Equity.pdf

Parkin, A. (2015). *International report card on public education: Key facts on Canadian achievement and equity*. Toronto: Environics Institute. Retrieved from https://www.environicsinstitute.org/projects/project-details/international-report-card-on-public-education-key-facts-on-canadian-achievement-and-equity

Schnepf, S. (2008). *Inequality of learning amongst immigrant children in industrialised countries*. Institute for the Study of Labour, University of Bonn. Retrieved from http://ftp.iza.org/dp3337.pdf

Schunk, D. H., & Pajares, F. 2009. Self-efficacy theory. In K. R. Wentzel & A. Wigfield (Eds.), *Handbook of motivation in school* (pp. 35–54). New York: Routledge.

Statistics Canada. (2011). *Linguistic characteristics of Canadians: Language, 2011 Census of population.* Retrieved from http://www12.statcan.gc.ca/census-recensement/2011/as-sa/98-314-x/98-314-x2011001-eng.pdf

Statistics Canada. (2015). Distribution (in percentage) of recent immigrants in Canada by provinces and territories, 1981 to 2016. Retrieved from https://www.statcan.gc.ca/eng/dai/btd/othervisuals/other008

Statistics Canada. (2016a). Demand growing for second-language immersion programs. Retrieved from https://www150.statcan.gc.ca/n1/pub/11-402-x/2012000/chap/lang/lang01-eng.htm

Statistics Canada. (2016b). Language highlight tables, 2016 Census: Mother tongue by age (total), % distribution (2016) for the population excluding institutional residents of Canada, provinces and territories, 2016 Census – 100% data. Retrieved from https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/hlt-fst/lang/Table.cfm?Lang=E&T=11&Geo=00&SP=1&view=2&age=1

Statistics Canada. (2017a). Aboriginal peoples highlight tables, 2016 Census. Retrieved from https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/hlt-fst/abo-aut/Table.cfm?Lang=Eng&S=99&O=A&RPP=25

Statistics Canada. (2017b). Census in brief: Linguistic diversity and multilingualism in Canadian homes. Retrieved from https://www12.statcan.gc.ca/census-recensement/2016/as-sa/98-200-x/2016010/98-200-x2016010-eng.cfm

Statistics Canada. (2017c). Census in brief: Linguistic integration of immigrants and official language populations in Canada. Retrieved from https://www12.statcan.gc.ca/census-recensement/2016/as-sa/98-200-x/2016017/98-200-x2016017-eng.cfm

Sturtevat, E., Boyd, F., Brozo, W., Hinchman, K., Moore, D., & Alvermann, D. (2010). *Principled practices for adolescent literacy: A framework for instruction and policy*. London and New York: Routledge.

Sullivan, A., & Brown, M. (2015). Reading for pleasure and progress in vocabulary and mathematics. *British Educational Research Journal, 41*(6), 971–991.

Wech, D., & Weinkam, T. (2016). *Determinants of the educational situation of young migrants.* Munich: CESifo Group. Retrieved from https://www.ifo.de/DocDL/dice-report-2016-3-wech-weinkam-september.pdf

Wigent, C. A. (2013). High school readers: A profile of above average readers and readers with learning disabilities reading expository text. *Learning and Individual Differences, 25*, 134–140. Retrieved from http://doi.org/10.1016/j.lindif.2013.03.011

Yoo, M. (2015). The influence of genre understanding on strategy use and comprehension. *Journal of Adolescent and Adult Literacy, 59*(1), 83–93.

Appendix A

PISA 2018 Sampling Procedures, Exclusion Rates, and Response Rates

The accuracy of PISA survey results depends on the quality of the information on which the sample is based, as well as the sampling procedures. The PISA 2018 sample for Canada was based on a two-stage stratified sample. The first stage consisted of sampling individual schools in which 15-year-old students were enrolled. Schools were sampled systematically, with probabilities proportional to size (the measure of size being a function of the estimated number of eligible (15-year-old) students enrolled in the school). While a minimum of 150 schools were required to be selected in each country, in Canada a much larger sample of schools was selected in order to produce reliable estimates for each province and for both the anglophone and francophone school systems in Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba, Alberta, and British Columbia.

The second stage of the selection process sampled students within schools. Once schools were selected, a list of all 15-year-old students in each school was prepared. From this list, up to 42 students from each school were then selected, with equal probability. All 15-year-old students were selected if fewer than 42 were enrolled in a given school. Additionally, in Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick, and Quebec, as well as in the francophone school systems in Manitoba and Alberta, more than 42 students were selected in some schools, in order to meet sample size requirements. Additionally, if a province participated in the financial literacy (FL) international option, the FL assessment occurred in every sampled and participating school in that province. This design required that the number of students be increased to 53 so that there were 42 students in each school selected for the regular PISA test, plus 11 additional students selected for the FL assessment.

Each country participating in PISA attempted to maximize the coverage of the assessment's target population within the sampled schools. Within each sampled school, all eligible students (namely, those 15 years of age), regardless of grade, were first listed. Tables A.1a and A.1b show the total number of excluded students by province and classify them in specific categories in accordance with the international standards. Students could be excluded if they fell into any of three categories:

1) *functional disability*: a student has a moderate-to-severe permanent physical disability such that he or she cannot perform in the PISA testing situation
2) *intellectual disability*: a student has a mental or emotional disability and is cognitively delayed such that he or she cannot perform in the PISA testing situation
3) *limited proficiency in the assessment language*: a student is unable to read or speak any of the languages of the assessment in the country and would be unable to overcome the language barrier in the testing situation (typically a student who has received less than one year of instruction in the language of the assessment)

School staff determined whether a student fit into any of these categories.

The weighted student exclusion rate for Canada overall was 5.0 per cent, which is exactly at the maximum exclusion rate of 5 per cent allowed by quality standards in PISA. The weighted student exclusion rate ranged from 3.5 per cent in Quebec to 7.7 per cent in Prince Edward Island. Across all provinces, the vast majority of exclusions were a result of an intellectual disability (category 2 above). Compared with PISA 2015, the weighted student exclusion rates decreased by more than 2 per cent in Prince Edward Island, New Brunswick, Alberta,

and British Columbia. Further steps will be required in future PISA cycles to address the issue of high exclusion rates for schools and students in some provinces.

Table A.1a

PISA 2018 student exclusion rate

Canada and provinces	Total number of eligible students sampled (participating, not participating, and excluded)		Total number of students excluded		Student exclusion rate	
	Unweighted*	Weighted**	Unweighted*	Weighted**	Unweighted* %	Weighted** %
Canada	28,291	352,693	1,481	17,496	5.2	5.0
Newfoundland and Labrador	1,336	4,781	77	268	5.8	5.6
Prince Edward Island	388	1,511	27	116	7.0	7.7
Nova Scotia	1,899	8,891	144	674	7.6	7.6
New Brunswick	1,935	7,068	108	394	5.6	5.6
Quebec	5,697	71,816	212	2,545	3.7	3.5
Ontario	5,706	142,931	269	6,829	4.7	4.8
Manitoba	2,925	14,167	184	885	6.3	6.2
Saskatchewan	2,611	11,627	123	494	4.7	4.2
Alberta	2,866	43,306	147	2,275	5.1	5.3
British Columbia	2,898	46,596	190	3,015	6.6	6.5

* Based on students selected to participate.
** Weighted based on student enrolment, such that the total weighted value represents all 15-year-olds enrolled in the province and not just those selected to participate in PISA.

Table A.1b

PISA 2018 student exclusion rate by type of exclusion

Canada and provinces	Exclusion rate: students with a physical disability		Exclusion rate: students with an intellectual disability		Exclusion rate: students with limited language skills	
	Unweighted* %	Weighted** %	Unweighted* %	Weighted** %	Unweighted* %	Weighted** %
Canada	0.4	0.4	3.6	3.3	1.1	1.1
Newfoundland and Labrador	0.3	0.2	4.6	4.7	0.6	0.6
Prince Edward Island	0.5	0.6	4.6	4.7	1.8	2.3
Nova Scotia	0.4	0.4	5.9	5.8	1.1	1.2
New Brunswick	0.5	0.7	4.0	3.6	0.8	1.1
Quebec	0.4	0.6	2.4	2.4	0.8	0.6
Ontario	0.4	0.4	3.4	3.2	0.9	1.2
Manitoba	0.4	0.4	4.7	4.7	1.0	1.1
Saskatchewan	0.5	0.4	2.6	2.4	1.4	1.3
Alberta	0.6	0.7	2.7	2.9	1.7	1.6
British Columbia	0.4	0.4	4.4	4.3	1.6	1.6

* Based on students selected to participate.
** Weighted based on student enrolment, such that the total weighted value represents all 15-year-olds enrolled in the province and not just those selected to participate in PISA.

In order to minimize the potential for response bias, data quality standards in PISA require minimum participation rates for schools and students. At the Canada-wide level, a minimum response rate of 85 per cent was required for schools initially selected. PISA 2018 also required a minimum student participation rate of 80 per cent within all participating schools combined (original sample and replacements) at the national level.

Table A.2 shows the response rates for schools and students, before and after replacement, for Canada and the 10 provinces. At the national level, 1,073 schools were selected to participate in PISA 2018, and 782 of these initially selected schools participated. Rather than calculating school participation rates by dividing the number of participating schools by the total number of schools, school response rates were weighted based on the enrolment numbers for 15-year-olds in each school.

At the provincial level, school response rates after replacement ranged from 80 per cent in Quebec to nearly 100 per cent in Newfoundland and Labrador. Across Canada, the school response rate was 89 per cent.

At the student level, PISA defines a student as "assessed" when one of the following criteria is met: (a) a student has answered a minimum number of background questionnaire items and at least one cognitive item; or (b) a student has answered more than half of the items on the testing form. In PISA 2018, Canada's response rate after replacement was 84 per cent. All provinces achieved a student response rate of 81 per cent or more (Table A.2). Compared to PISA 2015, the weighted student participation rates after replacement increased by more than 3 per cent in all participating provinces except in Ontario, where it remained similar.

Table A.2

PISA 2018 school and student response rates

Canada and provinces	Total number of selected schools (participating and not participating)	School response rate before replacement		School response rate after replacement		Total number of eligible students sampled (participating and not participating)		Total number of students participating		Weighted % student participation rate after replacement (participating and not participating)
		Number	Weighted %	Number	Weighted %	Unweighted	Weighted	Unweighted	Weighted	
Canada	1,073	782	85.7	804	88.6	26,252	298,737	22,440	251,025	84.0
Newfoundland and Labrador	53	47	99.8	47	99.8	1,289	4,487	1,124	3,889	86.7
Prince Edward Island	18	15	89.0	16	90.5	361	1,268	327	1,156	91.2
Nova Scotia	64	58	97.7	58	97.7	1,755	8,051	1,511	6,945	86.3
New Brunswick	65	52	94.7	52	94.7	1,792	6,404	1,543	5,500	85.9
Quebec	185	136	79.5	137	80.3	5,272	55,582	4,528	47,770	85.9
Ontario	204	136	86.7	143	89.6	5,313	124,234	4,442	102,741	82.7
Manitoba	123	94	95.7	94	95.7	2,662	12,653	2,332	11,052	87.3
Saskatchewan	114	88	96.8	88	96.8	2,447	10,877	2,190	9,746	89.6
Alberta	127	72	68.0	85	80.8	2,688	33,060	2,190	26,781	81.0
British Columbia	120	84	97.0	84	97.0	2,673	42,122	2,253	35,446	84.2

Note: School response rates were weighted based on student enrolment.

The number of students that participated in PISA 2018, as recorded in Table A.2, include students who wrote the UH (Une Heure [One Hour]) version of the PISA test. The UH test is a shorter version of PISA, which was assigned to students with special education needs who could not successfully complete the full version of the PISA assessment. For PISA 2018 in Canada, a total of 850 students successfully wrote the UH test, and their results are included in the data analyses in this report.

Appendix B
PISA 2018 Data Tables

Table B.1.1a

Percentage of students at each proficiency level: READING

Country or province	Proficiency levels													
	Below Level 1		Level 1		Level 2		Level 3		Level 4		Level 5		Level 6	
	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error
B-S-J-Z (China)	0.8	(0.2)	4.3	(0.5)	14.3	(0.8)	27.9	(1.0)	30.8	(1.0)	17.5	(0.9)	4.2	(0.6)
Macao (China)	2.6	(0.3)	8.2	(0.6)	19.4	(0.8)	29.8	(0.8)	26.1	(0.7)	11.7	(0.6)	2.1	(0.3)
Estonia	2.3	(0.2)	8.7	(0.5)	21.2	(0.9)	29.9	(0.9)	24.0	(0.8)	11.1	(0.6)	2.8	(0.3)
Singapore	3.5	(0.3)	7.7	(0.4)	14.2	(0.5)	22.3	(0.7)	26.4	(0.6)	18.5	(0.7)	7.3	(0.4)
Ireland	2.3	(0.3)	9.5	(0.6)	21.7	(0.8)	30.3	(0.9)	24.1	(0.8)	10.3	(0.6)	1.8	(0.3)
Alberta	**3.4**	**(0.6)**	**8.6**	**(0.9)**	**17.9**	**(1.3)**	**26.2**	**(1.4)**	**25.6**	**(1.3)**	**14.3**	**(1.1)**	**4.0**	**(0.8)**
Quebec	**3.2**	**(0.4)**	**9.1**	**(0.7)**	**20.5**	**(1.1)**	**29.6**	**(1.0)**	**24.9**	**(1.0)**	**10.7**	**(0.9)**	**2.1**	**(0.4)**
Hong Kong (China)	4.5	(0.5)	8.1	(0.6)	17.8	(0.7)	27.7	(0.7)	27.1	(0.8)	12.5	(0.6)	2.3	(0.3)
Ontario	**3.6**	**(0.4)**	**9.6**	**(0.8)**	**19.8**	**(1.1)**	**26.4**	**(0.9)**	**24.3**	**(1.0)**	**13.2**	**(0.9)**	**3.1**	**(0.5)**
Finland	4.2	(0.4)	9.4	(0.6)	19.2	(0.7)	27.6	(0.8)	25.4	(0.8)	11.9	(0.7)	2.4	(0.3)
Canada	**3.8**	**(0.2)**	**10.0**	**(0.4)**	**20.1**	**(0.6)**	**27.2**	**(0.5)**	**24.0**	**(0.5)**	**12.2**	**(0.5)**	**2.8**	**(0.2)**
Poland	3.9	(0.4)	10.8	(0.6)	22.4	(0.8)	27.7	(0.8)	23.0	(0.8)	10.1	(0.7)	2.1	(0.3)
Nova Scotia	**4.2**	**(0.6)**	**10.9**	**(1.2)**	**20.7**	**(1.5)**	**27.6**	**(1.7)**	**22.7**	**(1.7)**	**10.8**	**(1.4)**	**3.1**	**(0.6)**
British Columbia	**4.4**	**(0.7)**	**10.7**	**(0.9)**	**19.4**	**(1.3)**	**25.9**	**(1.1)**	**23.8**	**(1.2)**	**12.7**	**(1.0)**	**3.0**	**(0.6)**
Korea	5.5	(0.5)	9.6	(0.7)	19.6	(0.7)	27.6	(0.8)	24.6	(0.8)	10.8	(0.6)	2.3	(0.4)
Newfoundland and Labrador	**4.1**	**(0.9)**	**11.2**	**(1.3)**	**21.4**	**(1.6)**	**27.9**	**(1.9)**	**22.8**	**(1.8)**	**10.1**	**(1.3)**	**2.5‡**	**(0.7)**
Denmark	4.1	(0.3)	11.9	(0.5)	23.9	(0.8)	30.1	(0.9)	21.6	(0.8)	7.3	(0.5)	1.1	(0.2)
Japan	4.8	(0.5)	12.0	(0.7)	22.5	(0.9)	28.6	(1.0)	21.9	(0.8)	8.6	(0.6)	1.7	(0.3)
Saskatchewan	**4.6**	**(0.7)**	**12.2**	**(0.9)**	**24.7**	**(1.2)**	**29.2**	**(1.2)**	**20.4**	**(1.2)**	**7.6**	**(0.9)**	**U‡**	**(0.4)**
United Kingdom	5.0	(0.5)	12.3	(0.7)	23.0	(0.7)	27.2	(0.7)	21.0	(0.8)	9.5	(0.6)	2.0	(0.2)
Chinese Taipei	5.8	(0.4)	12.0	(0.6)	21.8	(0.7)	27.4	(0.8)	22.0	(0.9)	9.3	(0.7)	1.6	(0.3)
Slovenia	4.9	(0.4)	12.9	(0.5)	24.5	(0.8)	29.5	(0.9)	20.3	(0.7)	6.8	(0.5)	1.0	(0.2)
Prince Edward Island	**U‡**	**(2.2)**	**12.6**	**(2.0)**	**20.5**	**(3.0)**	**28.7**	**(3.4)**	**20.5**	**(2.6)**	**10.0‡**	**(2.1)**	**U‡**	**(1.1)**
Sweden	6.8	(0.6)	11.6	(0.7)	20.6	(0.8)	25.5	(0.8)	22.3	(0.8)	10.9	(0.7)	2.4	(0.3)
New Zealand	6.3	(0.5)	12.7	(0.6)	20.8	(0.7)	24.6	(0.7)	22.5	(0.7)	10.7	(0.6)	2.4	(0.3)
United States	6.5	(0.6)	12.7	(0.8)	21.1	(0.8)	24.7	(0.8)	21.4	(0.8)	10.7	(0.7)	2.8	(0.4)
Norway	7.4	(0.5)	11.9	(0.6)	21.5	(0.7)	26.4	(0.9)	21.6	(0.8)	9.6	(0.6)	1.6	(0.2)
Australia	7.1	(0.3)	12.5	(0.4)	21.1	(0.5)	25.4	(0.5)	20.9	(0.5)	10.3	(0.4)	2.7	(0.2)
Manitoba	**5.6**	**(0.6)**	**14.1**	**(1.2)**	**23.9**	**(1.2)**	**28.3**	**(1.4)**	**18.8**	**(1.3)**	**7.8**	**(0.8)**	**1.6**	**(0.4)**
Portugal	5.9	(0.5)	14.3	(0.7)	23.3	(0.7)	28.2	(0.8)	21.0	(0.9)	6.5	(0.6)	0.8	(0.2)
Germany	7.1	(0.6)	13.6	(0.8)	21.1	(0.8)	25.4	(0.8)	21.5	(0.9)	9.5	(0.6)	1.8	(0.2)
Czech Republic	5.8	(0.6)	15.0	(0.8)	25.0	(0.9)	26.9	(0.9)	19.1	(0.8)	7.2	(0.5)	1.1	(0.2)
France	6.9	(0.5)	14.0	(0.7)	22.8	(0.8)	26.6	(0.8)	20.5	(0.7)	8.1	(0.6)	1.1	(0.2)
Belgium	7.2	(0.5)	14.0	(0.6)	22.4	(0.7)	26.5	(0.7)	20.4	(0.7)	8.3	(0.5)	1.3	(0.2)
Croatia	5.7	(0.6)	15.9	(0.8)	28.3	(0.9)	29.0	(1.0)	16.4	(0.8)	4.3	(0.4)	0.4‡	(0.1)
New Brunswick	**7.1**	**(0.8)**	**14.9**	**(1.3)**	**24.4**	**(1.6)**	**25.5**	**(1.7)**	**18.8**	**(1.7)**	**7.7**	**(1.1)**	**U‡**	**(0.6)**
Russian Federation	6.6	(0.7)	15.5	(0.9)	28.1	(0.8)	28.0	(0.8)	16.4	(0.7)	4.8	(0.5)	0.6	(0.1)
Latvia	5.8	(0.5)	16.6	(0.6)	27.4	(0.8)	28.8	(0.8)	16.6	(0.7)	4.4	(0.4)	U‡	(0.1)
Italy	8.5	(0.7)	14.8	(0.7)	26.3	(0.9)	28.2	(0.9)	16.9	(0.7)	4.9	(0.4)	0.5	(0.1)
Belarus	6.6	(0.6)	16.8	(0.8)	28.7	(0.8)	28.0	(1.0)	16.0	(0.7)	3.7	(0.4)	0.3‡	(0.1)
Austria	7.4	(0.6)	16.3	(0.8)	23.5	(0.8)	26.2	(0.9)	19.3	(0.8)	6.7	(0.5)	0.7	(0.1)
Switzerland	8.5	(0.7)	15.1	(0.7)	23.4	(0.9)	26.3	(0.8)	18.5	(0.8)	6.9	(0.6)	1.2	(0.2)
Netherlands	8.4	(0.7)	15.6	(0.7)	23.7	(0.8)	24.3	(1.0)	18.8	(0.8)	7.9	(0.6)	1.2	(0.2)
Lithuania	7.4	(0.4)	17.0	(0.6)	26.1	(0.8)	27.7	(0.7)	16.9	(0.6)	4.5	(0.4)	0.4‡	(0.1)
Hungary	8.2	(0.6)	17.0	(0.8)	25.2	(0.9)	26.3	(0.9)	17.5	(0.8)	5.2	(0.5)	0.5	(0.1)

Table B.1.1a (cont'd)

Percentage of students at each proficiency level: READING

Country or province	Proficiency levels													
	Below Level 1		Level 1		Level 2		Level 3		Level 4		Level 5		Level 6	
	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error
Ukraine	9.2	(0.8)	16.7	(0.9)	27.7	(0.8)	28.5	(1.0)	14.5	(0.8)	3.2	(0.4)	U‡	(0.1)
Turkey	7.0	(0.7)	19.1	(0.7)	30.2	(0.9)	26.9	(1.0)	13.5	(0.6)	3.1	(0.5)	U‡	(0.1)
Iceland	10.5	(0.6)	15.9	(0.8)	24.6	(0.9)	25.1	(0.8)	16.9	(0.7)	6.2	(0.6)	0.9‡	(0.2)
Luxembourg	11.7	(0.4)	17.6	(0.6)	23.7	(0.7)	23.5	(0.7)	15.9	(0.6)	6.4	(0.4)	1.3	(0.2)
Greece	11.6	(0.9)	19.0	(0.9)	27.3	(0.8)	25.2	(1.0)	13.3	(0.8)	3.3	(0.4)	0.3‡	(0.1)
Israel	16.1	(1.0)	15.0	(0.9)	19.4	(0.7)	21.6	(0.8)	17.5	(0.8)	8.4	(0.6)	2.0	(0.3)
Slovak Republic	11.6	(0.7)	19.8	(0.8)	26.9	(0.9)	23.5	(0.9)	13.6	(0.7)	4.1	(0.4)	0.5	(0.2)
Chile	10.7	(0.7)	21.0	(0.9)	29.5	(0.9)	24.4	(0.9)	11.8	(0.6)	2.4	(0.3)	U‡	(0.1)
Malta	17.4	(0.7)	18.5	(0.9)	23.7	(0.9)	21.7	(0.9)	13.4	(0.9)	4.5	(0.5)	0.9	(0.2)
Serbia	15.0	(1.0)	22.7	(0.8)	27.8	(0.8)	21.8	(0.8)	10.1	(0.7)	2.4	(0.3)	U‡	(0.1)
Romania	18.0	(1.4)	22.8	(1.2)	28.1	(1.1)	20.9	(1.3)	8.7	(1.0)	1.3	(0.3)	U‡	(0.1)
Jordan	16.2	(1.1)	25.0	(0.8)	33.8	(1.0)	20.5	(0.9)	4.3	(0.5)	U‡	(0.1)	U‡	(0.0)
Uruguay	17.9	(1.0)	24.0	(0.9)	28.1	(1.1)	20.1	(0.8)	8.3	(0.7)	1.5	(0.2)	U‡	(0.1)
Costa Rica	13.1	(0.8)	28.9	(1.1)	32.1	(1.1)	19.4	(1.1)	5.9	(0.8)	0.6	(0.2)	0.0‡	(0.0)
United Arab Emirates	21.3	(0.7)	21.6	(0.4)	23.4	(0.5)	18.1	(0.5)	10.8	(0.6)	4.1	(0.3)	0.7	(0.1)
Moldova	17.8	(0.8)	25.2	(0.8)	28.0	(0.9)	20.8	(0.9)	7.2	(0.6)	1.0	(0.3)	U‡	(0.0)
Cyprus	19.6	(0.7)	24.1	(0.8)	26.9	(0.7)	19.3	(0.6)	8.4	(0.4)	1.7	(0.2)	0.1	(0.1)
Montenegro	16.4	(0.5)	28.0	(0.7)	30.5	(0.6)	18.3	(0.6)	6.0	(0.4)	0.8	(0.2)	U‡	(0.0)
Mexico	15.6	(1.0)	29.1	(1.1)	31.7	(1.0)	17.5	(0.9)	5.3	(0.6)	0.7	(0.2)	U‡	(0.0)
Malaysia	18.0	(1.0)	27.9	(0.9)	31.4	(1.0)	17.9	(0.9)	4.3	(0.6)	U‡	(0.2)	U‡	(0.0)
Bulgaria	22.0	(1.5)	25.1	(0.9)	24.9	(1.0)	17.3	(0.9)	8.4	(0.7)	2.2	(0.3)	U‡	(0.1)
Colombia	19.6	(1.2)	30.3	(1.0)	27.7	(1.0)	15.8	(0.9)	5.7	(0.5)	0.9	(0.2)	U‡	(0.0)
Brazil	23.3	(0.7)	26.7	(0.7)	24.5	(0.6)	16.3	(0.6)	7.4	(0.5)	1.7	(0.2)	U‡	(0.1)
Qatar	27.3	(0.4)	23.6	(0.5)	23.4	(0.4)	15.8	(0.4)	7.3	(0.3)	2.2	(0.2)	0.4	(0.1)
Brunei Darussalam	24.8	(0.4)	27.0	(0.7)	24.5	(0.6)	15.5	(0.5)	6.9	(0.3)	1.3	(0.2)	U‡	(0.0)
Argentina	25.4	(1.1)	26.7	(0.9)	25.7	(0.8)	16.2	(0.7)	5.3	(0.5)	0.7	(0.2)	U‡	(0.0)
Albania	19.5	(0.8)	32.8	(0.9)	29.9	(0.8)	14.0	(0.7)	3.5	(0.4)	0.4‡	(0.1)	U‡	(0.0)
Saudi Arabia	22.9	(1.3)	29.4	(0.9)	30.4	(1.1)	14.6	(0.8)	2.6	(0.3)	U‡	(0.1)	0.0‡	(0.0)
Bosnia and Herzegovina	20.5	(1.1)	33.2	(1.1)	28.8	(1.1)	14.3	(0.9)	3.0	(0.4)	0.2‡	(0.1)	0.0‡	(0.0)
Peru	25.4	(1.1)	28.9	(0.9)	25.8	(0.7)	14.3	(0.7)	4.8	(0.5)	0.7	(0.2)	U‡	(0.0)
Republic of North Macedonia	27.2	(0.8)	27.9	(1.0)	26.6	(0.8)	14.4	(0.6)	3.5	(0.3)	U‡	(0.2)	U‡	(0.0)
Thailand	24.3	(1.4)	35.3	(1.1)	26.0	(1.0)	11.6	(0.9)	2.7	(0.4)	U	(0.1)	U‡	(0.0)
Baku (Azerbaijan)	23.5	(1.0)	37.0	(1.1)	28.6	(0.9)	9.2	(0.6)	1.6	(0.4)	U‡	(0.1)	U‡	(0.0)
Kazakhstan	25.8	(0.8)	38.4	(0.7)	23.9	(0.5)	8.9	(0.3)	2.6	(0.2)	0.4	(0.1)	U‡	(0.0)
Panama	32.8	(1.2)	31.5	(1.0)	23.0	(0.8)	9.9	(0.9)	2.6	(0.4)	U‡	(0.1)	U‡	(0.0)
Georgia	31.6	(1.1)	32.8	(0.8)	22.9	(0.8)	10.1	(0.6)	2.4	(0.3)	U‡	(0.1)	U‡	(0.0)
Lebanon	46.1	(1.8)	21.6	(0.8)	17.4	(0.9)	10.5	(0.7)	3.7	(0.5)	0.7	(0.2)	U‡	(0.0)
Indonesia	33.2	(1.3)	36.7	(1.1)	21.8	(1.0)	7.2	(0.8)	1.1	(0.2)	U‡	(0.0)	U‡	(0.0)
Morocco	39.9	(1.8)	33.4	(0.9)	20.6	(1.2)	5.6	(0.5)	0.5	(0.1)	U‡	(0.0)	0.0‡	(0.0)
Kosovo	40.8	(0.9)	38.0	(1.0)	17.5	(0.7)	3.6	(0.3)	U‡	(0.1)	U‡	(0.0)	0.0‡	(0.0)
Dominican Republic	50.3	(1.5)	28.8	(1.0)	15.0	(0.9)	4.9	(0.5)	0.9	(0.2)	U‡	(0.1)	U‡	(0.0)
Philippines	53.9	(1.6)	26.7	(0.8)	13.1	(0.7)	5.1	(0.7)	1.1	(0.3)	U‡	(0.0)	U‡	(0.0)
OECD average	**7.7**	**(0.1)**	**15.0**	**(0.1)**	**23.7**	**(0.1)**	**26.0**	**(0.1)**	**18.9**	**(0.1)**	**7.4**	**(0.1)**	**1.3**	**(0.0)**

‡ There are fewer than 30 observations.
U Too unreliable to be published.
Note: Countries and provinces have been sorted in descending order by the total percentage of students who attained Level 2 or higher. B-S-J-Z (China) represents Beijing, Shanghai, Jiangsu, and Zhejiang. See OECD 2019b, p. 21, for a note regarding Cyprus. Reading scores for Spain are not included in the international PISA reports: due to implausible student-response behaviours on the reading assessment in a small number of schools in some regions of Spain, the OECD is unable to assure full international comparability of the results. The data for Vietnam have not yet been fully validated: due to a lack of consistency in the response pattern of some performance data, the OECD cannot yet assure full international comparability of the results. Below Level 1 consists of students who scored at Level 1b and lower. Level 1 refers to Level 1a.

Table B.1.1b

Proportion of students who performed below Level 2, at Level 2 or above, and at Levels 5 and 6: READING

Country or province	Proficiency levels					
	Below Level 2		Level 2 or above		Levels 5 and 6	
	%	Standard error	%	Standard error	%	Standard error
B-S-J-Z (China)	5.2	(0.6)	94.8	(0.6)	21.7	(1.1)
Macao (China)	10.8	(0.5)	89.2	(0.5)	13.8	(0.6)
Estonia	11.1	(0.6)	88.9	(0.6)	13.9	(0.7)
Singapore	11.2	(0.5)	88.8	(0.5)	25.8	(0.7)
Ireland	11.8	(0.7)	88.2	(0.7)	12.1	(0.7)
Alberta	**11.9**	**(1.2)**	**88.1**	**(1.2)**	**18.3**	**(1.4)**
Quebec	**12.3**	**(0.9)**	**87.7**	**(0.9)**	**12.8**	**(1.1)**
Hong Kong (China)	12.6	(0.8)	87.4	(0.8)	14.8	(0.7)
Ontario	**13.2**	**(1.0)**	**86.8**	**(1.0)**	**16.4**	**(1.1)**
Finland	13.5	(0.7)	86.5	(0.7)	14.2	(0.7)
Canada	**13.8**	**(0.5)**	**86.2**	**(0.5)**	**15.0**	**(0.6)**
Poland	14.7	(0.8)	85.3	(0.8)	12.2	(0.8)
Nova Scotia	**15.1**	**(1.3)**	**84.9**	**(1.3)**	**14.0**	**(1.6)**
British Columbia	**15.1**	**(1.2)**	**84.9**	**(1.2)**	**15.8**	**(1.2)**
Korea	15.1	(0.9)	84.9	(0.9)	13.1	(0.9)
Newfoundland and Labrador	**15.3**	**(1.6)**	**84.7**	**(1.6)**	**12.6**	**(1.3)**
Denmark	16.0	(0.7)	84.0	(0.7)	8.4	(0.5)
Japan	16.8	(1.0)	83.2	(1.0)	10.3	(0.7)
Saskatchewan	**16.8**	**(1.1)**	**83.2**	**(1.1)**	**8.8**	**(1.0)**
United Kingdom	17.3	(0.9)	82.7	(0.9)	11.5	(0.8)
Chinese Taipei	17.8	(0.8)	82.2	(0.8)	10.9	(0.8)
Slovenia	17.9	(0.7)	82.1	(0.7)	7.8	(0.5)
Prince Edward Island	**18.4**	**(2.6)**	**81.6**	**(2.6)**	**11.9**	**(2.2)**
Sweden	18.4	(1.0)	81.6	(1.0)	13.3	(0.7)
New Zealand	19.0	(0.8)	81.0	(0.8)	13.1	(0.6)
United States	19.3	(1.1)	80.7	(1.1)	13.5	(0.9)
Norway	19.3	(0.8)	80.7	(0.8)	11.3	(0.6)
Australia	19.6	(0.5)	80.4	(0.5)	13.0	(0.5)
Manitoba	**19.7**	**(1.3)**	**80.3**	**(1.3)**	**9.3**	**(1.0)**
Portugal	20.2	(0.9)	79.8	(0.9)	7.3	(0.6)
Germany	20.7	(1.1)	79.3	(1.1)	11.3	(0.7)
Czech Republic	20.7	(1.1)	79.3	(1.1)	8.2	(0.5)
France	20.9	(0.7)	79.1	(0.7)	9.2	(0.7)
Belgium	21.3	(0.9)	78.7	(0.9)	9.5	(0.5)
Croatia	21.6	(1.2)	78.4	(1.2)	4.7	(0.5)
New Brunswick	**22.0**	**(1.4)**	**78.0**	**(1.4)**	**9.3**	**(1.3)**
Russian Federation	22.1	(1.2)	77.9	(1.2)	5.4	(0.5)
Latvia	22.4	(0.7)	77.6	(0.7)	4.8	(0.4)
Italy	23.3	(1.0)	76.7	(1.0)	5.3	(0.5)
Belarus	23.4	(1.0)	76.6	(1.0)	3.9	(0.4)
Austria	23.6	(1.0)	76.4	(1.0)	7.4	(0.5)
Switzerland	23.6	(1.1)	76.4	(1.1)	8.1	(0.7)
Netherlands	24.1	(1.0)	75.9	(1.0)	9.1	(0.6)
Lithuania	24.4	(0.8)	75.6	(0.8)	5.0	(0.4)
Hungary	25.3	(0.9)	74.7	(0.9)	5.7	(0.5)
Ukraine	25.9	(1.4)	74.1	(1.4)	3.4	(0.5)

Table B.1.1b (cont'd)

Proportion of students who performed below Level 2, at Level 2 or above, and at Levels 5 and 6: READING

Country or province	Proficiency levels					
	Below Level 2		Level 2 or above		Levels 5 and 6	
	%	Standard error	%	Standard error	%	Standard error
Turkey	26.1	(1.0)	73.9	(1.0)	3.3	(0.5)
Iceland	26.4	(0.9)	73.6	(0.9)	7.1	(0.6)
Luxembourg	29.3	(0.6)	70.7	(0.6)	7.6	(0.5)
Greece	30.5	(1.5)	69.5	(1.5)	3.7	(0.5)
Israel	31.1	(1.3)	68.9	(1.3)	10.4	(0.7)
Slovak Republic	31.4	(1.0)	68.6	(1.0)	4.6	(0.4)
Chile	31.7	(1.2)	68.3	(1.2)	2.6	(0.3)
Malta	35.9	(0.8)	64.1	(0.8)	5.3	(0.5)
Serbia	37.7	(1.5)	62.3	(1.5)	2.5	(0.3)
Romania	40.8	(2.2)	59.2	(2.2)	1.4	(0.3)
Jordan	41.2	(1.4)	58.8	(1.4)	U‡	(0.1)
Uruguay	41.9	(1.3)	58.1	(1.3)	1.5	(0.3)
Costa Rica	42.0	(1.6)	58.0	(1.6)	0.6	(0.2)
United Arab Emirates	42.9	(0.8)	57.1	(0.8)	4.8	(0.3)
Moldova	43.0	(1.1)	57.0	(1.1)	1.0	(0.3)
Cyprus	43.7	(0.7)	56.3	(0.7)	1.8	(0.2)
Montenegro	44.4	(0.7)	55.6	(0.7)	0.8	(0.2)
Mexico	44.7	(1.3)	55.3	(1.3)	0.8	(0.2)
Malaysia	45.8	(1.4)	54.2	(1.4)	U‡	(0.2)
Bulgaria	47.1	(1.7)	52.9	(1.7)	2.3	(0.4)
Colombia	49.9	(1.7)	50.1	(1.7)	0.9	(0.2)
Brazil	50.0	(0.9)	50.0	(0.9)	1.8	(0.2)
Qatar	50.9	(0.4)	49.1	(0.4)	2.6	(0.2)
Brunei Darussalam	51.8	(0.6)	48.2	(0.6)	1.3	(0.2)
Argentina	52.1	(1.3)	47.9	(1.3)	0.7	(0.2)
Albania	52.2	(1.1)	47.8	(1.1)	0.4‡	(0.1)
Saudi Arabia	52.4	(1.5)	47.6	(1.5)	U‡	(0.1)
Bosnia and Herzegovina	53.7	(1.6)	46.3	(1.6)	0.2‡	(0.1)
Peru	54.3	(1.3)	45.7	(1.3)	0.8	(0.2)
Republic of North Macedonia	55.1	(0.7)	44.9	(0.7)	U‡	(0.2)
Thailand	59.5	(1.7)	40.5	(1.7)	U	(0.1)
Baku (Azerbaijan)	60.4	(1.3)	39.6	(1.3)	U‡	(0.1)
Kazakhstan	64.2	(0.7)	35.8	(0.7)	0.4	(0.1)
Panama	64.3	(1.4)	35.7	(1.4)	U‡	(0.1)
Georgia	64.4	(1.1)	35.6	(1.1)	U‡	(0.1)
Lebanon	67.8	(1.5)	32.2	(1.5)	0.7	(0.2)
Indonesia	69.9	(1.4)	30.1	(1.4)	U‡	(0.0)
Morocco	73.3	(1.6)	26.7	(1.6)	U‡	(0.0)
Kosovo	78.7	(0.6)	21.3	(0.6)	U‡	(0.0)
Dominican Republic	79.1	(1.3)	20.9	(1.3)	U‡	(0.1)
Philippines	80.6	(1.4)	19.4	(1.4)	U‡	(0.0)
OECD average	**22.6**	**(0.2)**	**77.4**	**(0.2)**	**8.7**	**(0.1)**

‡ There are fewer than 30 observations.
U Too unreliable to be published.
Note: Countries and provinces have been sorted in descending order by the total percentage of students who attained Level 2 or higher. B-S-J-Z (China) represents Beijing, Shanghai, Jiangsu, and Zhejiang. See OECD 2019b, p. 21, for a note regarding Cyprus. Reading scores for Spain are not included in the international PISA reports: due to implausible student-response behaviours on the reading assessment in a small number of schools in some regions of Spain, the OECD is unable to assure full international comparability of the results. The data for Vietnam have not yet been fully validated: due to a lack of consistency in the response pattern of some performance data, the OECD cannot yet assure full international comparability of the results.

Table B.1.2

Average scores and confidence intervals: READING

Country or province	Average	Standard error	Confidence interval – 95% lower limit	Confidence interval – 95% upper limit
B-S-J-Z (China)	555	(2.7)	550	561
Singapore	549	(1.6)	546	553
Alberta	**532**	**(4.3)**	**523**	**540**
Macao (China)	525	(1.2)	523	528
Hong Kong (China)	524	(2.7)	519	530
Ontario	**524**	**(3.5)**	**517**	**531**
Estonia	523	(1.8)	519	527
Canada	**520**	**(1.8)**	**517**	**524**
Finland	520	(2.3)	516	525
Quebec	**519**	**(3.5)**	**513**	**526**
British Columbia	**519**	**(4.5)**	**511**	**528**
Ireland	518	(2.2)	514	522
Nova Scotia	**516**	**(3.9)**	**508**	**523**
Korea	514	(2.9)	508	520
Newfoundland and Labrador	**512**	**(4.3)**	**503**	**520**
Poland	512	(2.7)	507	517
Sweden	506	(3.0)	500	512
New Zealand	506	(2.0)	502	510
United States	505	(3.6)	498	512
United Kingdom	504	(2.6)	499	509
Japan	504	(2.7)	499	509
Australia	503	(1.6)	499	506
Chinese Taipei	503	(2.8)	497	508
Prince Edward Island	**503**	**(8.3)**	**486**	**519**
Denmark	501	(1.8)	498	505
Norway	499	(2.2)	495	504
Saskatchewan	**499**	**(3.0)**	**493**	**505**
Germany	498	(3.0)	492	504
Slovenia	495	(1.2)	493	498
Manitoba	**494**	**(3.4)**	**488**	**501**
Belgium	493	(2.3)	488	497
France	493	(2.3)	488	497
Portugal	492	(2.4)	487	497
Czech Republic	490	(2.5)	485	495
New Brunswick	**489**	**(3.5)**	**482**	**496**
Netherlands	485	(2.7)	480	490
Austria	484	(2.7)	479	490
Switzerland	484	(3.1)	478	490
Croatia	479	(2.7)	474	484
Latvia	479	(1.6)	476	482
Russian Federation	479	(3.1)	472	485
Italy	476	(2.4)	472	481
Hungary	476	(2.3)	472	480
Lithuania	476	(1.5)	473	479
Iceland	474	(1.7)	471	477
Belarus	474	(2.4)	469	479
Israel	470	(3.7)	463	478
Luxembourg	470	(1.1)	468	472
Ukraine	466	(3.5)	459	473
Turkey	466	(2.2)	461	470
Slovak Republic	458	(2.2)	454	462
Greece	457	(3.6)	450	465
Chile	452	(2.6)	447	457
Malta	448	(1.7)	445	452
Serbia	439	(3.3)	433	446
United Arab Emirates	432	(2.3)	427	436
Romania	428	(5.1)	418	438
Uruguay	427	(2.8)	422	433
Costa Rica	426	(3.4)	420	433
Cyprus	424	(1.4)	422	427
Moldova	424	(2.4)	419	429
Montenegro	421	(1.1)	419	423
Mexico	420	(2.7)	415	426
Bulgaria	420	(3.9)	412	428
Jordan	419	(2.9)	413	425
Malaysia	415	(2.9)	409	421
Brazil	413	(2.1)	409	417
Colombia	412	(3.3)	406	419
Brunei Darussalam	408	(0.9)	406	410
Qatar	407	(0.8)	406	409
Albania	405	(1.9)	402	409
Bosnia and Herzegovina	403	(2.9)	397	409
Argentina	402	(3.0)	396	407
Peru	401	(3.0)	395	406
Saudi Arabia	399	(3.0)	393	405
Thailand	393	(3.2)	387	399
Republic of North Macedonia	393	(1.1)	391	395
Baku (Azerbaijan)	389	(2.5)	384	394
Kazakhstan	387	(1.5)	384	390
Georgia	380	(2.2)	376	384
Panama	377	(3.0)	371	383
Indonesia	371	(2.6)	366	376
Morocco	359	(3.1)	353	366
Lebanon	353	(4.3)	345	362
Kosovo	353	(1.1)	351	355
Dominican Republic	342	(2.9)	336	347
Philippines	340	(3.3)	333	346
OECD average	**487**	**(0.4)**	**486**	**488**

Note: Countries and provinces have been sorted in descending order by average score. B-S-J-Z (China) represents Beijing, Shanghai, Jiangsu, and Zhejiang. See OECD 2019b, p. 21, for a note regarding Cyprus. Reading scores for Spain are not included in the international PISA reports: due to implausible student-response behaviours on the reading assessment in a small number of schools in some regions of Spain, the OECD is unable to assure full international comparability of the results. The data for Vietnam have not yet been fully validated: due to a lack of consistency in the response pattern of some performance data, the OECD cannot yet assure full international comparability of the results.

Table B.1.3

Average scores and confidence intervals: READING BY COGNITIVE PROCESS SUBSCALES

Cognitive process subscale	Canada, provinces, and OECD average	Average	Standard error	Confidence interval – 95% lower limit	Confidence interval – 95% upper limit
Locate information	**Canada**	**517**	**(2.3)**	**513**	**522**
	Newfoundland and Labrador	506	(9.2)	488	524
	Prince Edward Island	501	(16.8)	468	534
	Nova Scotia	511	(7.3)	497	525
	New Brunswick	490**	(7.9)	474	505
	Quebec	519	(4.7)	510	528
	Ontario	519	(3.9)	511	527
	Manitoba	495**	(6.4)	483	508
	Saskatchewan	497**	(6.5)	484	509
	Alberta	527**	(5.3)	517	538
	British Columbia	518	(5.5)	507	528
	OECD average	**487****	**(0.5)**	**486**	**488**
Understand	**Canada**	**520**	**(1.9)**	**516**	**523**
	Newfoundland and Labrador	511	(5.7)	500	522
	Prince Edward Island	498**	(7.9)	482	513
	Nova Scotia	512	(4.3)	503	520
	New Brunswick	483**	(5.0)	474	493
	Quebec	517	(3.7)	509	524
	Ontario	526**	(3.8)	519	534
	Manitoba	490**	(3.5)	483	497
	Saskatchewan	498**	(3.1)	492	504
	Alberta	530**	(4.6)	521	539
	British Columbia	517	(4.9)	507	526
	OECD average	**487****	**(0.4)**	**486**	**487**
Evaluate and reflect	**Canada**	**527**	**(2.2)**	**523**	**532**
	Newfoundland and Labrador	518	(7.7)	503	533
	Prince Edward Island	503	(14.3)	475	531
	Nova Scotia	514	(6.5)	502	527
	New Brunswick	496**	(5.8)	485	508
	Quebec	530	(4.1)	522	538
	Ontario	533	(4.0)	525	541
	Manitoba	493**	(4.8)	484	503
	Saskatchewan	496**	(5.2)	486	506
	Alberta	538	(6.1)	526	549
	British Columbia	525	(6.3)	512	537
	OECD average	**489****	**(0.5)**	**488**	**490**

** Significant difference compared to Canada.

Table B.1.4

Average scores and confidence intervals: READING BY TEXT STRUCTURE SUBSCALES

Text structure subscale	Canada, provinces, and OECD average	Average	Standard error	Confidence interval – 95% lower limit	Confidence interval – 95% upper limit
Single text	**Canada**	**521**	**(1.9)**	**517**	**524**
	Newfoundland and Labrador	512	(5.5)	501	522
	Prince Edward Island	497**	(10.2)	477	517
	Nova Scotia	512	(5.0)	502	522
	New Brunswick	484**	(4.5)	475	493
	Quebec	515	(3.7)	508	522
	Ontario	530**	(3.8)	522	537
	Manitoba	490**	(4.4)	481	498
	Saskatchewan	497**	(3.8)	490	504
	Alberta	529	(4.7)	520	538
	British Columbia	517	(5.0)	507	526
	OECD average	**485****	**(0.4)**	**484**	**486**
Multiple text	**Canada**	**522**	**(2.0)**	**518**	**526**
	Newfoundland and Labrador	511**	(5.3)	500	521
	Prince Edward Island	503**	(9.2)	485	521
	Nova Scotia	516	(5.0)	506	526
	New Brunswick	492**	(5.4)	482	503
	Quebec	526	(3.8)	519	533
	Ontario	524	(3.6)	517	531
	Manitoba	494**	(3.6)	487	501
	Saskatchewan	496**	(3.0)	490	502
	Alberta	533**	(5.0)	524	543
	British Columbia	521	(4.8)	512	531
	OECD average	**490****	**(0.4)**	**489**	**491**

** Significant difference compared to Canada.

Table B.1.5

Variation in student performance: READING

Country or province	Percentiles												Difference in score points between the 10th and 90th percentiles
	5th		10th		25th		75th		90th		95th		
	Score	Standard error	Score	Standard error	Score	Standard error	Score	Standard error	Score	Standard error	Score	Standard error	
Kosovo	245	(2.2)	265	(2.1)	304	(1.9)	398	(1.7)	442	(2.0)	470	(3.1)	177
Baku (Azerbaijan)	270	(2.6)	294	(2.5)	338	(2.4)	438	(3.0)	485	(4.6)	514	(6.3)	190
Morocco	244	(2.6)	265	(2.6)	304	(3.0)	412	(4.0)	460	(3.6)	488	(3.9)	195
Indonesia	254	(3.6)	277	(3.1)	318	(2.8)	420	(3.6)	472	(5.1)	502	(5.7)	195
Kazakhstan	271	(2.5)	294	(2.2)	333	(1.7)	433	(1.9)	490	(2.9)	527	(4.1)	197
Philippines	230	(2.6)	248	(2.3)	281	(2.3)	388	(4.7)	453	(7.2)	491	(8.3)	205
Thailand	271	(3.4)	295	(3.2)	337	(3.2)	445	(4.4)	501	(5.1)	533	(5.8)	206
Bosnia and Herzegovina	278	(3.1)	303	(2.8)	346	(3.0)	458	(3.7)	509	(4.1)	537	(4.0)	206
Albania	277	(2.9)	303	(2.9)	349	(2.2)	459	(2.8)	510	(3.3)	542	(4.1)	207
Costa Rica	295	(3.8)	323	(3.1)	370	(2.9)	483	(4.5)	534	(5.9)	563	(6.4)	211
Dominican Republic	221	(2.8)	241	(2.5)	281	(2.7)	395	(4.0)	453	(5.5)	488	(6.1)	212
Mexico	286	(3.9)	314	(3.5)	362	(2.8)	476	(3.5)	530	(4.2)	562	(5.8)	216
Georgia	249	(3.1)	274	(2.5)	319	(2.6)	436	(2.8)	493	(3.6)	526	(3.8)	219
Saudi Arabia	256	(4.8)	286	(4.4)	341	(4.0)	459	(3.1)	507	(3.0)	534	(3.5)	220
Jordan	261	(6.9)	303	(5.7)	366	(3.9)	480	(2.6)	524	(3.1)	550	(3.6)	221
Malaysia	273	(3.5)	302	(3.4)	357	(3.1)	474	(3.4)	524	(4.2)	552	(5.0)	221
Montenegro	281	(2.6)	310	(2.1)	360	(1.6)	480	(1.6)	534	(2.0)	566	(2.7)	224
B-S-J-Z (China)	406	(5.9)	441	(4.2)	498	(3.5)	617	(3.1)	666	(3.5)	692	(4.8)	225
Panama	237	(4.0)	265	(3.7)	315	(3.0)	436	(4.2)	493	(5.6)	528	(6.7)	229
Turkey	321	(4.6)	351	(4.1)	404	(3.0)	527	(2.4)	581	(3.1)	610	(4.6)	230
Colombia	272	(4.1)	300	(3.7)	350	(3.5)	472	(4.1)	532	(4.7)	566	(4.9)	231
Croatia	329	(5.2)	362	(4.6)	418	(3.7)	542	(2.9)	594	(3.2)	623	(3.9)	232
Belarus	322	(4.5)	355	(3.4)	412	(3.1)	538	(3.0)	589	(3.1)	617	(4.0)	234
Latvia	328	(3.6)	360	(3.2)	415	(2.3)	542	(2.3)	595	(2.7)	624	(3.0)	235
Ireland	364	(4.1)	398	(3.5)	456	(2.8)	583	(2.6)	635	(2.8)	663	(3.8)	236
Denmark	344	(4.0)	380	(3.0)	439	(2.7)	566	(2.1)	618	(2.6)	647	(3.3)	238
Macao (China)	365	(5.0)	403	(3.2)	464	(2.3)	590	(2.1)	641	(3.0)	670	(2.8)	238
Peru	256	(3.5)	283	(2.9)	334	(3.3)	463	(3.8)	523	(4.9)	558	(6.3)	240
Chile	298	(3.7)	331	(3.6)	389	(3.1)	517	(3.4)	572	(3.3)	602	(3.5)	241
Russian Federation	321	(5.4)	357	(4.8)	416	(3.7)	543	(3.3)	597	(3.6)	629	(4.4)	241
Estonia	367	(3.8)	402	(3.5)	460	(2.6)	587	(2.3)	643	(3.1)	676	(3.7)	242
Slovenia	335	(3.9)	372	(3.0)	431	(2.2)	561	(2.1)	614	(2.8)	644	(3.4)	242
Quebec	**358**	**(5.8)**	**396**	**(4.8)**	**457**	**(4.2)**	**586**	**(4.3)**	**637**	**(4.4)**	**666**	**(4.5)**	**242**
Ukraine	302	(6.2)	340	(5.2)	404	(4.8)	532	(3.5)	582	(3.8)	612	(4.8)	243
Moldova	268	(4.4)	301	(3.3)	358	(2.9)	491	(3.4)	544	(3.7)	573	(4.9)	243
Saskatchewan	**338**	**(6.9)**	**376**	**(6.2)**	**436**	**(4.3)**	**565**	**(4.0)**	**621**	**(4.7)**	**651**	**(7.0)**	**245**
Republic of North Macedonia	233	(3.4)	268	(2.7)	328	(2.2)	460	(1.8)	513	(2.4)	543	(2.7)	245
Lithuania	316	(3.5)	351	(2.7)	410	(2.6)	543	(1.9)	597	(1.8)	625	(3.2)	246
Portugal	327	(4.7)	362	(4.0)	425	(3.4)	562	(2.9)	613	(2.7)	640	(4.4)	250
Poland	347	(4.5)	384	(3.6)	446	(2.9)	581	(3.4)	636	(4.0)	667	(4.1)	252
Japan	337	(5.1)	374	(4.5)	438	(3.7)	572	(3.1)	627	(3.7)	657	(4.1)	253
Uruguay	267	(3.5)	299	(3.6)	360	(3.6)	495	(3.6)	552	(4.5)	585	(4.1)	253
Italy	306	(5.5)	345	(4.6)	413	(3.2)	545	(3.0)	598	(3.4)	628	(3.5)	253
Serbia	282	(4.0)	312	(3.9)	370	(4.4)	508	(3.5)	566	(3.5)	599	(3.8)	253
Czech Republic	328	(5.2)	362	(4.3)	422	(3.7)	560	(2.9)	616	(2.8)	647	(3.1)	254
Hong Kong (China)	342	(6.7)	390	(5.5)	463	(3.7)	595	(2.6)	645	(2.5)	673	(3.3)	255

Table B.1.5 (cont'd)

Variation in student performance: READING

Country or province	Percentiles												Difference in score points between the 10th and 90th percentiles
	5th		10th		25th		75th		90th		95th		
	Score	Standard error	Score	Standard error	Score	Standard error	Score	Standard error	Score	Standard error	Score	Standard error	
Argentina	240	(4.5)	274	(4.2)	333	(3.4)	471	(3.6)	529	(3.4)	561	(3.9)	255
Manitoba	**329**	**(6.4)**	**366**	**(5.1)**	**427**	**(4.5)**	**562**	**(4.9)**	**621**	**(5.7)**	**655**	**(6.1)**	**255**
Newfoundland and Labrador	**344**	**(9.5)**	**383**	**(7.7)**	**442**	**(6.6)**	**581**	**(6.2)**	**638**	**(7.4)**	**671**	**(9.5)**	**256**
Hungary	311	(3.7)	346	(4.0)	407	(3.0)	547	(2.9)	602	(3.7)	631	(4.1)	256
Romania	261	(6.5)	297	(6.0)	361	(6.1)	497	(6.0)	554	(5.9)	584	(5.5)	256
Finland	345	(4.7)	387	(4.2)	455	(3.2)	591	(2.5)	643	(3.0)	672	(3.3)	256
Greece	292	(4.8)	326	(4.9)	390	(4.9)	526	(3.7)	583	(3.9)	614	(5.0)	257
Brunei Darussalam	258	(1.9)	284	(1.9)	335	(1.4)	476	(1.7)	542	(2.5)	578	(2.5)	258
Canada	**349**	**(2.8)**	**388**	**(2.4)**	**452**	**(2.3)**	**592**	**(2.0)**	**646**	**(2.3)**	**677**	**(2.8)**	**259**
Cyprus	265	(2.7)	295	(2.9)	353	(2.3)	494	(2.0)	554	(2.6)	587	(3.0)	259
United Kingdom	334	(4.4)	372	(4.3)	435	(3.2)	575	(3.1)	632	(3.5)	664	(3.8)	260
Ontario	**352**	**(5.6)**	**390**	**(5.0)**	**455**	**(4.7)**	**596**	**(4.0)**	**650**	**(4.3)**	**681**	**(5.4)**	**260**
Austria	318	(3.9)	350	(3.7)	413	(4.1)	558	(2.9)	612	(2.9)	641	(2.9)	262
Brazil	258	(2.6)	286	(2.6)	340	(2.3)	482	(3.1)	548	(3.7)	584	(4.1)	262
Korea	329	(5.8)	377	(4.9)	449	(3.8)	585	(3.1)	640	(3.9)	669	(4.1)	262
Nova Scotia	**343**	**(8.3)**	**383**	**(6.1)**	**447**	**(5.4)**	**586**	**(4.4)**	**645**	**(7.8)**	**679**	**(7.5)**	**263**
Alberta	**357**	**(8.9)**	**396**	**(7.6)**	**464**	**(5.7)**	**604**	**(4.8)**	**659**	**(5.2)**	**689**	**(6.6)**	**263**
Chinese Taipei	325	(4.2)	367	(3.8)	435	(3.4)	576	(3.7)	630	(3.8)	661	(4.5)	263
Slovak Republic	291	(4.3)	326	(4.0)	388	(3.1)	529	(3.1)	590	(3.3)	623	(3.5)	263
France	319	(4.3)	355	(3.5)	423	(3.0)	567	(3.3)	622	(3.6)	651	(4.0)	266
Bulgaria	263	(4.2)	290	(4.5)	344	(4.9)	491	(5.0)	557	(5.2)	594	(5.3)	267
New Brunswick	**316**	**(7.1)**	**352**	**(5.9)**	**419**	**(5.3)**	**564**	**(5.9)**	**621**	**(7.8)**	**656**	**(9.4)**	**269**
British Columbia	**342**	**(8.2)**	**380**	**(6.7)**	**448**	**(6.1)**	**595**	**(4.8)**	**649**	**(4.3)**	**680**	**(5.9)**	**269**
Switzerland	308	(5.1)	345	(4.6)	413	(4.0)	558	(3.8)	615	(4.0)	647	(4.4)	270
Belgium	317	(4.0)	352	(3.8)	421	(3.2)	568	(2.6)	623	(2.6)	653	(2.8)	271
Prince Edward Island	**325**	**(26.6)**	**364**	**(18.4)**	**435**	**(13.2)**	**574**	**(11.0)**	**635**	**(10.9)**	**662**	**(12.9)**	**271**
Norway	310	(4.3)	356	(4.3)	430	(3.2)	576	(3.1)	632	(2.9)	661	(3.0)	276
Netherlands	309	(5.2)	344	(4.4)	410	(3.5)	562	(3.4)	621	(3.3)	651	(3.4)	277
Iceland	293	(4.4)	332	(4.0)	402	(3.3)	549	(3.0)	609	(3.3)	640	(3.8)	277
Germany	316	(5.0)	354	(4.5)	424	(4.4)	576	(3.5)	632	(3.5)	663	(3.6)	278
New Zealand	322	(4.8)	362	(3.7)	432	(3.2)	584	(2.1)	640	(2.9)	671	(2.9)	278
Sweden	317	(5.5)	360	(5.7)	434	(4.1)	583	(3.2)	640	(3.5)	672	(3.7)	280
United States	321	(5.7)	361	(5.3)	430	(4.4)	584	(4.3)	643	(3.9)	676	(4.6)	282
Australia	315	(2.7)	357	(2.8)	429	(2.2)	580	(2.0)	640	(2.2)	673	(2.6)	284
Singapore	352	(3.8)	398	(3.9)	478	(2.3)	628	(2.0)	684	(2.5)	714	(2.6)	285
Luxembourg	291	(3.1)	325	(2.1)	392	(2.0)	548	(1.9)	612	(2.8)	646	(3.9)	287
Qatar	233	(1.9)	264	(1.8)	326	(1.5)	483	(1.2)	552	(1.8)	592	(2.1)	289
Lebanon	180	(4.9)	211	(4.6)	268	(4.6)	434	(5.2)	507	(5.0)	546	(5.7)	296
Malta	258	(4.2)	295	(3.2)	369	(3.0)	529	(3.0)	593	(3.3)	628	(4.3)	298
United Arab Emirates	251	(2.4)	284	(2.7)	348	(2.5)	511	(3.5)	584	(3.1)	624	(3.0)	300
Israel	256	(5.4)	296	(5.9)	381	(5.8)	563	(3.8)	628	(3.7)	663	(3.9)	332
OECD average	**318**	**(0.7)**	**354**	**(0.7)**	**419**	**(0.6)**	**558**	**(0.5)**	**614**	**(0.5)**	**645**	**(0.6)**	**260**

Note: Countries and provinces have been sorted in ascending order by the difference in score points between the 10th and 90th percentiles. B-S-J-Z (China) represents Beijing, Shanghai, Jiangsu, and Zhejiang. See OECD 2019b, p. 21, for a note regarding Cyprus. Reading scores for Spain are not included in the international PISA reports: due to implausible student-response behaviours on the reading assessment in a small number of schools in some regions of Spain, the OECD is unable to assure full international comparability of the results. The data for Vietnam have not yet been fully validated: due to a lack of consistency in the response pattern of some performance data, the OECD cannot yet assure full international comparability of the results.

Table B.1.6a

Percentage of students at each proficiency level in anglophone and francophone school systems: READING

Canada and provinces	Proficiency levels													
	Below Level 1		Level 1		Level 2		Level 3		Level 4		Level 5		Level 6	
	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error
Anglophone school systems														
Canada	3.7	(0.3)	9.9	(0.5)	19.8	(0.7)	26.7	(0.5)	24.1	(0.6)	12.8	(0.5)	3.1	(0.3)
Newfoundland and Labrador	4.1	(0.9)	11.2	(1.3)	21.4	(1.6)	27.9	(1.9)	22.8	(1.8)	10.1	(1.3)	2.5‡	(0.7)
Prince Edward Island	U‡	(2.1)	12.2	(2.1)	20.1	(3.0)	29.1	(3.5)	21.1	(2.8)	10.2‡	(2.2)	U‡	(1.1)
Nova Scotia	3.7	(0.7)	10.4	(1.2)	20.6	(1.5)	27.8	(1.7)	23.2	(1.8)	11.1	(1.4)	3.2	(0.6)
New Brunswick	6.5	(1.0)	14.2	(1.5)	23.0	(2.1)	24.7	(2.1)	20.6	(2.0)	8.9	(1.3)	U‡	(0.8)
Quebec	U‡	(0.7)	9.1	(1.5)	19.8	(1.5)	29.0	(1.8)	24.8	(2.1)	11.8	(1.4)	3.3	(0.9)
Ontario	3.2	(0.5)	9.2	(0.8)	19.4	(1.2)	26.5	(0.9)	24.8	(1.0)	13.6	(0.9)	3.3	(0.5)
Manitoba	5.5	(0.6)	13.9	(1.2)	23.8	(1.3)	28.4	(1.4)	19.0	(1.3)	7.8	(0.8)	1.6	(0.4)
Saskatchewan	4.6	(0.7)	12.1	(0.9)	24.7	(1.2)	29.3	(1.2)	20.5	(1.2)	7.6	(0.9)	U‡	(0.4)
Alberta	3.4	(0.6)	8.5	(0.9)	17.9	(1.3)	26.2	(1.4)	25.7	(1.3)	14.4	(1.1)	4.0	(0.8)
British Columbia	4.4	(0.7)	10.7	(0.9)	19.4	(1.3)	25.9	(1.1)	23.8	(1.2)	12.8	(1.0)	3.1	(0.6)
Francophone school systems														
Canada	4.3	(0.4)	10.3	(0.7)	21.5	(1.1)	29.0	(0.9)	23.4	(1.0)	9.8	(0.9)	1.8	(0.4)
Nova Scotia	20.0	(3.3)	22.9	(4.2)	21.1	(4.0)	20.2	(4.1)	11.3‡	(3.4)	U‡	(2.6)	U‡	(0.8)
New Brunswick	8.7	(1.6)	16.6	(2.4)	27.6	(3.2)	27.6	(2.8)	14.6	(2.2)	4.5‡	(1.3)	U‡	(0.5)
Quebec	3.3	(0.4)	9.0	(0.8)	20.6	(1.2)	29.6	(1.1)	24.9	(1.1)	10.6	(1.0)	1.9	(0.4)
Ontario	11.4	(1.3)	19.8	(1.6)	28.4	(1.8)	23.5	(1.6)	12.4	(1.4)	4.0	(0.7)	U‡	(0.3)
Manitoba	U‡	(4.1)	23.6	(3.5)	27.7	(4.0)	22.8	(3.4)	10.4‡	(3.0)	U‡	(2.1)	U‡	(0.5)
Alberta	6.4‡	(2.0)	14.7	(3.1)	22.3	(4.0)	30.2	(4.6)	16.9	(3.2)	U‡	(3.0)	U‡	(1.5)
British Columbia	9.0‡	(2.7)	14.9‡	(4.3)	21.6‡	(5.3)	30.4	(5.2)	19.0‡	(4.7)	U‡	(2.5)	U‡	(1.0)

‡ There are fewer than 30 observations.
U Too unreliable to be published.
Note: Because Newfoundland and Labrador, Prince Edward Island, and Saskatchewan did not oversample students by language, results for only English-language schools are available for these provinces.

Table B.1.6b

Proportion of students in anglophone and francophone school systems who performed below Level 2, at Level 2 or above, and at Levels 5 and 6: READING

	Canada and provinces	Anglophone school systems		Francophone school systems		Difference (A–F)	
		%	Standard error	%	Standard error	Difference	Standard error
Below Level 2							
	Canada	13.5	(0.6)	14.5	(0.9)	-1.0	(1.1)
	Newfoundland and Labrador	15.3	(1.6)	--	--	--	--
	Prince Edward Island	17.5	(2.6)	--	--	--	--
	Nova Scotia	14.1	(1.3)	43.0**	(4.6)	-28.9*	(4.7)
	New Brunswick	20.7**	(1.8)	25.3**	(2.3)	-4.6	(3.1)
	Quebec	11.3	(1.5)	12.4**	(1.0)	-1.1	(1.8)
	Ontario	12.4	(1.0)	31.2**	(1.8)	-18.8*	(2.2)
	Manitoba	19.3**	(1.3)	35.2**	(5.5)	-15.8*	(5.8)
	Saskatchewan	16.7**	(1.1)	--	--	--	--
	Alberta	11.9	(1.2)	21.1	(3.5)	-9.2*	(3.7)
	British Columbia	15.1	(1.2)	24.0**	(4.7)	-8.9	(4.9)
Level 2 or above							
	Canada	86.5	(0.6)	85.5	(0.9)	1.0	(1.1)
	Newfoundland and Labrador	84.7	(1.6)	--	--	--	--
	Prince Edward Island	82.5	(2.6)	--	--	--	--
	Nova Scotia	85.9	(1.3)	57.0**	(4.6)	28.9*	(4.7)
	New Brunswick	79.3**	(1.8)	74.7**	(2.3)	4.6	(3.1)
	Quebec	88.7	(1.5)	87.6**	(1.0)	1.1	(1.8)
	Ontario	87.6	(1.0)	68.8**	(1.8)	18.8*	(2.2)
	Manitoba	80.7**	(1.3)	64.8**	(5.5)	15.8*	(5.8)
	Saskatchewan	83.3**	(1.1)	--	--	--	--
	Alberta	88.1	(1.2)	78.9	(3.5)	9.2*	(3.7)
	British Columbia	84.9	(1.2)	76.0**	(4.7)	8.9	(4.9)
Levels 5 and 6							
	Canada	15.9	(0.6)	11.6	(1.1)	4.4*	(1.3)
	Newfoundland and Labrador	12.6**	(1.3)	--	--	--	--
	Prince Edward Island	12.2	(2.3)	--	--	--	--
	Nova Scotia	14.3	(1.6)	U**	(2.7)	--	--
	New Brunswick	11.0**	(1.6)	5.0**	(1.4)	6.0*	(1.8)
	Quebec	15.2	(1.7)	12.5**	(1.3)	2.6	(2.3)
	Ontario	16.9	(1.1)	4.5**	(0.7)	12.4*	(1.3)
	Manitoba	9.4**	(1.0)	U**	(2.1)	--	--
	Saskatchewan	8.8**	(1.0)	--	--	--	--
	Alberta	18.4	(1.4)	U	(3.2)	--	--
	British Columbia	15.8	(1.2)	U**	(2.8)	--	--

-- Not available.
U Too unreliable to be published.
* Significant difference within Canada or province.
** Significant difference compared to Canada.
Note: Because Newfoundland and Labrador, Prince Edward Island, and Saskatchewan did not oversample students by language, results for only English-language schools are available for these provinces.

Table B.1.7

Average scores by language of the school system: READING

Canada and provinces	Anglophone school systems		Francophone school systems		Difference (A–F)	
	Average	Standard error	Average	Standard error	Difference	Standard error
Canada	522	(2.1)	511	(3.5)	11*	(4.1)
Newfoundland and Labrador	512**	(4.3)	--	--	--	--
Prince Edward Island	505**	(8.3)	--	--	--	--
Nova Scotia	518	(3.9)	435**	(10.8)	83*	(10.4)
New Brunswick	497**	(5.1)	470**	(5.4)	27*	(8.4)
Quebec	527	(4.8)	519**	(4.0)	9	(6.5)
Ontario	527**	(3.7)	456**	(4.5)	71*	(5.5)
Manitoba	495**	(3.5)	449**	(11.3)	46*	(11.8)
Saskatchewan	499**	(3.0)	--	--	--	--
Alberta	532**	(4.3)	492	(9.6)	40*	(10.0)
British Columbia	520	(4.5)	478**	(11.5)	41*	(12.0)

-- Not available.
* Significant difference within Canada or province.
** Significant difference compared to Canada.
Note: Because Newfoundland and Labrador, Prince Edward Island, and Saskatchewan did not oversample students by language, results for only English-language schools are available for these provinces.

Table B.1.8

Average scores by language of the school system: READING BY COGNITIVE PROCESS SUBSCALES

Cognitive process subscale	Canada and provinces	Anglophone school systems		Francophone school systems		Difference (A–F)	
		Average	Standard error	Average	Standard error	Difference	Standard error
Locate information	Canada	518	(2.5)	513	(4.6)	5	(4.9)
	Newfoundland and Labrador	506	(9.2)	--	--	--	--
	Prince Edward Island	502	(18.4)	--	--	--	--
	Nova Scotia	513	(7.5)	456**	(21.4)	57*	(22.6)
	New Brunswick	495**	(9.4)	475**	(13.7)	20	(16.2)
	Quebec	519	(8.5)	519**	(5.1)	0	(9.4)
	Ontario	521	(4.1)	464**	(8.4)	57*	(9.8)
	Manitoba	496**	(6.7)	477	(29.4)	19	(32.0)
	Saskatchewan	497**	(6.5)	--	--	--	--
	Alberta	527	(5.3)	505	(16.6)	22	(15.8)
	British Columbia	518	(5.5)	503	(19.2)	15	(18.6)
Understand	Canada	523	(2.3)	509	(3.7)	14*	(4.5)
	Newfoundland and Labrador	511**	(5.7)	--	--	--	--
	Prince Edward Island	500**	(8.3)	--	--	--	--
	Nova Scotia	515	(4.3)	429**	(13.9)	86*	(13.2)
	New Brunswick	491**	(5.9)	466**	(8.0)	25*	(9.3)
	Quebec	525	(5.8)	516**	(4.1)	9	(7.2)
	Ontario	529**	(4.0)	455**	(5.0)	74*	(6.1)
	Manitoba	491**	(3.6)	447**	(10.5)	44*	(11.7)
	Saskatchewan	498**	(3.1)	--	--	--	--
	Alberta	530	(4.7)	496	(14.9)	34*	(15.9)
	British Columbia	517	(4.9)	473**	(16.0)	44*	(16.8)
Evaluate and reflect	Canada	529	(2.6)	523	(4.0)	6	(4.7)
	Newfoundland and Labrador	518	(7.7)	--	--	--	--
	Prince Edward Island	505	(14.3)	--	--	--	--
	Nova Scotia	516	(6.6)	465**	(21.0)	51*	(22.0)
	New Brunswick	502**	(6.9)	481**	(13.6)	22	(16.0)
	Quebec	535	(5.3)	529**	(4.6)	6	(7.2)
	Ontario	535**	(4.2)	477**	(8.2)	58*	(9.2)
	Manitoba	494**	(4.9)	457**	(25.3)	37	(26.5)
	Saskatchewan	496**	(5.1)	--	--	--	--
	Alberta	538	(6.1)	512	(17.0)	25	(18.5)
	British Columbia	525	(6.3)	498	(20.8)	27	(19.8)

-- Not available.
* Significant difference within Canada or province.
** Significant difference compared to Canada.
Note: Because Newfoundland and Labrador, Prince Edward Island, and Saskatchewan did not oversample students by language, results for only English-language schools are available for these provinces.

Table B.1.9

Average scores by language of the school system: READING BY TEXT STRUCTURE SUBSCALES

Text structure subscale	Canada and provinces	Anglophone school systems		Francophone school systems		Difference (A–F)	
		Average	Standard error	Average	Standard error	Difference	Standard error
Single text	Canada	524	(2.3)	507	(3.5)	18*	(4.3)
	Newfoundland and Labrador	512**	(5.5)	--	--	--	--
	Prince Edward Island	500**	(11.2)	--	--	--	--
	Nova Scotia	515	(5.1)	435**	(15.4)	80*	(15.8)
	New Brunswick	493**	(6.3)	461**	(5.9)	33*	(9.2)
	Quebec	527	(6.4)	514**	(4.1)	13	(7.5)
	Ontario	533**	(4.0)	457**	(8.1)	76*	(9.3)
	Manitoba	491**	(4.5)	445**	(12.7)	46*	(13.3)
	Saskatchewan	497**	(3.8)	--	--	--	--
	Alberta	529	(4.7)	484	(13.9)	45*	(14.3)
	British Columbia	517	(5.0)	462**	(14.7)	55*	(15.7)
Multiple text	Canada	523	(2.3)	519	(3.8)	4	(4.4)
	Newfoundland and Labrador	511**	(5.3)	--	--	--	--
	Prince Edward Island	504	(9.7)	--	--	--	--
	Nova Scotia	519	(4.9)	453**	(13.1)	66*	(11.9)
	New Brunswick	497**	(6.9)	480**	(6.4)	17	(8.9)
	Quebec	528	(5.5)	526**	(4.2)	2	(7.0)
	Ontario	526	(3.7)	467**	(6.6)	60*	(7.4)
	Manitoba	494**	(3.8)	463**	(11.3)	32*	(12.8)
	Saskatchewan	496**	(3.0)	--	--	--	--
	Alberta	533**	(5.0)	509	(10.7)	24*	(11.1)
	British Columbia	522	(4.8)	492	(13.8)	30*	(14.7)

-- Not available.
* Significant difference within Canada or province.
** Significant difference compared to Canada.
Note: Because Newfoundland and Labrador, Prince Edward Island, and Saskatchewan did not oversample students by language, results for only English-language schools are available for these provinces.

Table B.1.10a

Percentage of students at each proficiency level by gender: READING

Canada and provinces	Proficiency levels													
	Below Level 1		Level 1		Level 2		Level 3		Level 4		Level 5		Level 6	
	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error
Girls														
Canada	2.2	(0.2)	7.4	(0.4)	18.6	(0.7)	28.1	(0.7)	26.0	(0.7)	14.1	(0.6)	3.6	(0.3)
Newfoundland and Labrador	1.8‡	(0.6)	8.1	(1.6)	19.9	(2.2)	32.4	(2.9)	24.9	(2.9)	10.9	(1.7)	U‡	(0.9)
Prince Edward Island	U‡	(1.5)	10.7‡	(2.9)	20.1	(4.1)	31.1	(5.0)	21.9	(3.9)	11.5‡	(3.6)	U‡	(1.7)
Nova Scotia	1.7‡	(0.5)	7.7	(1.3)	19.1	(1.9)	28.9	(2.2)	25.3	(2.2)	13.2	(1.9)	4.1‡	(0.9)
New Brunswick	3.2‡	(0.8)	12.5	(1.8)	23.6	(2.3)	28.8	(2.6)	22.0	(2.5)	8.0	(1.4)	U‡	(0.8)
Quebec	2.0	(0.4)	6.8	(0.8)	18.5	(1.4)	29.5	(1.4)	27.7	(1.4)	12.9	(1.3)	2.7	(0.5)
Ontario	2.3	(0.4)	7.0	(0.8)	18.4	(1.3)	27.7	(1.4)	25.7	(1.3)	14.8	(1.3)	4.1	(0.7)
Manitoba	3.8	(0.7)	10.6	(1.4)	24.3	(1.7)	29.1	(1.9)	21.2	(2.0)	9.2	(1.3)	U‡	(0.6)
Saskatchewan	2.5‡	(0.7)	8.5	(1.1)	22.7	(2.0)	32.6	(2.0)	23.1	(1.7)	9.4	(1.1)	U‡	(0.5)
Alberta	2.1‡	(0.6)	5.7	(1.0)	15.5	(1.6)	27.0	(1.8)	27.8	(1.8)	17.2	(1.5)	4.7	(1.0)
British Columbia	2.0‡	(0.6)	8.7	(1.0)	18.4	(1.6)	25.9	(1.5)	25.9	(1.7)	15.1	(1.5)	4.0	(0.9)
Boys														
Canada	5.3	(0.4)	12.5	(0.6)	21.6	(0.8)	26.2	(0.6)	21.9	(0.6)	10.3	(0.5)	2.1	(0.2)
Newfoundland and Labrador	6.5	(1.6)	14.4	(2.1)	23.0	(2.5)	23.3	(2.7)	20.6	(2.4)	9.3	(1.9)	U‡	(1.0)
Prince Edward Island	U‡	(3.9)	14.4‡	(3.4)	21.0	(4.1)	26.4	(4.6)	19.1‡	(3.5)	U‡	(3.1)	U‡	(1.5)
Nova Scotia	6.9	(1.2)	14.2	(1.7)	22.3	(2.0)	26.2	(2.2)	20.1	(2.0)	8.3	(1.5)	U‡	(0.8)
New Brunswick	11.1	(1.3)	17.3	(1.9)	25.2	(2.2)	22.1	(2.5)	15.6	(2.2)	7.3	(1.7)	U‡	(0.8)
Quebec	4.5	(0.7)	11.4	(0.9)	22.6	(1.4)	29.6	(1.3)	21.9	(1.2)	8.4	(0.9)	1.5	(0.4)
Ontario	4.8	(0.7)	12.2	(1.2)	21.1	(1.5)	25.1	(1.4)	22.9	(1.3)	11.8	(1.2)	2.2	(0.5)
Manitoba	7.3	(0.8)	17.5	(1.5)	23.5	(1.6)	27.6	(1.7)	16.5	(1.4)	6.3	(1.0)	1.3‡	(0.4)
Saskatchewan	6.6	(1.1)	15.6	(1.5)	26.6	(1.6)	26.0	(1.9)	18.0	(1.6)	6.0	(1.2)	U‡	(0.7)
Alberta	4.6	(1.0)	11.3	(1.3)	20.3	(1.7)	25.4	(1.7)	23.6	(1.6)	11.5	(1.3)	3.3	(0.8)
British Columbia	6.7	(1.0)	12.7	(1.2)	20.5	(1.9)	25.9	(1.8)	21.7	(1.8)	10.4	(1.3)	2.2‡	(0.6)

‡ There are fewer than 30 observations.
U Too unreliable to be published.

Table B.1.10b

Proportion of boys and girls who performed below Level 2, at Level 2 or above, and at Levels 5 and 6: READING

	Canada and provinces	Girls		Boys		Difference (G–B)	
		%	Standard error	%	Standard error	Difference	Standard error
Below Level 2							
	Canada	9.6	(0.5)	17.8	(0.7)	-8.2*	(0.8)
	Newfoundland and Labrador	9.9	(1.7)	20.9	(2.4)	-11.0*	(2.9)
	Prince Edward Island	13.2	(3.1)	23.4	(4.0)	-10.2*	(4.7)
	Nova Scotia	9.4	(1.3)	21.1	(1.9)	-11.7*	(2.1)
	New Brunswick	15.7**	(1.7)	28.5**	(2.0)	-12.8*	(2.5)
	Quebec	8.8	(1.0)	15.9	(1.3)	-7.1*	(1.3)
	Ontario	9.3	(1.0)	17.0	(1.4)	-7.7*	(1.4)
	Manitoba	14.3**	(1.7)	24.8**	(1.6)	-10.5*	(2.0)
	Saskatchewan	11.1	(1.2)	22.2**	(1.8)	-11.1*	(2.0)
	Alberta	7.9	(1.2)	15.9	(1.6)	-8.0*	(1.7)
	British Columbia	10.7	(1.2)	19.4	(1.6)	-8.7*	(1.6)
Level 2 or above							
	Canada	90.4	(0.5)	82.2	(0.7)	8.2*	(0.8)
	Newfoundland and Labrador	90.1	(1.7)	79.1	(2.4)	11.0*	(2.9)
	Prince Edward Island	86.8	(3.1)	76.6	(4.0)	10.2*	(4.7)
	Nova Scotia	90.6	(1.3)	78.9	(1.9)	11.7*	(2.1)
	New Brunswick	84.3**	(1.7)	71.5**	(2.0)	12.8*	(2.5)
	Quebec	91.2	(1.0)	84.1	(1.3)	7.1*	(1.3)
	Ontario	90.7	(1.0)	83.0	(1.4)	7.7*	(1.4)
	Manitoba	85.7**	(1.7)	75.2**	(1.6)	10.5*	(2.0)
	Saskatchewan	88.9	(1.2)	77.8**	(1.8)	11.1*	(2.0)
	Alberta	92.1	(1.2)	84.1	(1.6)	8.0*	(1.7)
	British Columbia	89.3	(1.2)	80.6	(1.6)	8.7*	(1.6)
Levels 5 and 6							
	Canada	17.6	(0.7)	12.4	(0.6)	5.3*	(0.8)
	Newfoundland and Labrador	12.9**	(1.9)	12.2	(2.1)	0.7	(2.9)
	Prince Edward Island	13.7	(3.4)	10.1	(2.9)	3.6	(4.6)
	Nova Scotia	17.3	(2.2)	10.4	(1.7)	6.9*	(2.3)
	New Brunswick	9.9**	(1.7)	8.7**	(1.8)	1.3	(2.2)
	Quebec	15.5	(1.5)	9.9**	(1.1)	5.6*	(1.4)
	Ontario	18.8	(1.5)	14.0	(1.3)	4.8*	(1.8)
	Manitoba	11.1**	(1.4)	7.6**	(1.1)	3.4*	(1.6)
	Saskatchewan	10.5**	(1.3)	7.2**	(1.2)	3.3*	(1.5)
	Alberta	21.9**	(1.7)	14.8	(1.8)	7.1*	(1.9)
	British Columbia	19.1	(1.7)	12.6	(1.5)	6.5*	(2.2)

* Significant difference within Canada or province.
** Significant difference compared to Canada.

Table B.1.11

Average scores by gender: READING

Canada, provinces, and OECD average	Girls		Boys		Difference (G–B)	
	Average	Standard error	Average	Standard error	Difference	Standard error
Canada	**535**	**(2.0)**	**506**	**(2.1)**	**29***	**(2.1)**
Newfoundland and Labrador	525	(5.3)	499	(6.0)	26*	(7.3)
Prince Edward Island	518	(8.7)	487	(12.1)	31*	(11.9)
Nova Scotia	535	(4.2)	495**	(5.0)	40*	(5.4)
New Brunswick	506**	(4.5)	472**	(4.9)	34*	(6.3)
Quebec	534	(4.2)	505	(3.4)	29*	(3.5)
Ontario	537	(3.7)	511	(4.4)	26*	(4.1)
Manitoba	508**	(4.8)	482**	(3.7)	26*	(5.3)
Saskatchewan	515**	(3.3)	484**	(3.9)	31*	(4.1)
Alberta	548**	(4.3)	516**	(5.1)	32*	(4.0)
British Columbia	536	(4.9)	503	(5.0)	33*	(4.8)
OECD average	**502****	**(0.5)**	**472****	**(0.5)**	**30***	**(0.6)**

* Significant difference within Canada, province, or OECD.
** Significant difference compared to Canada.

Table B.1.12

Average scores by gender: READING BY COGNITIVE PROCESS SUBSCALES

Cognitive process subscale	Canada and provinces	Girls		Boys		Difference (G–B)	
		Average	Standard error	Average	Standard error	Difference	Standard error
Locate information	Canada	531	(2.6)	503	(2.8)	28*	(2.8)
	Newfoundland and Labrador	517	(10.6)	494	(9.5)	24*	(8.0)
	Prince Edward Island	518	(17.9)	485	(18.8)	33*	(13.4)
	Nova Scotia	529	(7.7)	492	(7.7)	36*	(5.6)
	New Brunswick	506**	(9.0)	473**	(8.4)	33*	(7.2)
	Quebec	532	(5.5)	505	(5.1)	27*	(5.0)
	Ontario	532	(4.1)	507	(5.1)	25*	(4.8)
	Manitoba	510**	(7.5)	481**	(6.5)	28*	(5.7)
	Saskatchewan	513**	(8.0)	482**	(5.9)	31*	(5.4)
	Alberta	543**	(6.1)	512	(5.8)	30*	(5.2)
	British Columbia	533	(5.8)	502	(6.0)	31*	(4.7)
Understand	Canada	534	(2.2)	506	(2.4)	28*	(2.6)
	Newfoundland and Labrador	522	(6.1)	499	(7.5)	23*	(7.5)
	Prince Edward Island	511**	(9.6)	485	(10.9)	27*	(12.4)
	Nova Scotia	532	(4.2)	491**	(5.7)	41*	(5.5)
	New Brunswick	500**	(5.7)	466**	(6.3)	34*	(6.6)
	Quebec	530	(4.5)	502	(3.8)	28*	(4.0)
	Ontario	540**	(4.1)	514**	(4.7)	26*	(4.6)
	Manitoba	504**	(4.5)	477**	(4.1)	27*	(5.4)
	Saskatchewan	514**	(4.0)	483**	(3.6)	31*	(4.4)
	Alberta	545**	(4.6)	515	(5.8)	30*	(4.8)
	British Columbia	533	(5.2)	501	(5.7)	32*	(5.2)
Evaluate and reflect	Canada	541	(2.5)	514	(2.8)	26*	(2.9)
	Newfoundland and Labrador	528	(9.2)	507	(8.5)	20*	(8.8)
	Prince Edward Island	516	(14.8)	491	(17.5)	25	(14.6)
	Nova Scotia	532	(6.7)	496**	(7.5)	36*	(6.3)
	New Brunswick	511**	(6.6)	480**	(6.8)	31*	(6.6)
	Quebec	543	(5.0)	516	(4.5)	27*	(5.0)
	Ontario	545	(4.4)	521**	(5.1)	23*	(5.1)
	Manitoba	504**	(6.0)	483**	(5.5)	22*	(6.5)
	Saskatchewan	511**	(5.9)	481**	(5.8)	30*	(5.5)
	Alberta	552	(6.9)	523	(6.3)	29*	(5.0)
	British Columbia	540	(7.0)	510	(7.2)	30*	(6.6)

* Significant difference within Canada or province.
** Significant difference compared to Canada.

Table B.1.13

Average scores by gender: READING BY TEXT STRUCTURE SUBSCALES

Text structure subscale	Canada and provinces	Girls		Boys		Difference (G–B)	
		Average	Standard error	Average	Standard error	Difference	Standard error
Single text	Canada	536	(2.2)	505	(2.4)	31*	(2.6)
	Newfoundland and Labrador	525	(6.3)	498	(7.0)	27*	(7.5)
	Prince Edward Island	513**	(10.7)	481	(13.7)	32*	(13.2)
	Nova Scotia	534	(5.3)	490**	(6.1)	44*	(5.7)
	New Brunswick	502**	(5.1)	465**	(6.0)	38*	(6.6)
	Quebec	530	(4.6)	500	(3.9)	30*	(4.4)
	Ontario	545**	(4.2)	515**	(4.7)	30*	(4.6)
	Manitoba	506**	(5.2)	475**	(5.0)	31*	(5.5)
	Saskatchewan	514**	(3.9)	481**	(4.7)	33*	(4.1)
	Alberta	545	(5.1)	513	(5.4)	32*	(4.8)
	British Columbia	534	(5.1)	500	(6.0)	34*	(5.3)
Multiple text	Canada	535	(2.1)	509	(2.4)	25*	(2.2)
	Newfoundland and Labrador	520**	(6.0)	501	(6.8)	20*	(7.1)
	Prince Edward Island	515	(10.4)	492	(12.1)	23	(12.4)
	Nova Scotia	534	(4.8)	498	(6.2)	36*	(5.3)
	New Brunswick	506**	(6.1)	478**	(6.5)	29*	(6.3)
	Quebec	538	(4.4)	513	(3.9)	25*	(3.8)
	Ontario	535	(3.8)	512	(4.5)	23*	(4.3)
	Manitoba	505**	(4.8)	482**	(4.2)	23*	(5.5)
	Saskatchewan	510**	(3.3)	483**	(4.1)	27*	(4.3)
	Alberta	548**	(5.0)	519	(5.7)	28*	(4.2)
	British Columbia	536	(5.2)	508	(5.4)	28*	(4.8)

* Significant difference within Canada or province.
** Significant difference compared to Canada.

Table B.1.14a

Comparisons of performance, PISA 2000, 2003, 2006, 2009, 2012, 2015, and 2018: READING

Canada, provinces, and OECD average	2000		2003		2006		2009		2012		2015		2018	
	Average	Standard error	Average	Standard error	Average	Standard error	Average	Standard error	Average	Standard error	Average	Standard error	Average	Standard error
Canada	**534**	**(1.6)**	**528**	**(5.6)**	**527**	**(5.5)**	**524**	**(5.2)**	**523**	**(6.2)**	**527**	**(7.2)**	**520***	**(4.4)**
Newfoundland and Labrador	517	(2.8)	521	(6.2)	514	(5.9)	506	(6.1)	503	(7.0)	505	(7.6)	512	(5.9)
Prince Edward Island	517	(2.4)	495*	(5.8)	497*	(5.7)	486*	(5.5)	490*	(6.5)	515	(9.1)	503	(9.2)
Nova Scotia	521	(2.3)	513	(5.8)	505*	(6.1)	516	(5.6)	508	(6.7)	517	(8.4)	516	(5.6)
New Brunswick	501	(1.8)	503	(5.6)	497	(5.5)	499	(5.5)	497	(6.5)	505	(8.6)	489*	(5.3)
Quebec	536	(3.0)	525	(6.8)	522	(7.1)	522*	(5.8)	520*	(6.9)	532	(8.3)	519*	(5.4)
Ontario	533	(3.3)	530	(6.4)	534	(6.8)	531	(5.8)	528	(7.4)	527	(8.1)	524	(5.4)
Manitoba	529	(3.5)	520	(6.3)	516	(6.1)	495*	(6.1)	495*	(6.8)	498*	(8.4)	494*	(5.3)
Saskatchewan	529	(2.7)	512*	(6.8)	507*	(6.5)	504*	(6.0)	505*	(6.5)	496*	(7.7)	499*	(5.0)
Alberta	550	(3.3)	543	(6.8)	535*	(6.5)	533*	(6.8)	525*	(7.2)	533	(8.6)	532*	(5.9)
British Columbia	538	(2.9)	535	(5.9)	528	(7.5)	525	(6.5)	535	(7.4)	536	(8.8)	519*	(6.0)
OECD average	**500**	**(0.6)**	**494**	**(5.4)**	**492**	**(5.0)**	**493**	**(5.0)**	**496**	**(5.9)**	**493**	**(7.2)**	**487***	**(4.4)**

* Significant difference compared with PISA 2000.
Note: The linkage error is incorporated into the standard error for 2003, 2006, 2009, 2012, 2015, and 2018. Also, for some provinces, the standard errors from 2000 to 2003, to 2006, and to 2009 differ from those in the previous PISA reports on trend results. These differences are due to the change of the method used by the OECD to compute the linkage error. The composition of the OECD countries varies from cycle to cycle.

Table B.1.14b

Comparisons of performance, PISA 2009, 2012, 2015, and 2018: READING

Canada, provinces, and OECD average	2009		2012		2015		2018	
	Average	Standard error	Average	Standard error	Average	Standard error	Average	Standard error
Canada	**524**	**(1.5)**	**523**	**(3.2)**	**527**	**(4.1)**	**520**	**(4.0)**
Newfoundland and Labrador	506	(3.7)	503	(4.5)	505	(4.9)	512	(5.6)
Prince Edward Island	486	(2.4)	490	(3.7)	515*	(7.0)	503	(9.0)
Nova Scotia	516	(2.7)	508	(4.0)	517	(6.0)	516	(5.2)
New Brunswick	499	(2.5)	497	(3.7)	505	(6.3)	489	(5.0)
Quebec	522	(3.1)	520	(4.4)	532	(5.8)	519	(5.0)
Ontario	531	(3.0)	528	(5.1)	527	(5.6)	524	(5.0)
Manitoba	495	(3.6)	495	(4.2)	498	(6.0)	494	(4.9)
Saskatchewan	504	(3.3)	505	(3.8)	496	(4.9)	499	(4.6)
Alberta	533	(4.6)	525	(4.8)	533	(6.2)	532	(5.5)
British Columbia	525	(4.2)	535	(5.2)	536	(6.5)	519	(5.7)
OECD average	**493**	**(0.5)**	**496**	**(3.3)**	**493**	**(4.2)**	**487**	**(4.0)**

* Significant difference compared with PISA 2009.
Note: The linkage error is incorporated into the standard error for 2012, 2015, and 2018. The composition of the OECD countries varies from cycle to cycle.

Table B.1.15

Proportion of students who performed below Level 2 and at Levels 5 and 6, in PISA 2009 and 2018: READING

Canada and provinces	Below Level 2						Levels 5 and 6					
	2009		2018		Difference 2009–2018		2009		2018		Difference 2009–2018	
	%	Standard error	%	Standard error	Difference	Standard error	%	Standard error	%	Standard error	Difference	Standard error
Canada	10.3	(0.5)	13.8	(0.5)	3.5*	(0.9)	12.8	(0.5)	15.0	(0.6)	2.2	(1.2)
Newfoundland and Labrador	13.7	(1.6)	15.3	(1.6)	1.6	(2.3)	8.5	(1.1)	12.6	(1.3)	4.1*	(2.0)
Prince Edward Island	21.2	(1.1)	18.4	(2.6)	-2.8	(2.9)	6.9	(0.6)	11.9	(2.2)	5.0*	(2.5)
Nova Scotia	11.1	(1.1)	15.1	(1.3)	4.0*	(1.8)	10.2	(0.9)	14.0	(1.6)	3.7	(2.1)
New Brunswick	16.2	(1.0)	22.0	(1.4)	5.8*	(1.8)	7.7	(0.8)	9.3	(1.3)	1.7	(1.9)
Quebec	10.4	(1.0)	12.3	(0.9)	1.8	(1.5)	10.7	(0.8)	12.8	(1.1)	2.1	(1.7)
Ontario	8.4	(0.8)	13.2	(1.0)	4.8*	(1.4)	14.2	(1.0)	16.4	(1.1)	2.1	(1.8)
Manitoba	17.6	(1.4)	19.7	(1.3)	2.1	(2.0)	8.1	(0.8)	9.3	(1.0)	1.2	(1.6)
Saskatchewan	15.4	(1.5)	16.8	(1.1)	1.4	(1.9)	8.7	(1.1)	8.8	(1.0)	0.1	(1.8)
Alberta	10.0	(1.2)	11.9	(1.2)	1.9	(1.7)	16.2	(1.6)	18.3	(1.4)	2.1	(2.4)
British Columbia	10.7	(1.1)	15.1	(1.2)	4.4*	(1.7)	13.3	(1.2)	15.8	(1.2)	2.4	(1.9)

* Significant difference within Canada or province.

Table B.1.16

Gender differences in student performance, PISA 2009 and 2018: READING

Canada and provinces	2009		2018	
	Gender difference (G–B)	Standard error	Gender difference (G–B)	Standard error
Canada	34*	(1.9)	29*	(2.1)
Newfoundland and Labrador	45*	(5.3)	26*	(7.3)
Prince Edward Island	48*	(5.5)	31*	(11.9)
Nova Scotia	29*	(4.7)	40*	(5.4)
New Brunswick	32*	(4.4)	34*	(6.3)
Quebec	31*	(3.9)	29*	(3.5)
Ontario	36*	(3.9)	26*	(4.1)
Manitoba	32*	(7.2)	26*	(5.3)
Saskatchewan	37*	(4.6)	31*	(4.1)
Alberta	32*	(4.9)	32*	(4.0)
British Columbia	36*	(4.5)	33*	(4.8)

* Significant difference within Canada or province.

Table B.2.1a

Average index of economic, social, and cultural status (ESCS)

Country or province	All students		Bottom quarter		Second quarter		Third quarter		Top quarter	
	Score	Standard error	Score	Standard error	Score	Standard error	Score	Standard error	Score	Standard error
Iceland	0.55	(0.01)	-0.57	(0.02)	0.41	(0.01)	0.93	(0.00)	1.42	(0.01)
Norway	0.54	(0.02)	-0.57	(0.02)	0.39	(0.00)	0.91	(0.00)	1.45	(0.01)
Denmark	0.52	(0.01)	-0.54	(0.01)	0.40	(0.00)	0.88	(0.00)	1.34	(0.01)
Ontario	**0.48**	**(0.03)**	**-0.62**	**(0.02)**	**0.29**	**(0.01)**	**0.85**	**(0.01)**	**1.40**	**(0.01)**
Alberta	**0.46**	**(0.03)**	**-0.63**	**(0.02)**	**0.23**	**(0.01)**	**0.81**	**(0.01)**	**1.42**	**(0.02)**
British Columbia	**0.43**	**(0.04)**	**-0.66**	**(0.02)**	**0.23**	**(0.01)**	**0.80**	**(0.01)**	**1.36**	**(0.01)**
Canada	**0.42**	**(0.01)**	**-0.69**	**(0.01)**	**0.21**	**(0.00)**	**0.78**	**(0.00)**	**1.37**	**(0.01)**
Newfoundland and Labrador	**0.38**	**(0.04)**	**-0.74**	**(0.04)**	**0.13**	**(0.01)**	**0.73**	**(0.01)**	**1.38**	**(0.03)**
Quebec	**0.37**	**(0.02)**	**-0.71**	**(0.02)**	**0.17**	**(0.01)**	**0.73**	**(0.00)**	**1.30**	**(0.01)**
Sweden	0.36	(0.03)	-0.87	(0.02)	0.19	(0.01)	0.79	(0.00)	1.33	(0.01)
Israel	0.35	(0.03)	-0.97	(0.02)	0.13	(0.01)	0.78	(0.00)	1.44	(0.02)
Nova Scotia	**0.33**	**(0.03)**	**-0.77**	**(0.02)**	**0.13**	**(0.01)**	**0.68**	**(0.01)**	**1.27**	**(0.02)**
Prince Edward Island	**0.32**	**(0.08)**	**-0.72**	**(0.04)**	**0.08**	**(0.03)**	**0.66**	**(0.02)**	**1.27**	**(0.04)**
Australia	0.32	(0.01)	-0.91	(0.01)	0.07	(0.00)	0.75	(0.00)	1.36	(0.01)
Cyprus	0.30	(0.01)	-0.94	(0.02)	0.04	(0.02)	0.73	(0.01)	1.37	(0.01)
Finland	0.30	(0.02)	-0.78	(0.01)	0.06	(0.01)	0.69	(0.00)	1.21	(0.01)
Saskatchewan	**0.29**	**(0.02)**	**-0.80**	**(0.02)**	**0.02**	**(0.01)**	**0.62**	**(0.01)**	**1.33**	**(0.02)**
Qatar	0.28	(0.01)	-0.86	(0.01)	0.18	(0.00)	0.62	(0.00)	1.19	(0.01)
Netherlands	0.28	(0.02)	-0.91	(0.02)	0.07	(0.01)	0.69	(0.01)	1.26	(0.01)
United Arab Emirates	0.28	(0.02)	-0.92	(0.01)	0.12	(0.00)	0.66	(0.00)	1.25	(0.01)
United Kingdom	0.27	(0.03)	-0.95	(0.01)	0.00	(0.00)	0.67	(0.00)	1.37	(0.01)
New Brunswick	**0.24**	**(0.03)**	**-0.90**	**(0.03)**	**-0.03**	**(0.01)**	**0.62**	**(0.01)**	**1.26**	**(0.03)**
Manitoba	**0.17**	**(0.03)**	**-0.98**	**(0.02)**	**-0.12**	**(0.01)**	**0.54**	**(0.01)**	**1.25**	**(0.02)**
Singapore	0.17	(0.01)	-1.10	(0.01)	-0.06	(0.01)	0.62	(0.00)	1.22	(0.01)
New Zealand	0.16	(0.02)	-1.17	(0.01)	-0.10	(0.01)	0.63	(0.01)	1.29	(0.01)
Russian Federation	0.13	(0.02)	-0.85	(0.01)	-0.08	(0.00)	0.46	(0.00)	1.00	(0.01)
Ireland	0.13	(0.02)	-1.01	(0.01)	-0.16	(0.00)	0.50	(0.00)	1.19	(0.01)
United States	0.11	(0.04)	-1.28	(0.03)	-0.17	(0.01)	0.57	(0.01)	1.31	(0.01)
Estonia	0.08	(0.02)	-0.98	(0.01)	-0.20	(0.01)	0.44	(0.01)	1.07	(0.01)
Slovenia	0.07	(0.01)	-0.97	(0.01)	-0.24	(0.01)	0.42	(0.01)	1.07	(0.01)
Korea	0.07	(0.02)	-0.97	(0.01)	-0.13	(0.00)	0.39	(0.00)	1.00	(0.01)
Belgium	0.07	(0.02)	-1.17	(0.01)	-0.22	(0.01)	0.50	(0.00)	1.18	(0.01)
Malta	0.06	(0.01)	-1.19	(0.01)	-0.29	(0.01)	0.47	(0.01)	1.26	(0.01)
Lithuania	0.03	(0.01)	-1.13	(0.01)	-0.28	(0.01)	0.46	(0.00)	1.06	(0.01)
Austria	0.01	(0.02)	-1.10	(0.02)	-0.29	(0.01)	0.31	(0.01)	1.14	(0.01)
Luxembourg	0.01	(0.01)	-1.56	(0.01)	-0.32	(0.01)	0.56	(0.01)	1.37	(0.01)
Latvia	0.00	(0.01)	-1.11	(0.01)	-0.29	(0.01)	0.39	(0.01)	1.01	(0.01)
Switzerland	-0.01	(0.03)	-1.25	(0.02)	-0.29	(0.01)	0.39	(0.01)	1.10	(0.01)
France	-0.03	(0.02)	-1.22	(0.02)	-0.30	(0.01)	0.34	(0.00)	1.04	(0.01)
Japan	-0.09	(0.01)	-1.05	(0.01)	-0.31	(0.00)	0.19	(0.00)	0.81	(0.01)
Germany	-0.10	(0.03)	-1.48	(0.02)	-0.41	(0.01)	0.33	(0.01)	1.17	(0.01)
Greece	-0.11	(0.02)	-1.30	(0.01)	-0.45	(0.01)	0.27	(0.01)	1.05	(0.01)
Hungary	-0.12	(0.02)	-1.29	(0.02)	-0.47	(0.01)	0.23	(0.01)	1.06	(0.01)
Spain	-0.12	(0.02)	-1.54	(0.01)	-0.42	(0.00)	0.34	(0.00)	1.12	(0.01)
Belarus	-0.13	(0.02)	-1.14	(0.01)	-0.42	(0.01)	0.23	(0.00)	0.82	(0.01)
Poland	-0.14	(0.02)	-1.16	(0.01)	-0.57	(0.01)	0.14	(0.01)	1.02	(0.01)

Table B.2.1a (cont'd)

Average index of economic, social, and cultural status (ESCS)

Country or province	All students		Bottom quarter		Second quarter		Third quarter		Top quarter	
	Score	Standard error	Score	Standard error	Score	Standard error	Score	Standard error	Score	Standard error
Montenegro	-0.18	(0.01)	-1.29	(0.01)	-0.50	(0.00)	0.15	(0.00)	0.92	(0.01)
Ukraine	-0.20	(0.02)	-1.21	(0.01)	-0.48	(0.01)	0.11	(0.00)	0.76	(0.01)
Czech Republic	-0.21	(0.02)	-1.26	(0.02)	-0.57	(0.00)	0.04	(0.01)	0.95	(0.01)
Slovak Republic	-0.21	(0.02)	-1.36	(0.03)	-0.55	(0.01)	0.12	(0.01)	0.95	(0.01)
Italy	-0.22	(0.02)	-1.37	(0.01)	-0.57	(0.01)	0.07	(0.01)	0.99	(0.01)
Croatia	-0.23	(0.01)	-1.17	(0.01)	-0.57	(0.00)	0.00	(0.01)	0.81	(0.01)
Serbia	-0.24	(0.02)	-1.28	(0.01)	-0.57	(0.00)	0.07	(0.01)	0.83	(0.01)
Bulgaria	-0.26	(0.04)	-1.57	(0.04)	-0.60	(0.01)	0.18	(0.01)	0.97	(0.01)
Brunei Darussalam	-0.26	(0.01)	-1.50	(0.01)	-0.60	(0.00)	0.08	(0.00)	0.96	(0.01)
Chinese Taipei	-0.32	(0.02)	-1.50	(0.01)	-0.64	(0.01)	0.05	(0.01)	0.83	(0.01)
Republic of North Macedonia	-0.32	(0.01)	-1.47	(0.01)	-0.65	(0.01)	0.02	(0.01)	0.81	(0.01)
Portugal	-0.39	(0.03)	-1.91	(0.01)	-0.84	(0.01)	0.11	(0.01)	1.09	(0.01)
Georgia	-0.41	(0.02)	-1.59	(0.01)	-0.75	(0.01)	-0.08	(0.01)	0.79	(0.01)
Kazakhstan	-0.44	(0.02)	-1.53	(0.01)	-0.77	(0.00)	-0.11	(0.00)	0.65	(0.01)
Kosovo	-0.46	(0.02)	-1.58	(0.01)	-0.78	(0.01)	-0.17	(0.01)	0.68	(0.01)
Romania	-0.47	(0.05)	-1.64	(0.03)	-0.85	(0.00)	-0.19	(0.01)	0.83	(0.02)
Hong Kong (China)	-0.51	(0.03)	-1.81	(0.02)	-0.90	(0.01)	-0.18	(0.01)	0.85	(0.02)
Macao (China)	-0.52	(0.01)	-1.65	(0.01)	-0.86	(0.01)	-0.23	(0.01)	0.67	(0.01)
Baku (Azerbaijan)	-0.56	(0.03)	-1.69	(0.01)	-0.93	(0.01)	-0.23	(0.01)	0.63	(0.01)
Bosnia and Herzegovina	-0.56	(0.02)	-1.53	(0.01)	-0.91	(0.00)	-0.36	(0.00)	0.57	(0.01)
Lebanon	-0.57	(0.03)	-2.11	(0.02)	-0.90	(0.01)	-0.09	(0.01)	0.83	(0.02)
Chile	-0.58	(0.03)	-1.86	(0.02)	-0.99	(0.00)	-0.26	(0.01)	0.78	(0.01)
Moldova	-0.59	(0.02)	-1.74	(0.01)	-0.97	(0.00)	-0.30	(0.01)	0.63	(0.01)
Jordan	-0.66	(0.03)	-2.13	(0.02)	-1.03	(0.01)	-0.18	(0.01)	0.69	(0.02)
B-S-J-Z (China)	-0.67	(0.03)	-1.98	(0.02)	-1.14	(0.01)	-0.30	(0.01)	0.77	(0.01)
Saudi Arabia	-0.70	(0.04)	-2.29	(0.02)	-1.11	(0.01)	-0.17	(0.01)	0.76	(0.01)
Malaysia	-0.77	(0.03)	-2.03	(0.02)	-1.23	(0.00)	-0.46	(0.01)	0.66	(0.01)
Albania	-0.87	(0.03)	-2.07	(0.01)	-1.26	(0.00)	-0.57	(0.01)	0.42	(0.01)
Argentina	-0.95	(0.03)	-2.50	(0.02)	-1.38	(0.01)	-0.49	(0.01)	0.56	(0.01)
Costa Rica	-0.96	(0.04)	-2.71	(0.02)	-1.44	(0.01)	-0.42	(0.01)	0.72	(0.02)
Uruguay	-0.99	(0.04)	-2.43	(0.02)	-1.43	(0.01)	-0.66	(0.01)	0.56	(0.03)
Dominican Republic	-1.06	(0.04)	-2.48	(0.02)	-1.45	(0.01)	-0.72	(0.01)	0.39	(0.02)
Panama	-1.09	(0.04)	-2.86	(0.03)	-1.56	(0.01)	-0.55	(0.01)	0.60	(0.02)
Brazil	-1.10	(0.03)	-2.72	(0.02)	-1.50	(0.01)	-0.65	(0.01)	0.46	(0.02)
Peru	-1.12	(0.04)	-2.60	(0.02)	-1.52	(0.01)	-0.78	(0.01)	0.41	(0.02)
Turkey	-1.15	(0.04)	-2.59	(0.01)	-1.65	(0.00)	-0.82	(0.01)	0.47	(0.04)
Colombia	-1.19	(0.04)	-2.81	(0.02)	-1.61	(0.01)	-0.78	(0.01)	0.45	(0.03)
Mexico	-1.19	(0.04)	-2.76	(0.03)	-1.70	(0.01)	-0.77	(0.01)	0.48	(0.02)
Thailand	-1.30	(0.04)	-2.70	(0.02)	-1.77	(0.01)	-1.01	(0.01)	0.29	(0.02)
Philippines	-1.42	(0.04)	-2.86	(0.02)	-1.77	(0.01)	-1.08	(0.01)	0.03	(0.03)
Indonesia	-1.57	(0.05)	-2.94	(0.02)	-1.99	(0.01)	-1.24	(0.01)	-0.10	(0.02)
Vietnam	-1.62	(0.05)	-2.89	(0.03)	-2.05	(0.01)	-1.38	(0.01)	-0.16	(0.03)
Morocco	-1.89	(0.06)	-3.62	(0.02)	-2.51	(0.01)	-1.43	(0.01)	0.01	(0.03)
OECD average	**-0.03**	**(0.00)**	**-1.25**	**(0.00)**	**-0.33**	**(0.00)**	**0.35**	**0.00**	**1.10**	**(0.00)**

Note: Countries and provinces have been sorted in descending order by ESCS score. B-S-J-Z (China) represents Beijing, Shanghai, Jiangsu, and Zhejiang. See OECD 2019b, p. 21, for a note regarding Cyprus.

Table B.2.1b

Average scores by index of economic, social, and cultural status (ESCS): READING

Country or province	Bottom quarter		Second quarter		Third quarter		Top quarter		Difference (top quarter–bottom quarter)		Change in the average score per one (integer) unit change in the ESCS index		Explained variance in student performance (r^2 x 100)	
	Average	Standard error	Average	Standard error	Average	Standard error	Average	Standard error	Difference	Standard error	Difference	Standard error	%	Standard error
Macao (China)	511	(2.5)	524	(3.0)	524	(3.2)	542	(3.1)	31*	(4.1)	13*	(1.6)	1.7	(0.4)
Kosovo	339	(2.2)	347	(2.1)	350	(2.1)	378	(2.6)	40*	(3.5)	17*	(1.3)	4.9	(0.7)
Kazakhstan	368	(1.8)	380	(1.6)	392	(1.8)	408	(2.8)	40*	(3.1)	19*	(1.4)	4.3	(0.6)
Baku (Azerbaijan)	371	(2.2)	385	(2.1)	393	(2.7)	412	(5.9)	41*	(5.9)	17*	(2.4)	4.3	(1.1)
Morocco	340	(3.1)	351	(3.3)	357	(3.6)	391	(4.1)	51*	(4.5)	14*	(1.2)	7.1	(1.2)
Indonesia	350	(3.1)	362	(2.9)	371	(3.2)	402	(5.9)	52*	(6.9)	19*	(2.2)	7.8	(1.7)
Montenegro	396	(2.1)	411	(1.9)	428	(2.3)	451	(2.1)	55*	(3.0)	24*	(1.3)	5.8	(0.6)
Newfoundland and Labrador	**491**	**(8.1)**	**514**	**(7.5)**	**528**	**(7.0)**	**546**	**(7.9)**	**55***	**(9.7)**	**26***	**(4.4)**	**5.1**	**(1.8)**
Bosnia and Herzegovina	373	(2.7)	402	(3.8)	408	(3.1)	431	(4.4)	58*	(4.6)	26*	(1.9)	7.3	(1.0)
Manitoba	**468**	**(5.6)**	**487**	**(5.2)**	**503**	**(4.7)**	**526**	**(5.7)**	**58***	**(8.0)**	**24***	**(3.2)**	**4.6**	**(1.2)**
Hong Kong (China)	497	(3.7)	523	(3.4)	529	(3.4)	555	(4.7)	59*	(6.0)	21*	(2.2)	5.1	(1.1)
Estonia	497	(3.7)	509	(3.1)	532	(2.5)	558	(2.9)	61*	(4.6)	29*	(2.1)	6.2	(0.8)
Albania	377	(2.5)	402	(2.3)	406	(2.7)	438	(3.9)	61*	(4.7)	23*	(1.8)	7.8	(1.1)
British Columbia	**483**	**(6.0)**	**515**	**(5.0)**	**541**	**(5.9)**	**544**	**(8.1)**	**61***	**(9.9)**	**31***	**(4.3)**	**5.7**	**(1.5)**
Ontario	**492**	**(4.7)**	**518**	**(4.6)**	**542**	**(4.8)**	**555**	**(4.5)**	**63***	**(5.9)**	**27***	**(2.9)**	**4.8**	**(0.9)**
Croatia	455	(3.2)	463	(3.3)	480	(3.1)	518	(3.5)	63*	(3.9)	32*	(1.8)	7.7	(0.8)
New Brunswick	**460**	**(6.1)**	**477**	**(6.1)**	**500**	**(6.2)**	**524**	**(7.2)**	**63***	**(10.2)**	**29***	**(4.4)**	**5.6**	**(1.7)**
Nova Scotia	**480**	**(6.0)**	**510**	**(6.0)**	**537**	**(5.8)**	**543**	**(7.6)**	**63***	**(7.7)**	**31***	**(4.2)**	**6.1**	**(1.4)**
Jordan	390	(4.3)	411	(3.3)	427	(3.3)	453	(4.1)	64*	(5.6)	21*	(1.9)	7.7	(1.2)
Dominican Republic	319	(2.5)	333	(3.1)	336	(3.4)	383	(5.7)	65*	(6.3)	22*	(2.1)	8.9	(1.6)
Latvia	447	(2.8)	470	(2.9)	490	(3.1)	512	(3.0)	65*	(3.9)	29*	(1.7)	7.2	(0.8)
Russian Federation	443	(4.4)	469	(3.1)	493	(3.2)	510	(4.2)	67*	(5.4)	34*	(2.6)	7.3	(1.0)
Canada	**485**	**(2.3)**	**512**	**(2.3)**	**539**	**(2.6)**	**553**	**(2.5)**	**68***	**(3.3)**	**32***	**(1.6)**	**6.7**	**(0.6)**
Georgia	350	(2.9)	367	(3.4)	386	(2.6)	418	(3.8)	68*	(4.5)	28*	(1.8)	9.4	(1.1)
Thailand	369	(2.4)	377	(2.8)	388	(3.5)	438	(5.6)	69*	(6.0)	24*	(2.0)	12.0	(2.0)
Cyprus	389	(2.9)	416	(2.6)	439	(2.8)	459	(3.0)	69*	(4.6)	28*	(1.7)	6.8	(0.8)
Quebec	**482**	**(4.4)**	**510**	**(4.1)**	**538**	**(4.6)**	**554**	**(4.8)**	**71***	**(6.1)**	**36***	**(2.9)**	**9.4**	**(1.4)**
Japan	465	(4.2)	499	(3.2)	517	(3.4)	537	(3.7)	72*	(5.6)	38*	(2.8)	8.0	(1.2)
Iceland	437	(3.6)	463	(4.0)	495	(3.4)	510	(4.0)	72*	(5.7)	33*	(2.7)	6.6	(1.0)
Serbia	407	(4.2)	429	(4.1)	445	(3.7)	480	(4.6)	73*	(5.8)	33*	(2.5)	7.8	(1.2)
Norway	459	(3.5)	496	(3.1)	520	(2.8)	532	(3.4)	73*	(4.6)	35*	(2.0)	7.5	(0.9)
Saskatchewan	**465**	**(5.3)**	**491**	**(4.4)**	**510**	**(5.0)**	**539**	**(4.8)**	**74***	**(6.8)**	**33***	**(3.1)**	**8.7**	**(1.5)**
Saudi Arabia	362	(4.4)	392	(3.5)	409	(2.8)	437	(4.0)	74*	(6.2)	24*	(1.9)	11.5	(1.7)
Ireland	482	(3.0)	511	(3.0)	527	(2.8)	557	(3.0)	75*	(4.2)	34*	(1.7)	10.7	(1.1)
Italy	436	(3.5)	474	(2.8)	487	(3.2)	511	(3.9)	75*	(5.1)	32*	(1.9)	8.9	(1.0)
Korea	477	(3.9)	503	(3.6)	525	(3.8)	552	(4.3)	75*	(5.7)	37*	(2.8)	8.0	(1.1)
Turkey	437	(3.8)	452	(3.1)	461	(3.0)	513	(4.0)	76*	(6.0)	25*	(1.8)	11.4	(1.8)
Alberta	**492**	**(6.6)**	**521**	**(6.1)**	**553**	**(4.4)**	**568**	**(6.4)**	**76***	**(9.3)**	**38***	**(4.0)**	**9.2**	**(1.9)**
Prince Edward Island	**471**	**(13.1)**	**485**	**(13.1)**	**510**	**(10.3)**	**549**	**(11.1)**	**78***	**(16.6)**	**36***	**(9.6)**	**7.9**	**(3.1)**
Denmark	462	(2.7)	493	(2.8)	514	(2.8)	540	(2.8)	78*	(3.7)	38*	(1.8)	9.9	(0.9)
Finland	483	(3.0)	509	(2.6)	533	(3.2)	562	(3.7)	79*	(4.7)	38*	(2.2)	9.2	(1.0)
United Kingdom	471	(3.1)	493	(2.9)	516	(2.8)	550	(3.9)	80*	(4.7)	33*	(1.8)	9.3	(1.0)
Slovenia	462	(2.6)	476	(2.7)	506	(2.9)	541	(3.0)	80*	(3.9)	41*	(1.8)	12.1	(1.0)
Republic of North Macedonia	359	(2.8)	382	(2.8)	397	(3.0)	439	(2.7)	80*	(4.0)	33*	(1.6)	10.2	(0.9)
Mexico	382	(2.8)	413	(3.3)	426	(4.0)	464	(4.9)	82*	(5.7)	25*	(1.7)	13.7	(1.7)

Table B.2.1b (cont'd)

Average scores by index of economic, social, and cultural status (ESCS): READING

Country or province	Bottom quarter		Second quarter		Third quarter		Top quarter		Difference (top quarter–bottom quarter)		Change in the average score per one (integer) unit change in the ESCS index		Explained variance in student performance (r^2 x 100)	
	Average	Standard error	Average	Standard error	Average	Standard error	Average	Standard error	Difference	Standard error	Difference	Standard error	%	Standard error
B-S-J-Z (China)	519	(3.7)	545	(2.7)	558	(2.9)	600	(4.0)	82*	(5.4)	29*	(1.8)	12.6	(1.3)
Costa Rica	392	(2.6)	410	(2.8)	429	(4.5)	476	(4.6)	83*	(4.9)	24*	(1.5)	15.6	(1.6)
Greece	417	(4.1)	444	(3.9)	468	(4.0)	502	(4.2)	84*	(5.2)	35*	(2.1)	10.9	(1.2)
Malta	406	(3.4)	442	(3.5)	460	(3.6)	491	(3.6)	85*	(4.7)	32*	(1.9)	7.6	(0.9)
Colombia	373	(3.5)	398	(4.2)	419	(4.0)	459	(5.2)	86*	(6.5)	26*	(1.8)	13.7	(1.8)
Chile	415	(3.0)	443	(3.4)	455	(3.2)	502	(3.4)	87*	(4.3)	32*	(1.5)	12.7	(1.1)
Philippines	301	(2.1)	330	(2.4)	339	(3.1)	389	(6.3)	88*	(6.4)	30*	(2.2)	18.0	(2.1)
Netherlands	448	(4.8)	470	(4.2)	495	(3.6)	536	(4.0)	88*	(5.9)	39*	(2.5)	10.5	(1.3)
Sweden	460	(4.3)	501	(3.5)	526	(3.6)	549	(4.1)	89*	(5.9)	39*	(2.2)	10.7	(1.2)
Australia	460	(2.3)	490	(2.4)	519	(2.7)	549	(2.3)	89*	(2.8)	38*	(1.2)	10.1	(0.6)
Malaysia	377	(3.0)	401	(3.0)	417	(3.1)	466	(4.8)	89*	(5.6)	33*	(2.0)	16.3	(1.8)
Chinese Taipei	461	(2.9)	492	(2.8)	510	(3.6)	550	(4.3)	89*	(4.8)	37*	(2.0)	11.4	(1.1)
Lithuania	432	(2.6)	465	(2.8)	488	(2.8)	522	(2.3)	89*	(3.5)	40*	(1.6)	13.2	(1.0)
Ukraine	422	(4.6)	456	(3.6)	476	(3.7)	511	(3.7)	90*	(5.7)	45*	(2.5)	14.0	(1.4)
Poland	469	(3.1)	504	(3.1)	518	(3.8)	560	(4.6)	90*	(5.7)	39*	(2.6)	11.6	(1.4)
Qatar	360	(1.4)	395	(1.8)	429	(1.7)	453	(1.8)	93*	(2.3)	38*	(1.1)	8.6	(0.5)
Austria	440	(3.7)	475	(3.3)	496	(3.5)	533	(3.4)	93*	(5.0)	40*	(1.9)	13.0	(1.2)
Portugal	448	(4.1)	480	(3.4)	501	(3.2)	543	(3.2)	95*	(4.7)	31*	(1.4)	13.5	(1.2)
Panama	337	(3.4)	364	(3.1)	379	(3.2)	432	(5.5)	95*	(6.5)	27*	(1.7)	17.0	(1.9)
New Zealand	462	(3.0)	490	(2.8)	525	(3.2)	558	(3.3)	96*	(4.4)	39*	(1.6)	12.9	(1.0)
Brazil	373	(2.3)	397	(2.8)	419	(2.6)	470	(3.8)	97*	(4.4)	30*	(1.3)	14.0	(1.1)
United States	460	(4.6)	488	(4.0)	517	(3.6)	558	(4.7)	99*	(6.3)	36*	(2.1)	12.0	(1.4)
Uruguay	379	(3.6)	414	(3.2)	439	(3.9)	478	(4.1)	99*	(5.7)	33*	(1.7)	16.0	(1.6)
Belarus	423	(3.1)	458	(3.6)	489	(2.5)	525	(3.5)	102*	(4.7)	51*	(2.2)	19.8	(1.5)
Moldova	374	(2.9)	414	(3.2)	433	(3.0)	476	(4.7)	102*	(5.3)	42*	(2.1)	17.3	(1.5)
Argentina	353	(3.6)	387	(3.5)	416	(3.4)	455	(4.1)	102*	(5.4)	34*	(1.6)	17.1	(1.5)
Brunei Darussalam	364	(1.8)	390	(1.9)	414	(2.3)	466	(2.1)	103*	(2.7)	40*	(1.0)	16.0	(0.8)
Lebanon	307	(4.1)	341	(4.5)	362	(5.9)	410	(7.5)	103*	(7.7)	34*	(2.4)	12.2	(1.7)
Singapore	495	(2.7)	535	(2.8)	570	(2.5)	599	(3.4)	104*	(3.8)	43*	(1.5)	13.2	(0.9)
Switzerland	435	(3.8)	469	(3.6)	499	(3.2)	539	(5.4)	104*	(6.6)	43*	(2.3)	15.6	(1.6)
United Arab Emirates	377	(1.6)	414	(2.2)	461	(2.3)	482	(4.0)	105*	(4.1)	43*	(1.7)	11.1	(0.8)
Czech Republic	439	(4.3)	481	(3.2)	498	(3.0)	544	(3.2)	105*	(5.4)	45*	(2.1)	16.5	(1.4)
Bulgaria	369	(4.8)	403	(4.9)	438	(4.5)	475	(5.0)	106*	(6.2)	39*	(2.6)	15.0	(1.6)
Slovak Republic	404	(3.9)	449	(3.1)	468	(3.0)	511	(3.9)	106*	(5.7)	46*	(2.0)	17.5	(1.5)
France	443	(2.7)	474	(3.4)	509	(3.3)	550	(3.9)	107*	(5.0)	47*	(2.0)	17.5	(1.3)
Romania	375	(5.1)	417	(4.7)	437	(4.8)	484	(5.7)	108*	(7.0)	43*	(2.6)	18.1	(2.1)
Belgium	440	(2.8)	476	(3.2)	512	(3.1)	550	(2.2)	109*	(3.1)	46*	(1.3)	17.2	(0.8)
Peru	349	(2.9)	385	(3.0)	410	(3.2)	458	(4.3)	110*	(4.9)	36*	(1.4)	21.5	(1.6)
Germany	450	(4.3)	492	(3.5)	518	(4.0)	564	(4.0)	113*	(5.4)	42*	(1.7)	17.2	(1.4)
Hungary	420	(3.4)	463	(3.2)	489	(3.2)	534	(4.0)	113*	(5.4)	46*	(2.2)	19.1	(1.7)
Israel	407	(4.2)	455	(4.8)	507	(4.1)	529	(4.1)	121*	(5.4)	47*	(1.9)	14.0	(1.0)
Luxembourg	415	(2.3)	445	(2.4)	488	(2.7)	537	(3.0)	122*	(4.1)	40*	(1.2)	17.8	(1.0)
OECD average	**445**	**(0.6)**	**476**	**(0.5)**	**500**	**(0.5)**	**534**	**(0.6)**	**89***	**(0.8)**	**37***	**(0.3)**	**12.0**	**(0.2)**

Note: Countries and provinces have been sorted in ascending order by the difference in score points between the bottom and top quarters. B-S-J-Z (China) represents Beijing, Shanghai, Jiangsu, and Zhejiang. See OECD 2019b, p. 21, for a note regarding Cyprus. Reading scores for Spain are not included in the international PISA reports: due to implausible student-response behaviours on the reading assessment in a small number of schools in some regions of Spain, the OECD is unable to assure full international comparability of the results. The data for Vietnam have not yet been fully validated: due to a lack of consistency in the response pattern of some performance data, the OECD cannot yet assure full international comparability of the results.

Table B.2.2

Average scores by index of economic, social, and cultural status (ESCS): READING BY COGNITIVE PROCESS SUBSCALES

Cognitive process subscale	Canada and provinces	Bottom quarter		Second quarter		Third quarter		Top quarter		Difference (top quarter–bottom quarter)		Change in the average score per one (integer) unit change in the ESCS index		Explained variance in student performance (r^2 x 100)	
		Average	Standard error	Average	Standard error	Average	Standard error	Average	Standard error	Difference	Standard error	Difference	Standard error	%	Standard error
Locate information	Canada	484	(2.9)	510	(2.9)	535	(3.0)	548	(2.9)	64*	(3.6)	30*	(1.7)	6.1	(0.7)
	Newfoundland and Labrador	484	(12.7)	507	(11.5)	519	(15.0)	536	(13.6)	53*	(11.4)	25*	(5.5)	5.4	(2.2)
	Prince Edward Island	467	(18.5)	479	(20.0)	512	(17.2)	552	(22.3)	85*	(17.8)	41*	(9.8)	9.9	(3.5)
	Nova Scotia	474	(7.3)	506	(9.3)	533	(9.3)	539	(9.8)	65*	(8.5)	32*	(4.4)	7.2	(1.8)
	New Brunswick	461	(8.7)	477	(9.4)	500	(9.5)	524	(11.0)	64*	(10.0)	29*	(4.3)	5.9	(1.6)
	Quebec	485	(7.2)	509	(5.8)	538	(6.0)	549	(6.5)	64*	(9.2)	34*	(4.1)	7.3	(1.7)
	Ontario	489	(5.1)	514	(4.6)	535	(5.1)	548	(5.7)	59*	(6.6)	26*	(3.2)	4.6	(1.1)
	Manitoba	469	(7.6)	488	(7.4)	504	(7.6)	527	(8.5)	58*	(8.1)	24*	(3.4)	4.6	(1.2)
	Saskatchewan	463	(7.8)	490	(8.4)	505	(8.1)	536	(7.8)	73*	(7.8)	33*	(3.7)	8.4	(1.7)
	Alberta	489	(7.2)	519	(7.8)	547	(6.0)	562	(7.0)	73*	(8.9)	36*	(4.1)	8.4	(1.9)
	British Columbia	482	(7.6)	514	(5.8)	538	(6.8)	542	(8.6)	60*	(10.3)	31*	(4.6)	5.7	(1.6)
Understand	Canada	486	(2.5)	511	(2.4)	539	(2.7)	553	(2.6)	67*	(3.5)	31*	(1.7)	6.1	(0.6)
	Newfoundland and Labrador	493	(9.4)	510	(8.9)	527	(8.9)	545	(8.8)	53*	(10.7)	25*	(4.9)	4.6	(1.8)
	Prince Edward Island	470	(12.2)	481	(14.2)	505	(11.7)	541	(12.3)	71*	(16.7)	34*	(9.6)	6.7	(3.1)
	Nova Scotia	478	(6.6)	506	(5.9)	534	(6.8)	538	(8.8)	60*	(9.4)	29*	(4.6)	5.4	(1.4)
	New Brunswick	455	(7.0)	470	(7.8)	495	(7.0)	517	(8.8)	62*	(11.1)	28*	(4.7)	5.2	(1.7)
	Quebec	478	(5.1)	507	(4.5)	536	(4.7)	551	(4.9)	73*	(6.9)	37*	(3.3)	9.3	(1.5)
	Ontario	496	(5.6)	522	(4.6)	544	(5.2)	557	(4.9)	61*	(6.9)	26*	(3.3)	4.2	(1.0)
	Manitoba	463	(5.8)	484	(5.4)	498	(5.0)	522	(5.1)	59*	(7.5)	24*	(3.1)	4.3	(1.1)
	Saskatchewan	465	(5.7)	490	(4.6)	509	(6.0)	536	(5.5)	71*	(8.6)	32*	(4.0)	7.6	(1.7)
	Alberta	492	(7.2)	518	(6.1)	552	(5.2)	566	(6.8)	73*	(9.9)	37*	(4.3)	8.4	(1.9)
	British Columbia	482	(6.7)	512	(5.5)	539	(6.8)	540	(8.6)	58*	(10.4)	30*	(4.6)	5.0	(1.5)
Evaluate and reflect	Canada	488	(3.3)	518	(2.7)	548	(2.9)	565	(3.2)	77*	(4.8)	36*	(2.4)	7.4	(0.9)
	Newfoundland and Labrador	491	(11.9)	515	(9.8)	535	(10.2)	559	(11.7)	68*	(11.7)	33*	(5.4)	7.2	(2.3)
	Prince Edward Island	467	(14.6)	483	(20.8)	515	(18.3)	553	(16.0)	86*	(15.7)	42*	(8.6)	9.2	(3.1)
	Nova Scotia	474	(9.2)	507	(7.3)	537	(8.8)	547	(9.9)	73*	(11.3)	35*	(5.7)	7.3	(2.0)
	New Brunswick	462	(8.9)	482	(8.4)	508	(7.9)	536	(8.2)	74*	(10.9)	34*	(4.8)	6.7	(1.8)
	Quebec	490	(5.8)	520	(5.3)	550	(5.0)	566	(5.3)	77*	(7.8)	39*	(3.5)	9.4	(1.5)
	Ontario	499	(5.9)	528	(5.0)	551	(5.3)	568	(5.8)	69*	(7.7)	30*	(3.8)	5.2	(1.2)
	Manitoba	461	(7.1)	486	(6.5)	504	(5.9)	530	(6.0)	69*	(8.6)	29*	(3.7)	5.7	(1.4)
	Saskatchewan	453	(7.9)	487	(6.3)	507	(6.8)	543	(6.2)	89*	(8.5)	40*	(3.8)	10.7	(1.9)
	Alberta	490	(8.6)	525	(7.9)	563	(5.9)	581	(8.4)	91*	(11.6)	46*	(5.2)	10.9	(2.4)
	British Columbia	483	(8.7)	519	(5.8)	548	(7.8)	554	(10.0)	71*	(12.0)	36*	(5.3)	6.7	(1.8)

* Significant difference within Canada or province.

Table B.2.3

Average scores by index of economic, social, and cultural status (ESCS): READING BY TEXT STRUCTURE SUBSCALES

Text structure subscale	Canada and provinces	Bottom quarter		Second quarter		Third quarter		Top quarter		Difference (top quarter–bottom quarter)		Change in the average score per one (integer) unit change in the ESCS index		Explained variance in student performance (r^2 x 100)	
		Average	Standard error	Average	Standard error	Average	Standard error	Average	Standard error	Difference	Standard error	Difference	Standard error	%	Standard error
Single text	Canada	484	(2.6)	511	(2.6)	540	(2.5)	556	(2.8)	72*	(3.6)	34*	(1.8)	7.1	(0.7)
	Newfoundland and Labrador	488	(8.6)	512	(8.7)	527	(8.7)	548	(9.8)	60*	(12.1)	28*	(5.2)	5.8	(2.1)
	Prince Edward Island	463	(12.8)	479	(15.9)	506	(13.6)	545	(13.5)	82*	(16.8)	40*	(9.6)	8.8	(3.4)
	Nova Scotia	475	(6.9)	506	(7.6)	535	(6.4)	541	(7.9)	66*	(8.0)	32*	(4.6)	6.5	(1.5)
	New Brunswick	454	(7.3)	470	(6.7)	495	(7.1)	520	(7.9)	66*	(10.3)	30*	(4.6)	6.0	(1.8)
	Quebec	476	(5.0)	506	(4.6)	535	(4.7)	551	(5.3)	75*	(6.5)	38*	(3.0)	10.0	(1.5)
	Ontario	496	(5.3)	524	(5.0)	548	(5.0)	563	(5.1)	67*	(6.6)	28*	(3.2)	4.9	(1.0)
	Manitoba	460	(6.6)	483	(5.7)	500	(5.9)	525	(5.8)	65*	(7.9)	27*	(3.2)	5.3	(1.3)
	Saskatchewan	460	(6.1)	489	(5.1)	508	(5.5)	539	(6.0)	79*	(8.1)	36*	(3.6)	9.4	(1.7)
	Alberta	487	(7.2)	519	(6.3)	553	(5.2)	567	(6.8)	80*	(9.4)	40*	(4.2)	9.8	(2.0)
	British Columbia	480	(6.7)	511	(5.2)	539	(6.6)	543	(8.5)	63*	(10.0)	32*	(4.4)	5.9	(1.5)
Multiple text	Canada	487	(2.5)	513	(2.4)	541	(2.8)	555	(2.6)	68*	(3.4)	32*	(1.6)	6.5	(0.7)
	Newfoundland and Labrador	490	(9.1)	511	(9.0)	527	(7.8)	545	(8.7)	55*	(10.2)	27*	(4.6)	5.3	(1.8)
	Prince Edward Island	471	(13.0)	487	(14.2)	512	(13.1)	548	(11.8)	77*	(15.7)	37*	(8.8)	8.4	(3.1)
	Nova Scotia	481	(6.6)	511	(7.0)	538	(6.3)	544	(8.6)	63*	(8.8)	30*	(4.6)	6.0	(1.5)
	New Brunswick	464	(7.0)	479	(7.9)	503	(7.2)	527	(8.7)	63*	(10.3)	28*	(4.4)	5.4	(1.6)
	Quebec	488	(5.3)	517	(4.7)	545	(5.1)	561	(4.8)	73*	(7.0)	38*	(3.4)	9.3	(1.7)
	Ontario	492	(5.0)	519	(4.4)	542	(5.1)	555	(4.8)	62*	(6.4)	27*	(3.1)	4.6	(1.0)
	Manitoba	469	(5.7)	487	(5.5)	502	(5.2)	524	(4.9)	55*	(7.3)	23*	(3.0)	4.0	(1.0)
	Saskatchewan	463	(5.7)	488	(4.6)	506	(5.4)	536	(4.8)	73*	(7.5)	33*	(3.3)	8.2	(1.5)
	Alberta	495	(7.0)	523	(6.4)	555	(5.6)	569	(6.9)	74*	(9.1)	37*	(4.0)	8.6	(1.9)
	British Columbia	484	(6.5)	517	(5.4)	544	(6.4)	547	(8.4)	62*	(10.1)	32*	(4.5)	5.9	(1.6)

* Significant difference within Canada or province.

Table B.2.4a

Percentage of students by immigrant status

Canada, provinces, and OECD average	Non-immigrant students		Immigrant students		Second-generation immigrant students		First-generation immigrant students	
	%	Standard error	%	Standard error	%	Standard error	%	Standard error
Canada	**65.0**	**(1.4)**	**35.0**	**(1.4)**	**17.9**	**(0.9)**	**17.1**	**(0.8)**
Newfoundland and Labrador	96.7	(0.7)	3.3‡	(0.7)	U‡	(0.3)	2.5‡	(0.6)
Prince Edward Island	86.9	(1.9)	13.1	(1.9)	U‡	(0.8)	11.0‡	(1.8)
Nova Scotia	92.4	(0.8)	7.6	(0.8)	2.0‡	(0.4)	5.6	(0.7)
New Brunswick	93.8	(0.9)	6.2	(0.9)	0.7‡	(0.2)	5.5	(0.9)
Quebec	75.8	(2.7)	24.2	(2.7)	11.1	(1.3)	13.1	(1.5)
Ontario	55.5	(3.2)	44.5	(3.2)	26.7	(2.0)	17.8	(1.6)
Manitoba	69.4	(1.5)	30.6	(1.5)	9.2	(0.7)	21.4	(1.3)
Saskatchewan	78.8	(1.7)	21.2	(1.7)	4.2	(0.6)	17.0	(1.3)
Alberta	64.8	(2.1)	35.2	(2.1)	13.5	(1.3)	21.7	(1.3)
British Columbia	59.4	(2.6)	40.6	(2.6)	19.7	(1.9)	20.9	(2.0)
OECD average	**87.0**	**(0.1)**	**13.0**	**(0.1)**	**7.7**	**(0.1)**	**5.4**	**(0.1)**

‡ There are fewer than 30 observations.
U Too unreliable to be published.

Table B.2.4b

Average scores by immigrant status: READING

Canada, provinces, and OECD average	Non-immigrant students		Immigrant students		Second-generation immigrant students		First-generation immigrant students		Difference (immigrant students–non-immigrant students)		Difference (second-generation students–non-immigrant students)		Difference (first-generation students–non-immigrant students)		Difference (first-generation students–second-generation students)	
	Average	Standard error	Average	Standard error	Average	Standard error	Average	Standard error	Difference	Standard error	Difference	Standard error	Difference	Standard error	Difference	Standard error
Canada	**525**	**(1.6)**	**522**	**(3.0)**	**535**	**(3.9)**	**508**	**(3.6)**	**-3**	**(2.9)**	**11***	**(3.7)**	**-17***	**(3.6)**	**-28***	**(4.5)**
Newfoundland and Labrador	519	(4.5)	524‡	(27.1)	569‡	(58.6)	510‡	(31.0)	5	(27.0)	50	(59.2)	-9	(30.5)	-59	(66.9)
Prince Edward Island	507**	(8.6)	488	(18.4)	531‡	(48.9)	479‡	(20.4)	-19	(20.4)	24	(53.1)	-28	(20.8)	-52	(55.3)
Nova Scotia	518	(3.7)	521	(13.3)	521‡	(23.3)	520	(15.5)	3	(12.9)	4	(22.6)	3	(15.4)	-1	(26.8)
New Brunswick	489**	(3.7)	519	(14.3)	510‡	(42.2)	520	(14.9)	30*	(15.0)	21	(43.2)	31*	(15.3)	9	(43.7)
Quebec	529	(2.7)	500**	(9.1)	507**	(10.3)	495	(9.5)	-29*	(8.8)	-22*	(9.9)	-34*	(9.2)	-12	(7.8)
Ontario	528	(3.7)	529**	(5.0)	540	(5.9)	512	(6.4)	1	(5.3)	12*	(6.0)	-15*	(7.0)	-28*	(7.4)
Manitoba	497**	(3.9)	500**	(4.7)	524	(8.3)	490**	(5.0)	4	(5.3)	27*	(8.4)	-7	(5.7)	-34*	(9.0)
Saskatchewan	506**	(3.2)	494**	(5.0)	531	(9.8)	485**	(5.8)	-12*	(5.3)	25*	(9.9)	-21*	(6.1)	-46*	(11.7)
Alberta	536**	(4.5)	533**	(5.4)	551**	(7.6)	521**	(5.9)	-3	(5.0)	16*	(7.3)	-14*	(5.7)	-30*	(8.1)
British Columbia	525	(4.3)	518	(7.1)	532	(7.7)	505	(9.4)	-7	(6.9)	7	(7.4)	-20*	(9.4)	-28*	(10.1)
OECD average	**494****	**(0.4)**	**451****	**(2.1)**	**459****	**(2.7)**	**440****	**(2.7)**	**-43***	**(2.1)**	**-36***	**(2.7)**	**-54***	**(2.7)**	**-19***	**(3.8)**

‡ There are fewer than 30 observations.
* Significant difference within Canada, province, or OECD.
** Significant difference compared to Canada.

Table B.2.5

Average scores by immigrant status: READING BY COGNITIVE PROCESS SUBSCALES

Cognitive process subscale	Canada and provinces	Non-immigrant students		Immigrant students		Second-generation immigrant students		First-generation immigrant students		Difference (immigrant students–non-immigrant students)		Difference (second-generation students–non-immigrant students)		Difference (first-generation students–non-immigrant students)		Difference (first-generation students–second-generation students)	
		Average	Standard error	Average	Standard error	Average	Standard error	Average	Standard error	Difference	Standard error	Difference	Standard error	Difference	Standard error	Difference	Standard error
Locate information	Canada	522	(2.6)	518	(3.3)	530	(3.9)	505	(4.5)	-4	(3.5)	8	(4.2)	-17*	(4.4)	-25*	(5.2)
	Newfoundland and Labrador	511	(11.4)	515‡	(29.1)	554‡	(56.4)	502‡	(32.5)	4	(27.1)	43	(55.6)	-9	(30.5)	-52	(62.3)
	Prince Edward Island	505	(17.0)	489	(27.3)	544‡	(52.8)	478‡	(28.3)	-16	(22.5)	39	(52.9)	-27	(22.7)	-67	(54.3)
	Nova Scotia	513	(7.2)	511	(16.7)	508‡	(31.7)	513	(16.3)	-2	(15.4)	-6	(29.4)	-1	(16.0)	5	(30.4)
	New Brunswick	490**	(7.9)	512	(18.0)	499‡	(47.3)	513	(18.7)	22	(16.2)	9	(47.3)	24	(16.7)	15	(48.8)
	Quebec	528	(4.6)	502	(9.8)	509	(11.0)	496	(11.3)	-26*	(9.3)	-19	(10.6)	-33*	(10.8)	-14	(10.8)
	Ontario	523	(4.4)	523	(5.3)	533	(5.9)	509	(7.2)	0	(5.8)	10	(6.5)	-14	(7.5)	-24*	(7.7)
	Manitoba	497**	(6.3)	501	(9.7)	525	(13.8)	490	(8.9)	3	(8.4)	28*	(12.1)	-7	(8.1)	-35*	(9.8)
	Saskatchewan	504**	(6.8)	490**	(8.9)	525	(13.4)	481**	(9.3)	-14*	(6.3)	21*	(10.2)	-23*	(7.5)	-44*	(12.7)
	Alberta	532	(5.3)	528	(8.3)	549	(9.6)	515	(9.3)	-4	(7.1)	17*	(8.7)	-17*	(8.2)	-34*	(9.3)
	British Columbia	525	(5.6)	515	(8.0)	527	(9.6)	503	(9.6)	-10	(7.8)	2	(9.1)	-21*	(9.8)	-24*	(10.7)
Understand	Canada	522	(1.7)	525	(3.5)	538	(4.1)	511	(4.4)	2	(3.4)	16*	(4.0)	-12*	(4.4)	-27*	(5.1)
	Newfoundland and Labrador	518	(6.4)	532‡	(26.6)	570‡	(54.2)	519‡	(31.7)	14	(26.2)	52	(54.8)	1	(31.0)	-51	(64.3)
	Prince Edward Island	500**	(8.1)	496	(19.3)	544‡	(54.9)	487‡	(21.3)	-4	(20.4)	44	(57.6)	-14	(21.2)	-57	(62.1)
	Nova Scotia	514	(4.3)	518	(13.3)	517‡	(22.9)	519	(15.4)	4	(13.4)	3	(22.6)	5	(15.7)	1	(26.4)
	New Brunswick	483**	(5.3)	514	(16.1)	498‡	(42.1)	516	(16.8)	31	(16.4)	15	(43.1)	33*	(16.8)	18	(43.7)
	Quebec	526	(3.2)	499**	(9.5)	507**	(11.0)	493	(10.2)	-26*	(9.4)	-19	(11.1)	-33*	(10.0)	-14	(9.7)
	Ontario	528**	(3.8)	535**	(5.6)	545**	(6.2)	519	(7.3)	7	(5.7)	17*	(6.2)	-9	(7.6)	-26*	(7.6)
	Manitoba	490**	(4.1)	499**	(5.0)	519**	(8.4)	490**	(5.8)	8	(6.0)	29*	(8.9)	-1	(6.7)	-30*	(9.8)
	Saskatchewan	504**	(3.5)	494**	(5.0)	533	(10.0)	485**	(6.1)	-10	(6.0)	28*	(10.0)	-20*	(7.2)	-48*	(12.7)
	Alberta	532	(5.3)	535	(5.8)	553	(7.9)	524**	(6.5)	3	(5.9)	21*	(7.6)	-8	(6.9)	-29*	(8.5)
	British Columbia	521	(4.8)	518	(8.0)	531	(7.9)	505	(10.6)	-4	(8.0)	10	(7.9)	-17	(10.6)	-27*	(10.3)
Evaluate and reflect	Canada	531	(2.0)	531	(4.1)	544	(5.1)	517	(4.8)	-1	(4.0)	12*	(4.9)	-14*	(4.8)	-26*	(5.7)
	Newfoundland and Labrador	524	(8.8)	550‡	(29.1)	573‡	(50.4)	543‡	(36.1)	26	(28.3)	49	(52.1)	19	(34.5)	-30	(63.4)
	Prince Edward Island	505	(15.3)	502	(23.9)	541‡	(57.5)	495‡	(26.3)	-3	(23.5)	35	(58.3)	-11	(25.5)	-46	(64.4)
	Nova Scotia	517**	(6.5)	519	(16.0)	519‡	(25.9)	519	(17.6)	3	(14.4)	3	(23.8)	3	(16.8)	0	(27.8)
	New Brunswick	496**	(6.3)	528	(16.4)	524‡	(48.7)	529	(17.4)	33	(17.7)	28	(49.4)	33	(18.5)	5	(51.3)
	Quebec	540**	(3.9)	509**	(10.4)	516**	(13.3)	503	(11.7)	-31*	(11.1)	-24	(13.8)	-38*	(12.4)	-14	(13.8)
	Ontario	537	(3.9)	540**	(6.4)	550	(7.3)	525	(7.9)	3	(6.7)	13	(7.2)	-12	(8.4)	-25*	(8.3)
	Manitoba	495**	(5.0)	501**	(9.5)	521	(11.6)	492**	(10.0)	6	(10.3)	26*	(12.3)	-3	(10.7)	-29*	(10.1)
	Saskatchewan	503**	(5.4)	489**	(7.5)	531	(13.1)	479**	(8.1)	-14	(7.6)	28*	(12.0)	-24*	(8.6)	-53*	(13.9)
	Alberta	541	(6.2)	540	(8.4)	560	(10.3)	528	(9.1)	-1	(7.7)	19	(10.2)	-14	(8.3)	-32*	(9.6)
	British Columbia	528	(6.0)	527	(9.6)	537	(10.9)	518	(11.6)	-1	(8.7)	9	(10.0)	-10	(11.1)	-19	(11.9)

‡ There are fewer than 30 observations.
* Significant difference within Canada or province.
** Significant difference compared to Canada.

Table B.2.6

Average scores by immigrant status: READING BY TEXT STRUCTURE SUBSCALES

Text structure subscale	Canada and provinces	Non-immigrant students		Immigrant students		Second-generation immigrant students		First-generation immigrant students		Difference (immigrant students–non-immigrant students)		Difference (second-generation students–non-immigrant students)		Difference (first-generation students–non-immigrant students)		Difference (first-generation students–second-generation students)	
		Average	Standard error	Average	Standard error	Average	Standard error	Average	Standard error	Difference	Standard error	Difference	Standard error	Difference	Standard error	Difference	Standard error
Single text	Canada	523	(1.9)	526	(3.4)	539	(4.5)	512	(4.0)	2	(3.4)	15*	(4.3)	-11*	(4.3)	-26*	(5.3)
	Newfoundland and Labrador	518	(6.1)	529‡	(25.3)	571‡	(52.9)	516‡	(30.5)	11	(25.7)	53	(54.0)	-2	(30.3)	-55	(63.4)
	Prince Edward Island	500**	(10.5)	491	(20.3)	531‡	(54.7)	483‡	(21.6)	-9	(20.7)	31	(57.5)	-17	(20.6)	-49	(59.3)
	Nova Scotia	514	(4.8)	524	(14.2)	521‡	(25.1)	525	(15.3)	10	(13.0)	7	(23.4)	11	(14.9)	3	(26.5)
	New Brunswick	484**	(4.7)	515	(15.0)	509‡	(40.3)	516	(16.0)	32*	(15.1)	26	(41.4)	33*	(15.9)	7	(43.3)
	Quebec	523	(3.0)	500**	(9.6)	508**	(11.5)	493**	(10.0)	-23*	(9.2)	-16	(11.0)	-30*	(9.8)	-14	(9.5)
	Ontario	532**	(4.0)	537**	(5.4)	547**	(6.4)	524**	(6.9)	5	(5.8)	15*	(6.4)	-8	(7.5)	-23*	(7.7)
	Manitoba	491**	(4.9)	499**	(6.4)	520	(9.8)	489**	(7.0)	8	(7.0)	30*	(10.0)	-1	(7.6)	-31*	(10.4)
	Saskatchewan	504**	(4.0)	493**	(5.3)	530	(10.1)	484**	(6.6)	-11	(5.6)	26*	(10.2)	-20*	(6.9)	-46*	(13.2)
	Alberta	532	(5.0)	533	(6.5)	550	(7.9)	523	(7.6)	1	(6.3)	18*	(7.9)	-9	(7.3)	-27*	(8.6)
	British Columbia	523	(4.8)	516	(8.0)	529	(8.9)	503	(10.3)	-7	(8.0)	6	(8.8)	-19	(10.4)	-25*	(11.0)
Multiple text	Canada	526	(1.8)	525	(3.4)	539	(4.0)	510	(4.1)	-1	(3.4)	13*	(3.9)	-16*	(4.2)	-29*	(4.6)
	Newfoundland and Labrador	517	(6.1)	532‡	(28.1)	579‡	(53.9)	517‡	(33.9)	15	(28.0)	62	(55.5)	0	(33.0)	-62	(65.3)
	Prince Edward Island	506	(9.8)	498	(19.3)	544‡	(45.8)	489‡	(21.7)	-8	(21.2)	38	(48.6)	-17	(22.5)	-56	(53.2)
	Nova Scotia	518	(4.9)	522	(13.2)	525‡	(23.5)	521	(14.7)	4	(12.8)	7	(22.7)	3	(14.7)	-4	(25.8)
	New Brunswick	492**	(5.5)	522	(16.0)	510‡	(45.5)	523	(17.0)	29	(16.1)	18	(46.4)	31	(16.9)	13	(48.5)
	Quebec	536**	(3.1)	505**	(9.6)	514**	(10.8)	497	(10.3)	-31*	(9.4)	-22*	(10.4)	-39*	(10.4)	-17	(9.0)
	Ontario	526	(3.7)	531	(5.3)	543	(5.9)	513	(6.9)	5	(5.8)	16*	(6.1)	-13	(7.5)	-30*	(7.1)
	Manitoba	496**	(4.1)	500**	(5.4)	521	(9.0)	490**	(5.6)	4	(6.3)	26*	(9.4)	-5	(6.5)	-31*	(9.1)
	Saskatchewan	503**	(3.4)	492**	(5.1)	535	(9.3)	482**	(6.2)	-11	(5.8)	32*	(9.5)	-21*	(6.9)	-53*	(11.6)
	Alberta	536**	(5.2)	537	(6.5)	559**	(8.2)	524**	(7.2)	1	(5.9)	22*	(7.6)	-13	(6.6)	-35*	(8.1)
	British Columbia	526	(4.7)	522	(7.4)	534	(8.2)	510	(9.5)	-4	(7.2)	8	(7.8)	-16	(9.6)	-24*	(10.1)

‡ There are fewer than 30 observations.
* Significant difference within Canada or province.
** Significant difference compared to Canada.

Table B.2.7a

Percentage of students by language spoken at home

Canada and provinces	English		French		Other	
	Average	Standard error	Average	Standard error	Average	Standard error
Canada	65.1	(0.8)	16.6	(0.5)	18.3	(0.8)
Newfoundland and Labrador	97.3	(0.6)	U‡	(0.1)	2.5‡	(0.6)
Prince Edward Island	88.3	(2.5)	U‡	(2.2)	8.7‡	(1.7)
Nova Scotia	94.3	(0.7)	1.4	(0.3)	4.3	(0.6)
New Brunswick	71.3	(1.2)	24.3	(1.1)	4.4	(0.7)
Quebec	13.3	(0.6)	73.7	(1.8)	13.0	(1.6)
Ontario	76.8	(1.8)	2.0	(0.2)	21.2	(1.8)
Manitoba	79.7	(1.2)	1.3	(0.3)	19.0	(1.3)
Saskatchewan	85.4	(1.2)	0.4‡	(0.1)	14.1	(1.2)
Alberta	79.6	(1.3)	1.1	(0.2)	19.3	(1.3)
British Columbia	76.1	(2.0)	0.3	(0.1)	23.6	(2.0)

‡ There are fewer than 30 observations.
U Too unreliable to be published.

Table B.2.7b

Average scores by language spoken at home: READING

Canada and provinces	English		French		Other		Difference (English–French)		Difference (English–Other)		Difference (French–Other)	
	Average	Standard error	Average	Standard error	Average	Standard error	Average	Standard error	Average	Standard error	Average	Standard error
Canada	527	(2.0)	520	(3.0)	506	(3.4)	7*	(3.5)	21*	(3.5)	14*	(4.7)
Newfoundland and Labrador	518	(4.6)	456‡	(36.9)	552‡	(30.6)	62	(36.7)	-35	(31.1)	-97*	(48.3)
Prince Edward Island	509**	(8.8)	428‡**	(31.2)	481‡	(22.0)	81*	(26.0)	28	(23.7)	-54	(37.5)
Nova Scotia	519**	(3.8)	462**	(16.1)	492	(13.2)	57*	(16.0)	27*	(12.6)	-30	(20.7)
New Brunswick	496**	(5.0)	469**	(5.9)	510	(17.7)	27*	(8.5)	-14	(18.6)	-41*	(19.0)
Quebec	522	(5.6)	525**	(3.3)	494	(9.7)	-3	(6.0)	28*	(9.7)	31*	(8.9)
Ontario	531**	(3.6)	469**	(10.5)	515**	(5.9)	62*	(10.9)	16*	(5.8)	-46*	(11.9)
Manitoba	501**	(3.7)	472**	(14.8)	476**	(6.6)	29	(15.4)	25*	(7.0)	-4	(16.6)
Saskatchewan	506**	(3.2)	528‡	(24.0)	471**	(6.2)	-22	(24.3)	35*	(6.1)	58*	(25.3)
Alberta	537**	(4.4)	507	(17.9)	519**	(6.2)	30	(18.5)	18*	(6.2)	-12	(19.5)
British Columbia	528	(4.5)	470	(31.4)	497	(7.3)	58	(31.9)	32*	(7.0)	-26	(31.8)

‡ There are fewer than 30 observations.
* Significant difference within Canada or province.
** Significant difference compared to Canada.

Table B.2.8

Average scores by language spoken at home: READING BY COGNITIVE PROCESS SUBSCALES

Cognitive process subscale	Canada and provinces	English		French		Other		Difference (English–French)		Difference (English–Other)		Difference (French–Other)	
		Average	Standard error	Average	Standard error	Average	Standard error	Difference	Standard error	Difference	Standard error	Difference	Standard error
Locate information	Canada	523	(2.6)	520	(4.4)	504	(4.0)	3	(4.5)	18*	(4.2)	16*	(5.7)
	Newfoundland and Labrador	510	(11.4)	478‡	(46.0)	538‡	(32.6)	32	(44.7)	-28	(31.0)	-60	(46.9)
	Prince Edward Island	506	(18.1)	467‡	(54.1)	481‡	(31.8)	39	(59.2)	25	(27.6)	-14	(71.4)
	Nova Scotia	514	(7.4)	477	(24.0)	484	(14.9)	38	(24.0)	31*	(13.5)	-7	(27.3)
	New Brunswick	495**	(9.4)	474**	(13.9)	500	(20.2)	21	(16.1)	-5	(21.1)	-26	(22.6)
	Quebec	517	(7.6)	525**	(4.9)	499	(10.6)	-8	(7.7)	18	(10.4)	26*	(9.4)
	Ontario	526	(4.0)	475**	(13.1)	512	(6.6)	51*	(13.7)	14*	(6.3)	-37*	(14.2)
	Manitoba	502**	(6.7)	481**	(18.7)	477**	(9.8)	21	(20.0)	24*	(8.8)	3	(22.7)
	Saskatchewan	503**	(7.1)	541‡	(33.2)	469**	(8.4)	-38	(32.0)	34*	(7.8)	73*	(33.3)
	Alberta	533	(5.6)	517	(18.4)	513	(8.8)	16	(20.1)	20*	(7.9)	4	(22.3)
	British Columbia	526	(5.8)	472	(37.7)	496	(8.8)	55	(37.4)	31*	(9.0)	-24	(37.6)
Understand	Canada	526	(2.3)	517	(3.3)	510	(3.8)	9*	(4.0)	16*	(3.9)	6	(5.1)
	Newfoundland and Labrador	517	(6.4)	453‡	(39.4)	559‡	(29.9)	63	(40.5)	-42	(30.0)	-105*	(48.6)
	Prince Edward Island	503**	(8.8)	433‡**	(34.5)	490‡	(23.7)	69*	(33.1)	12	(25.8)	-57	(40.7)
	Nova Scotia	515**	(4.3)	457**	(18.0)	493	(14.1)	58*	(17.3)	22	(13.5)	-36	(22.9)
	New Brunswick	490**	(6.0)	463**	(8.4)	505	(20.1)	27*	(9.5)	-15	(20.7)	-42	(21.7)
	Quebec	520	(6.5)	522**	(3.6)	493	(9.4)	-1	(7.0)	27*	(9.5)	28*	(8.6)
	Ontario	533**	(3.9)	468**	(10.1)	523**	(6.1)	65*	(10.8)	10	(5.9)	-54*	(12.0)
	Manitoba	496**	(3.8)	477**	(16.8)	475**	(7.3)	19	(17.6)	21*	(7.8)	2	(19.6)
	Saskatchewan	505**	(3.3)	531‡	(25.9)	472**	(6.7)	-26	(26.2)	33*	(7.2)	59*	(27.9)
	Alberta	534	(5.0)	515	(17.4)	521	(7.3)	19	(17.7)	13	(7.6)	-7	(19.8)
	British Columbia	525	(4.8)	471	(31.8)	497	(8.6)	54	(32.0)	28*	(8.1)	-27	(31.6)
Evaluate and reflect	Canada	533	(2.5)	531	(4.1)	515	(4.4)	2	(4.7)	19*	(4.1)	17*	(6.5)
	Newfoundland and Labrador	523	(8.8)	470‡	(37.4)	578‡	(33.7)	53	(36.8)	-55	(33.6)	-108*	(48.1)
	Prince Edward Island	508	(15.1)	442‡**	(44.3)	498‡	(27.8)	66	(39.2)	10	(28.2)	-56	(51.2)
	Nova Scotia	517**	(6.8)	473**	(22.9)	493	(14.2)	45	(24.5)	25	(13.9)	-20	(27.1)
	New Brunswick	501**	(7.1)	479**	(13.2)	519	(19.6)	22	(15.0)	-18	(20.6)	-40	(24.8)
	Quebec	531	(6.6)	536**	(4.5)	504	(11.7)	-5	(8.2)	28*	(11.1)	32*	(12.3)
	Ontario	541**	(4.0)	488**	(10.8)	525**	(7.2)	53*	(11.4)	16*	(6.7)	-37*	(13.1)
	Manitoba	500**	(4.6)	474**	(20.2)	476**	(9.3)	25	(20.8)	24*	(8.5)	-1	(23.2)
	Saskatchewan	503**	(5.2)	525‡	(31.5)	463**	(9.4)	-22	(31.8)	40*	(8.3)	62	(32.7)
	Alberta	543	(6.2)	523	(18.8)	524	(9.0)	20	(20.2)	19*	(8.4)	0	(20.4)
	British Columbia	532	(6.2)	493	(37.6)	508	(9.4)	39	(37.1)	24*	(7.9)	-15	(37.6)

‡ There are fewer than 30 observations.
* Significant difference within Canada or province.
** Significant difference compared to Canada.

Table B.2.9

Average scores by language spoken at home: READING BY TEXT STRUCTURE SUBSCALES

Text structure subscale	Canada and provinces	English		French		Other		Difference (English–French)		Difference (English–Other)		Difference (French–Other)	
		Average	Standard error	Average	Standard error	Average	Standard error	Difference	Standard error	Difference	Standard error	Difference	Standard error
Single text	Canada	528	(2.3)	515	(3.2)	510	(3.9)	13*	(3.8)	18*	(4.1)	5	(5.0)
	Newfoundland and Labrador	517	(6.2)	458‡	(37.0)	556‡	(28.5)	59	(37.7)	-39	(29.3)	-98*	(48.3)
	Prince Edward Island	502**	(11.4)	423‡**	(37.7)	486‡	(23.1)	79*	(39.1)	16	(24.2)	-63	(48.0)
	Nova Scotia	515**	(4.9)	464**	(18.2)	496	(15.2)	51*	(18.0)	19	(13.8)	-32	(22.4)
	New Brunswick	492**	(5.8)	460**	(6.4)	504	(20.1)	32*	(8.7)	-12	(20.0)	-44*	(20.7)
	Quebec	520	(6.7)	520**	(3.6)	493	(10.3)	0	(7.1)	27*	(10.5)	27*	(9.3)
	Ontario	537**	(4.0)	470**	(12.5)	525**	(6.3)	67*	(13.3)	12	(6.4)	-55*	(13.8)
	Manitoba	496**	(4.5)	473**	(16.3)	473**	(8.9)	23	(16.5)	23*	(9.0)	0	(17.5)
	Saskatchewan	504**	(3.8)	529‡	(29.0)	470**	(7.4)	-26	(29.0)	34*	(6.7)	60*	(29.3)
	Alberta	534	(4.9)	512	(17.3)	518	(7.6)	22	(18.0)	16*	(7.4)	-6	(18.6)
	British Columbia	525	(4.9)	472	(27.0)	495	(8.4)	53	(27.4)	30*	(8.0)	-23	(27.8)
Multiple text	Canada	527	(2.3)	527	(3.4)	510	(3.9)	0	(3.8)	17*	(4.1)	17*	(5.1)
	Newfoundland and Labrador	516	(6.1)	456‡	(41.1)	568‡	(32.4)	60	(40.7)	-52	(32.5)	-112*	(52.5)
	Prince Edward Island	507	(10.0)	457‡**	(31.1)	492‡	(23.2)	50	(27.7)	16	(24.4)	-35	(39.0)
	Nova Scotia	519	(4.9)	470**	(17.3)	496	(15.2)	49*	(17.0)	23	(14.5)	-26	(20.6)
	New Brunswick	497**	(6.7)	478**	(6.8)	510	(18.2)	19*	(8.9)	-13	(18.7)	-32	(18.9)
	Quebec	525	(6.1)	532**	(3.7)	501	(10.3)	-7	(6.3)	25*	(10.7)	32*	(9.8)
	Ontario	531	(3.7)	476**	(10.3)	517	(6.3)	55*	(11.0)	13*	(6.4)	-42*	(12.3)
	Manitoba	500**	(3.9)	477**	(17.3)	478**	(6.9)	22	(17.7)	22*	(7.5)	-1	(18.6)
	Saskatchewan	503**	(3.4)	525‡	(28.9)	469**	(6.2)	-22	(29.5)	34*	(6.5)	57	(30.4)
	Alberta	538**	(5.1)	512	(16.2)	523	(7.4)	26	(16.3)	15*	(7.0)	-11	(17.6)
	British Columbia	529	(4.9)	467	(32.5)	502	(7.6)	63	(32.5)	27*	(7.2)	-36	(32.7)

‡ There are fewer than 30 observations.
* Significant difference within Canada or province.
** Significant difference compared to Canada.

Table B.2.10a

Percentage and average scores of students by attitude toward reading: READING

I read only if I have to

Canada, provinces, and OECD average	Strongly disagree				Disagree				Agree				Strongly agree			
	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error
Canada	**20.5**	**(0.4)**	**567***	**(2.8)**	**31.5**	**(0.5)**	**542***	**(2.1)**	**30.3**	**(0.5)**	**501**	**(2.1)**	**17.6**	**(0.4)**	**479***	**(2.4)**
Newfoundland and Labrador	20.5	(1.4)	563*	(9.5)	25.1	(1.4)	553*	(7.6)	31.5	(1.7)	494	(7.1)	22.8	(1.5)	478	(7.0)
Prince Edward Island	16.7	(2.8)	551*	(19.4)	29.0	(2.5)	523	(11.8)	33.3	(2.2)	493	(11.8)	21.0	(3.6)	465	(15.0)
Nova Scotia	17.4	(0.9)	572*	(7.7)	30.9	(1.1)	541*	(5.3)	31.7	(1.2)	498	(5.2)	20.0	(1.1)	467*	(6.5)
New Brunswick	21.6	(1.4)	539*	(8.0)	28.6	(1.4)	516*	(5.8)	28.5	(1.4)	471	(6.4)	21.2	(1.2)	437*	(5.6)
Quebec	24.7	(0.8)	558*	(5.4)	30.3	(1.0)	537*	(4.0)	27.0	(0.9)	502	(4.2)	18.0	(0.7)	481*	(3.9)
Ontario	19.4	(0.7)	572*	(5.4)	31.3	(0.9)	549*	(4.2)	31.1	(0.9)	505	(4.0)	18.1	(0.8)	486*	(4.4)
Manitoba	18.0	(1.1)	537*	(6.7)	31.0	(1.1)	516*	(4.8)	32.0	(1.3)	479	(5.1)	19.0	(1.1)	463*	(5.4)
Saskatchewan	17.4	(0.8)	544*	(6.1)	30.9	(1.2)	525*	(4.8)	33.3	(1.2)	479	(3.9)	18.3	(0.8)	464*	(5.0)
Alberta	19.8	(0.8)	581*	(6.1)	32.1	(1.3)	558*	(4.8)	31.8	(1.3)	507	(5.7)	16.4	(1.1)	482*	(6.1)
British Columbia	20.4	(1.2)	573*	(6.6)	34.7	(0.8)	535*	(5.3)	30.3	(0.9)	499	(5.8)	14.6	(1.0)	472*	(6.6)
OECD average	**21.3**	**(0.1)**	**528***	**(0.7)**	**29.7**	**(0.1)**	**506***	**(0.5)**	**30.1**	**(0.1)**	**468**	**(0.5)**	**19.0**	**(0.1)**	**460***	**(0.6)**

* Significant difference compared to the average score in the "Agree" category.

Table B.2.10b

Percentage and average scores of students by attitude toward reading: READING

Reading is one of my favourite hobbies

Canada, provinces, and OECD average	Strongly disagree				Disagree				Agree				Strongly agree			
	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error
Canada	**26.9**	**(0.5)**	**485***	**(2.2)**	**36.5**	**(0.4)**	**520**	**(2.2)**	**24.0**	**(0.4)**	**547***	**(2.1)**	**12.6**	**(0.4)**	**577***	**(3.3)**
Newfoundland and Labrador	32.9	(1.9)	482*	(6.8)	36.0	(1.7)	523	(6.6)	21.0	(1.5)	540	(9.0)	10.1	(1.2)	586*	(11.5)
Prince Edward Island	29.8	(2.6)	474*	(18.9)	40.1	(3.0)	511	(9.8)	21.4	(2.1)	514	(13.2)	8.7	(1.6)	562‡	(28.2)
Nova Scotia	31.4	(1.3)	471*	(4.9)	37.1	(1.3)	522	(4.9)	20.5	(1.0)	545*	(6.7)	11.0	(0.8)	589*	(9.7)
New Brunswick	32.9	(1.6)	445*	(4.4)	32.3	(1.5)	493	(5.0)	20.3	(1.3)	528*	(8.3)	14.5	(1.0)	541*	(9.2)
Quebec	31.4	(1.0)	488*	(3.8)	34.1	(0.9)	523	(3.9)	22.6	(0.8)	547*	(5.0)	11.9	(0.6)	570*	(6.0)
Ontario	25.9	(1.0)	491*	(4.7)	37.7	(0.9)	523	(4.1)	23.3	(0.9)	549*	(4.2)	13.0	(0.7)	582*	(6.0)
Manitoba	26.4	(1.2)	461*	(4.8)	36.6	(1.2)	500	(4.2)	25.0	(1.2)	510	(5.5)	12.1	(0.7)	550*	(6.8)
Saskatchewan	26.1	(1.0)	468*	(4.7)	37.5	(1.1)	498	(3.6)	25.3	(1.3)	525*	(5.8)	11.0	(0.7)	546*	(7.1)
Alberta	23.8	(1.2)	486*	(4.9)	37.0	(0.9)	525	(5.5)	26.2	(1.1)	564*	(6.3)	13.0	(0.8)	587*	(7.4)
British Columbia	24.1	(1.2)	484*	(5.9)	36.5	(0.9)	514	(5.2)	26.8	(1.0)	544*	(6.3)	12.5	(0.7)	577*	(8.5)
OECD average	**31.9**	**(0.1)**	**462***	**(0.5)**	**34.3**	**(0.1)**	**491**	**(0.5)**	**22.6**	**(0.1)**	**511***	**(0.7)**	**11.2**	**(0.1)**	**536***	**(0.9)**

‡ There are fewer than 30 observations.
* Significant difference compared to the average score in the "Disagree" category.

Table B.2.10c

Percentage and average scores of students by attitude toward reading: READING

I like talking about books with other people

Canada, provinces, and OECD average	Strongly disagree				Disagree				Agree				Strongly agree			
	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error
Canada	**27.8**	**(0.5)**	**487***	**(2.1)**	**33.0**	**(0.5)**	**520**	**(2.1)**	**29.4**	**(0.5)**	**546 ***	**(2.5)**	**9.8**	**(0.3)**	**576***	**(3.8)**
Newfoundland and Labrador	30.3	(1.6)	480*	(7.0)	36.1	(1.6)	523	(6.4)	24.8	(1.4)	540	(7.5)	8.8	(1.0)	581*	(11.6)
Prince Edward Island	28.5	(2.8)	472*	(15.6)	36.9	(2.6)	509	(12.0)	27.2	(2.6)	533	(12.8)	7.4	(1.7)	525‡	(29.3)
Nova Scotia	31.7	(1.3)	471*	(4.7)	33.3	(1.4)	516	(4.5)	26.6	(1.2)	557 *	(5.9)	8.4	(0.8)	587*	(10.7)
New Brunswick	32.5	(1.6)	445*	(4.6)	30.2	(1.3)	492	(4.9)	25.1	(1.2)	526 *	(7.0)	12.2	(0.9)	551*	(11.1)
Quebec	34.7	(1.2)	490*	(3.4)	28.2	(0.8)	526	(3.8)	27.8	(0.9)	547 *	(5.1)	9.3	(0.4)	569*	(7.6)
Ontario	26.2	(1.1)	493*	(4.5)	33.7	(0.9)	523	(4.2)	30.8	(0.8)	548 *	(4.2)	9.4	(0.6)	579*	(7.5)
Manitoba	27.0	(1.1)	466*	(4.6)	35.6	(1.2)	493	(4.5)	28.0	(1.1)	520 *	(5.3)	9.4	(0.8)	550*	(8.6)
Saskatchewan	27.5	(1.2)	472*	(4.8)	34.5	(0.9)	493	(3.8)	28.4	(1.0)	525 *	(4.8)	9.6	(0.8)	550*	(7.7)
Alberta	24.2	(1.3)	490*	(4.6)	35.1	(1.3)	528	(5.4)	28.8	(1.4)	556 *	(6.1)	11.9	(0.6)	588*	(8.0)
British Columbia	23.8	(1.1)	485*	(5.4)	35.1	(1.0)	515	(4.9)	30.8	(1.1)	543 *	(6.1)	10.2	(0.7)	578*	(9.4)
OECD average	**30.8**	**(0.1)**	**460***	**(0.5)**	**32.6**	**(0.1)**	**488**	**(0.5)**	**26.6**	**(0.1)**	**514 ***	**(0.6)**	**10.0**	**(0.1)**	**537***	**(1.0)**

‡ There are fewer than 30 observations.
* Significant difference compared to the average score in the "Disagree" category.

Table B.2.10d

Percentage and average scores of students by attitude toward reading: READING

For me, reading is a waste of time

Canada, provinces, and OECD average	Strongly disagree				Disagree				Agree				Strongly agree			
	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error
Canada	**32.9**	**(0.5)**	**565***	**(2.2)**	**40.7**	**(0.4)**	**521***	**(2.1)**	**16.5**	**(0.4)**	**489**	**(2.6)**	**10.0**	**(0.3)**	**457***	**(3.0)**
Newfoundland and Labrador	28.0	(1.4)	566*	(7.4)	37.9	(1.6)	529*	(6.3)	19.5	(1.3)	486	(7.7)	14.5	(1.3)	453*	(8.8)
Prince Edward Island	28.5	(2.5)	551*	(9.9)	41.5	(2.5)	514	(7.8)	16.0	(2.6)	472	(24.9)	13.9	(2.2)	426*	(18.2)
Nova Scotia	28.9	(1.1)	572*	(6.4)	40.0	(1.2)	523*	(5.0)	18.0	(1.1)	478	(6.6)	13.1	(1.0)	438*	(7.3)
New Brunswick	30.5	(1.3)	542*	(6.1)	36.9	(1.4)	497*	(5.2)	17.6	(1.2)	461	(8.1)	15.0	(1.1)	413*	(5.8)
Quebec	33.4	(0.9)	562*	(5.1)	39.1	(0.9)	520*	(3.5)	17.0	(0.7)	495	(3.8)	10.5	(0.6)	457*	(5.0)
Ontario	32.5	(0.9)	570*	(3.8)	41.2	(0.9)	523*	(4.0)	16.6	(0.8)	494	(5.1)	9.7	(0.6)	469*	(6.2)
Manitoba	32.4	(1.3)	530*	(4.3)	40.8	(1.1)	503*	(4.6)	15.3	(0.7)	464	(6.3)	11.5	(0.8)	437*	(6.8)
Saskatchewan	28.0	(1.0)	543*	(4.7)	41.8	(1.3)	504*	(4.1)	18.4	(1.0)	471	(4.7)	11.8	(0.8)	446*	(6.9)
Alberta	34.0	(1.3)	578*	(5.5)	40.2	(1.3)	531*	(5.1)	17.5	(1.0)	496	(5.8)	8.4	(0.8)	452*	(8.1)
British Columbia	35.1	(1.2)	563*	(6.4)	42.5	(1.3)	519*	(5.3)	13.7	(0.8)	473	(5.4)	8.8	(0.7)	455*	(7.5)
OECD average	**33.6**	**(0.1)**	**530***	**(0.5)**	**38.0**	**(0.1)**	**489***	**(0.5)**	**17.3**	**(0.1)**	**453**	**(0.6)**	**11.2**	**(0.1)**	**433***	**(0.8)**

* Significant difference compared to the average score in the "Agree" category.

Table B.2.10e

Percentage and average scores of students by attitude toward reading: READING

Canada, provinces, and OECD average	I read only to get information that I need															
	Strongly disagree				Disagree				Agree				Strongly agree			
	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error
Canada	**19.0**	**(0.4)**	**562***	**(2.9)**	**34.0**	**(0.5)**	**547***	**(1.8)**	**31.4**	**(0.5)**	**496**	**(2.0)**	**15.6**	**(0.4)**	**483***	**(2.6)**
Newfoundland and Labrador	18.6	(1.3)	560*	(9.8)	29.1	(1.5)	549*	(6.6)	35.4	(1.6)	491	(6.4)	17.0	(1.3)	484	(7.7)
Prince Edward Island	17.0	(3.0)	550*	(18.2)	39.2	(4.1)	520	(11.6)	29.4	(2.5)	486	(13.0)	14.5	(1.9)	455	(20.5)
Nova Scotia	17.3	(1.0)	556*	(8.6)	35.0	(1.3)	549*	(4.8)	30.5	(1.5)	486	(4.7)	17.3	(1.3)	476	(6.8)
New Brunswick	21.0	(1.1)	535*	(7.3)	33.1	(1.5)	518*	(5.9)	30.2	(1.3)	458	(4.8)	15.7	(1.2)	445	(7.5)
Quebec	23.7	(0.8)	555*	(4.7)	32.1	(0.9)	541*	(4.3)	29.7	(0.8)	501	(3.7)	14.5	(0.7)	478*	(4.2)
Ontario	17.6	(0.7)	566*	(5.9)	33.8	(1.1)	554*	(3.5)	31.8	(1.0)	499	(3.7)	16.9	(0.8)	491	(5.3)
Manitoba	17.4	(0.8)	524*	(6.9)	34.5	(1.3)	525*	(4.6)	32.1	(1.3)	475	(5.1)	16.0	(1.0)	461*	(5.1)
Saskatchewan	16.4	(0.7)	544*	(5.2)	33.8	(1.1)	527*	(4.4)	34.0	(1.2)	475	(4.8)	15.8	(0.8)	464	(5.5)
Alberta	18.7	(0.9)	583*	(6.8)	34.0	(1.3)	559*	(4.3)	31.7	(1.0)	500	(5.3)	15.5	(0.9)	491	(6.3)
British Columbia	17.8	(1.0)	564*	(7.3)	37.5	(1.3)	544*	(6.0)	31.8	(0.9)	493	(5.2)	12.9	(0.8)	475*	(6.2)
OECD average	**18.8**	**(0.1)**	**524***	**(0.7)**	**31.5**	**(0.1)**	**514***	**(0.5)**	**34.3**	**(0.1)**	**466**	**(0.5)**	**15.4**	**(0.1)**	**458***	**(0.7)**

* Significant difference compared to the average score in the "Agree" category.

Table B.2.11

Percentage and average scores of students by time spent reading for enjoyment: READING

Canada, provinces, and OECD average	I do not read for enjoyment				30 minutes or less a day				More than 30 minutes to less than 60 minutes a day				1 to 2 hours a day				More than 2 hours a day			
	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error
Canada	**40.4**	**(0.7)**	**488**	**(1.8)**	**27.2**	**(0.4)**	**538***	**(2.5)**	**16.6**	**(0.4)**	**555 ***	**(2.9)**	**10.0**	**(0.4)**	**560***	**(3.3)**	**5.9**	**(0.2)**	**556***	**(4.4)**
Newfoundland and Labrador	49.2	(2.1)	483	(5.0)	21.0	(1.6)	546*	(7.9)	14.9	(1.4)	545 *	(10.7)	10.2	(1.0)	575*	(12.1)	4.7	(0.8)	571*	(15.5)
Prince Edward Island	46.5	(2.3)	481	(16.2)	26.3	(2.8)	511	(10.7)	15.1	(2.0)	543 *	(14.6)	7.3	(1.8)	548*‡	(20.2)	4.8	(1.4)	521‡	(37.9)
Nova Scotia	47.3	(1.5)	475	(4.2)	25.9	(1.2)	552*	(6.3)	13.6	(1.0)	560 *	(7.4)	8.4	(0.9)	564*	(8.6)	4.8	(0.5)	549*	(11.7)
New Brunswick	45.8	(1.7)	451	(4.4)	25.7	(1.2)	516*	(5.9)	15.1	(1.2)	544 *	(10.3)	7.4	(0.7)	532*	(11.5)	6.1	(0.7)	512*	(12.0)
Quebec	44.4	(0.8)	491	(3.0)	29.2	(0.8)	541*	(4.8)	13.7	(0.6)	552 *	(5.2)	8.5	(0.5)	567*	(5.7)	4.2	(0.3)	539*	(11.6)
Ontario	39.0	(1.3)	492	(3.8)	26.2	(0.9)	538*	(4.8)	17.4	(0.8)	563 *	(4.5)	10.8	(0.7)	558*	(6.3)	6.5	(0.5)	560*	(8.3)
Manitoba	40.6	(1.3)	468	(4.5)	28.7	(1.2)	513*	(5.5)	15.1	(1.0)	518 *	(6.3)	9.1	(1.0)	533*	(8.4)	6.4	(0.7)	522*	(9.5)
Saskatchewan	43.3	(1.3)	469	(4.2)	28.6	(1.2)	518*	(4.5)	13.6	(0.8)	543 *	(5.2)	9.1	(0.7)	535*	(7.6)	5.4	(0.5)	529*	(11.3)
Alberta	37.2	(1.2)	491	(4.5)	26.5	(1.0)	547*	(6.4)	18.6	(0.8)	564 *	(6.5)	10.9	(0.8)	576*	(7.7)	6.9	(0.6)	567*	(9.0)
British Columbia	37.3	(1.3)	486	(4.4)	27.7	(1.0)	537*	(5.4)	19.3	(0.8)	541 *	(8.1)	10.0	(0.8)	556*	(9.0)	5.7	(0.5)	577*	(10.3)
OECD average	**42.0**	**(0.1)**	**460**	**(0.5)**	**24.3**	**(0.1)**	**504***	**(0.6)**	**16.8**	**(0.1)**	**520 ***	**(0.7)**	**11.0**	**(0.1)**	**524***	**(0.9)**	**5.9**	**(0.1)**	**516***	**(1.2)**

‡ There are fewer than 30 observations.
* Significant difference compared to the average score in the "I do not read for enjoyment" category.

Table B.2.12a

Percentage and average scores of students by reading self-efficacy: READING

I am a good reader

Canada, provinces, and OECD average	Strongly disagree				Disagree				Agree				Strongly agree			
	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error
Canada	**4.7**	**(0.2)**	**446***	**(4.4)**	**12.6**	**(0.4)**	**477***	**(2.9)**	**52.8**	**(0.5)**	**518**	**(2.0)**	**29.9**	**(0.4)**	**573***	**(2.1)**
Newfoundland and Labrador	5.0	(0.8)	422*	(13.0)	11.2	(1.1)	459*	(12.0)	48.3	(1.9)	510	(5.4)	35.6	(1.9)	571*	(5.7)
Prince Edward Island	U	(1.5)	389*‡	(33.3)	9.8	(2.1)	452*‡	(19.2)	52.3	(5.4)	500	(8.6)	33.6	(3.4)	544*	(10.4)
Nova Scotia	3.8	(0.5)	425*	(13.5)	10.3	(0.8)	449*	(7.6)	53.7	(1.5)	509	(4.2)	32.1	(1.2)	571*	(7.5)
New Brunswick	6.9	(0.7)	394*	(10.4)	14.3	(0.9)	447*	(7.3)	49.9	(1.5)	487	(4.5)	28.9	(1.2)	554*	(6.1)
Quebec	9.1	(0.7)	452*	(5.3)	16.8	(0.7)	494*	(4.0)	48.6	(0.8)	526	(3.7)	25.5	(0.8)	569*	(4.2)
Ontario	3.3	(0.4)	458*	(11.8)	11.0	(0.7)	473*	(6.5)	53.5	(1.1)	519	(3.9)	32.2	(0.8)	576*	(3.9)
Manitoba	4.0	(0.6)	401*	(10.6)	10.3	(0.7)	454*	(7.8)	54.1	(1.3)	491	(3.8)	31.6	(1.4)	543*	(5.1)
Saskatchewan	3.5	(0.4)	420*	(11.9)	11.4	(0.7)	442*	(6.1)	55.3	(1.2)	497	(3.3)	29.9	(1.4)	554*	(5.3)
Alberta	2.9	(0.4)	465*	(14.8)	11.0	(0.6)	484*	(9.5)	57.1	(1.0)	526	(4.2)	29.0	(1.1)	587*	(5.0)
British Columbia	4.2	(0.4)	425*	(10.5)	13.7	(0.8)	475*	(6.7)	53.2	(1.1)	515	(4.6)	28.9	(0.9)	576*	(5.2)
OECD average	**8.7**	**(0.1)**	**423***	**(0.9)**	**20.6**	**(0.1)**	**461***	**(0.6)**	**49.3**	**(0.1)**	**496**	**(0.5)**	**21.4**	**(0.1)**	**534***	**(0.7)**

‡ There are fewer than 30 observations.
U Too unreliable to be published.
* Significant difference compared to the average score in the "Agree" category.

Table B.2.12b

Percentage and average scores of students by reading self-efficacy: READING

I am able to understand difficult texts

Canada, provinces, and OECD average	Strongly disagree				Disagree				Agree				Strongly agree			
	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error
Canada	**4.0**	**(0.2)**	**445***	**(4.5)**	**18.2**	**(0.4)**	**485***	**(2.4)**	**56.7**	**(0.5)**	**528**	**(1.9)**	**21.1**	**(0.4)**	**572***	**(2.3)**
Newfoundland and Labrador	4.4	(0.7)	448*	(15.1)	18.2	(1.4)	474*	(9.3)	54.0	(1.7)	520	(5.4)	23.4	(1.7)	577*	(7.3)
Prince Edward Island	U	(1.8)	438‡	(61.5)	17.0	(2.1)	465*	(17.7)	55.7	(4.6)	510	(8.3)	23.7	(2.7)	534	(15.0)
Nova Scotia	3.0	(0.4)	417*	(12.5)	19.0	(1.2)	467*	(6.5)	55.0	(1.4)	523	(4.3)	23.0	(1.1)	569*	(9.6)
New Brunswick	6.5	(0.8)	390*	(13.0)	21.8	(1.3)	453*	(5.0)	53.1	(1.5)	502	(5.0)	18.6	(1.0)	556*	(7.7)
Quebec	6.8	(0.6)	447*	(6.6)	21.0	(0.7)	491*	(3.7)	53.4	(0.9)	532	(3.7)	18.8	(0.7)	569*	(4.9)
Ontario	2.7	(0.3)	446*	(12.2)	16.5	(0.7)	485*	(5.2)	57.8	(0.9)	530	(3.6)	23.0	(0.8)	575*	(3.9)
Manitoba	3.7	(0.5)	432*	(12.9)	15.4	(1.0)	463*	(7.5)	58.0	(1.2)	500	(3.5)	22.9	(1.1)	539*	(5.1)
Saskatchewan	3.0	(0.4)	438*	(13.4)	16.9	(0.9)	455*	(4.9)	58.6	(1.0)	508	(3.5)	21.5	(1.2)	546*	(6.1)
Alberta	3.9	(0.4)	469*	(12.8)	17.4	(1.0)	501*	(6.4)	60.3	(0.9)	537	(4.5)	18.5	(0.8)	585*	(6.7)
British Columbia	3.7	(0.4)	439*	(13.4)	20.2	(1.1)	483*	(6.4)	55.5	(1.4)	525	(4.9)	20.6	(1.0)	573*	(5.0)
OECD average	**6.2**	**(0.1)**	**422***	**(1.1)**	**26.6**	**(0.1)**	**461***	**(0.5)**	**52.6**	**(0.1)**	**504**	**(0.5)**	**14.5**	**(0.1)**	**529***	**(0.8)**

‡ There are fewer than 30 observations.
U Too unreliable to be published.
* Significant difference compared to the average score in the "Agree" category.

Table B.2.12c

Percentage and average scores of students by reading self-efficacy: READING

Canada, provinces, and OECD average	I read fluently															
	Strongly disagree				Disagree				Agree				Strongly agree			
	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error
Canada	**3.5**	**(0.2)**	**439***	**(4.6)**	**14.3**	**(0.4)**	**473***	**(2.7)**	**51.9**	**(0.4)**	**517**	**(1.8)**	**30.2**	**(0.4)**	**576***	**(2.2)**
Newfoundland and Labrador	6.2	(1.0)	449*	(14.1)	17.3	(1.4)	467*	(11.3)	46.5	(2.0)	516	(5.4)	30.0	(2.0)	579*	(6.6)
Prince Edward Island	U	(1.1)	374*‡	(32.3)	15.0	(1.9)	457*	(17.8)	50.3	(3.2)	507	(10.9)	31.6	(3.0)	537*	(10.5)
Nova Scotia	4.1	(0.5)	433*	(11.8)	17.0	(1.0)	461*	(7.2)	50.1	(1.2)	514	(3.7)	28.8	(1.0)	577*	(7.0)
New Brunswick	6.1	(0.7)	391*	(9.7)	15.6	(1.1)	443*	(6.3)	49.9	(1.5)	488	(4.6)	28.3	(1.3)	556*	(6.1)
Quebec	4.8	(0.5)	438*	(6.7)	17.2	(0.7)	488*	(4.2)	49.0	(0.9)	520	(3.6)	29.0	(0.8)	570*	(4.4)
Ontario	3.0	(0.4)	456*	(10.3)	12.6	(0.6)	471*	(6.0)	52.7	(0.9)	520	(3.7)	31.8	(0.8)	579*	(4.1)
Manitoba	3.4	(0.5)	413*	(11.3)	15.5	(0.9)	449*	(5.6)	51.7	(1.1)	497	(3.9)	29.3	(1.1)	546*	(5.2)
Saskatchewan	3.2	(0.4)	426*	(11.9)	15.5	(1.0)	445*	(5.2)	54.3	(1.1)	501	(3.4)	27.0	(1.3)	559*	(5.0)
Alberta	3.0	(0.5)	441*	(13.8)	13.2	(0.9)	481*	(8.3)	53.6	(1.1)	525	(4.4)	30.3	(1.2)	591*	(5.4)
British Columbia	3.1	(0.4)	415*	(11.1)	14.7	(1.0)	467*	(7.2)	53.1	(1.1)	514	(4.5)	29.1	(1.1)	581*	(4.7)
OECD average	**4.5**	**(0.1)**	**412***	**(1.2)**	**18.2**	**(0.1)**	**451***	**(0.6)**	**52.6**	**(0.1)**	**492**	**(0.4)**	**24.7**	**(0.1)**	**534***	**(0.6)**

‡ There are fewer than 30 observations.
U Too unreliable to be published.
* Significant difference compared to the average score in the "Agree" category.

Table B.2.12d

Percentage and average scores of students by reading self-efficacy: READING

Canada, provinces, and OECD average	I have always had difficulty with reading															
	Strongly disagree				Disagree				Agree				Strongly agree			
	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error
Canada	**38.5**	**(0.5)**	**562***	**(1.8)**	**42.8**	**(0.5)**	**520**	**(2.0)**	**14.1**	**(0.4)**	**468***	**(2.9)**	**4.6**	**(0.2)**	**456***	**(3.6)**
Newfoundland and Labrador	42.8	(2.0)	561*	(5.8)	40.0	(1.9)	511	(6.2)	12.9	(1.4)	457*	(10.8)	4.2	(0.7)	434*	(15.7)
Prince Edward Island	39.5	(3.2)	539*	(11.4)	39.5	(2.8)	505	(11.0)	13.8	(1.8)	439*	(18.5)	7.2	(1.7)	449*‡	(25.0)
Nova Scotia	40.9	(1.3)	560*	(5.1)	42.6	(1.4)	510	(4.2)	11.6	(0.9)	457*	(7.5)	4.8	(0.6)	429*	(11.1)
New Brunswick	37.7	(1.5)	537*	(5.7)	37.6	(1.5)	492	(5.2)	17.4	(1.3)	439*	(7.3)	7.2	(0.7)	420*	(9.6)
Quebec	43.3	(0.8)	551*	(4.1)	36.2	(0.8)	520	(3.8)	14.3	(0.8)	485*	(4.7)	6.2	(0.5)	462*	(6.5)
Ontario	37.9	(1.0)	570*	(3.5)	44.8	(1.1)	523	(4.0)	13.6	(0.6)	466*	(5.8)	3.8	(0.4)	458*	(9.6)
Manitoba	37.1	(1.3)	538*	(4.1)	43.2	(1.2)	497	(4.4)	14.9	(0.8)	443*	(5.4)	4.7	(0.5)	428*	(9.4)
Saskatchewan	34.5	(1.3)	547*	(4.5)	43.9	(1.4)	505	(3.4)	16.4	(1.0)	445*	(5.6)	5.1	(0.5)	428*	(11.9)
Alberta	36.3	(1.1)	577*	(5.0)	45.3	(1.1)	528	(4.5)	14.2	(0.9)	486*	(7.0)	4.3	(0.5)	467*	(11.4)
British Columbia	36.0	(1.2)	565*	(5.1)	45.6	(0.9)	517	(4.6)	14.4	(1.0)	457*	(6.7)	3.9	(0.5)	463*	(12.2)
OECD average	**40.1**	**(0.1)**	**523***	**(0.5)**	**40.8**	**(0.1)**	**486**	**(0.5)**	**14.1**	**(0.1)**	**440***	**(0.7)**	**4.9**	**(0.1)**	**431***	**(1.1)**

‡ There are fewer than 30 observations.
* Significant difference compared to the average score in the "Disagree" category.

Table B.2.12e

Percentage and average scores of students by reading self-efficacy: READING

I have to read a text several times before completely understanding it

Canada, provinces, and OECD average	Strongly disagree				Disagree				Agree				Strongly agree			
	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error
Canada	**17.6**	**(0.4)**	**550***	**(2.7)**	**41.3**	**(0.4)**	**542**	**(2.0)**	**32.9**	**(0.5)**	**504***	**(2.2)**	**8.2**	**(0.3)**	**482***	**(3.1)**
Newfoundland and Labrador	19.3	(1.6)	550	(8.9)	40.7	(1.7)	540	(6.3)	30.0	(1.6)	500*	(7.2)	10.0	(1.2)	465*	(12.7)
Prince Edward Island	19.0	(2.5)	528	(17.2)	46.2	(3.1)	523	(7.5)	26.5	(2.9)	472*	(13.6)	8.3	(2.1)	456*‡	(21.1)
Nova Scotia	18.5	(1.0)	546	(7.3)	44.8	(1.3)	533	(5.2)	29.8	(1.5)	499*	(5.3)	6.8	(0.8)	454*	(12.3)
New Brunswick	19.5	(1.0)	532*	(8.4)	40.2	(1.4)	511	(5.7)	31.6	(1.4)	464*	(5.6)	8.7	(0.7)	443*	(11.4)
Quebec	21.1	(0.7)	545	(4.6)	40.7	(0.9)	543	(3.8)	29.2	(0.9)	503*	(4.1)	9.0	(0.6)	473*	(5.8)
Ontario	16.6	(0.8)	556	(5.1)	41.4	(1.0)	546	(4.2)	34.0	(1.1)	510*	(4.3)	8.0	(0.7)	488*	(6.3)
Manitoba	19.3	(1.1)	526	(5.6)	39.6	(1.3)	515	(5.0)	32.3	(1.1)	479*	(4.5)	8.7	(0.8)	461*	(8.1)
Saskatchewan	16.8	(0.9)	537*	(5.9)	44.8	(1.5)	518	(3.9)	31.3	(1.1)	478*	(4.5)	7.0	(0.6)	476*	(7.4)
Alberta	15.1	(1.0)	571*	(7.7)	39.3	(1.2)	550	(5.0)	36.8	(1.3)	519*	(5.3)	8.8	(0.6)	498*	(5.8)
British Columbia	16.4	(0.8)	543	(6.5)	42.8	(1.0)	543	(5.0)	33.5	(1.1)	498*	(5.4)	7.2	(0.6)	485*	(9.1)
OECD average	**16.0**	**(0.1)**	**508**	**(0.8)**	**40.4**	**(0.1)**	**509**	**(0.5)**	**35.5**	**(0.1)**	**474***	**(0.5)**	**8.1**	**(0.1)**	**446***	**(0.9)**

‡ There are fewer than 30 observations.
* Significant difference compared to the average score in the "Disagree" category.

Table B.2.12f

Percentage and average scores of students by reading self-efficacy: READING

I find it difficult to answer questions about a text

Canada, provinces, and OECD average	Strongly disagree				Disagree				Agree				Strongly agree			
	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error
Canada	**20.3**	**(0.4)**	**552***	**(2.7)**	**50.6**	**(0.5)**	**536**	**(1.8)**	**22.7**	**(0.5)**	**495***	**(2.6)**	**6.4**	**(0.2)**	**475***	**(3.5)**
Newfoundland and Labrador	22.6	(1.7)	551	(8.6)	48.0	(1.8)	532	(5.8)	22.1	(1.4)	489*	(9.2)	7.3	(0.9)	466*	(13.0)
Prince Edward Island	24.1	(2.4)	524	(19.5)	40.4	(4.2)	527	(7.2)	27.6	(2.8)	476*	(11.9)	7.9	(2.0)	438*‡	(21.6)
Nova Scotia	20.3	(1.2)	549*	(7.3)	50.5	(1.4)	530	(4.7)	21.9	(1.1)	494*	(5.7)	7.2	(0.8)	451*	(11.6)
New Brunswick	21.2	(1.2)	525	(7.6)	41.9	(1.6)	510	(5.4)	27.7	(1.5)	466*	(6.0)	9.2	(0.8)	433*	(10.9)
Quebec	20.5	(0.7)	542	(4.8)	44.2	(1.1)	540	(4.2)	26.9	(0.9)	503*	(3.4)	8.4	(0.6)	478*	(5.8)
Ontario	21.0	(0.8)	559*	(4.9)	54.0	(0.9)	538	(3.6)	20.0	(0.8)	493*	(5.5)	5.1	(0.4)	481*	(8.9)
Manitoba	20.8	(1.1)	524	(6.1)	48.1	(1.3)	513	(3.8)	24.2	(1.1)	468*	(6.0)	6.8	(0.8)	454*	(9.8)
Saskatchewan	20.1	(1.1)	540*	(5.5)	48.5	(1.3)	513	(3.4)	24.8	(1.0)	473*	(4.7)	6.6	(0.6)	460*	(9.7)
Alberta	17.9	(1.0)	571*	(8.1)	50.3	(1.2)	543	(4.6)	24.3	(1.0)	518*	(6.6)	7.5	(0.6)	480*	(8.1)
British Columbia	19.5	(0.8)	547*	(5.6)	53.5	(1.3)	536	(4.5)	21.6	(1.3)	485*	(6.1)	5.3	(0.5)	474*	(12.1)
OECD average	**22.1**	**(0.1)**	**512***	**(0.7)**	**51.4**	**(0.1)**	**502**	**(0.4)**	**21.2**	**(0.1)**	**458***	**(0.6)**	**5.3**	**(0.1)**	**432***	**(1.1)**

‡ There are fewer than 30 observations.
* Significant difference compared to the average score in the "Disagree" category.

Table B.2.13a

Percentage and average scores of students by type of reading material: READING

Canada, provinces, and OECD average	Magazines																	
	Never or almost never				A few times a year				About once a month				Several times a month				Several times a week			
	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error
Canada	**46.3**	**(0.6)**	**524**	**(2.0)**	**29.0**	**(0.5)**	**530***	**(1.9)**	**15.3**	**(0.3)**	**529**	**(3.2)**	**7.1**	**(0.2)**	**521**	**(4.2)**	**2.3**	**(0.2)**	**508***	**(7.3)**
Newfoundland and Labrador	54.1	(2.1)	516	(5.9)	27.4	(1.7)	527	(8.4)	12.0	(1.2)	523	(11.4)	5.3	(0.8)	539	(18.0)	U	(0.4)	523‡	(38.4)
Prince Edward Island	46.7	(2.5)	501	(11.2)	30.1	(2.4)	511	(10.6)	11.7	(1.9)	535	(18.6)	8.1	(1.5)	478‡	(23.8)	U	(1.4)	459‡	(34.7)
Nova Scotia	48.3	(1.5)	518	(4.8)	32.2	(1.2)	523	(5.0)	12.2	(1.0)	522	(8.5)	5.7	(0.7)	526	(12.7)	1.6	(0.4)	477‡	(29.0)
New Brunswick	47.8	(1.6)	491	(4.8)	27.4	(1.4)	498	(6.6)	14.9	(1.2)	496	(9.0)	8.0	(0.9)	504	(13.1)	1.9	(0.4)	473	(23.9)
Quebec	38.7	(1.0)	514	(3.5)	30.1	(0.8)	534*	(3.9)	19.0	(0.6)	531*	(5.5)	9.5	(0.5)	532*	(7.4)	2.7	(0.3)	503	(12.7)
Ontario	48.9	(1.1)	531	(3.9)	28.3	(1.0)	532	(4.6)	14.3	(0.7)	533	(6.2)	6.3	(0.4)	523	(6.5)	2.2	(0.4)	520	(12.0)
Manitoba	50.3	(1.6)	498	(4.0)	27.5	(1.2)	513*	(5.8)	13.7	(0.9)	494	(7.9)	6.4	(0.8)	481	(8.5)	2.0	(0.3)	471	(17.9)
Saskatchewan	50.2	(1.2)	504	(4.0)	27.2	(0.9)	509	(4.8)	13.6	(0.7)	501	(6.6)	6.6	(0.6)	511	(9.8)	2.3	(0.4)	465*	(17.0)
Alberta	47.1	(1.5)	536	(5.1)	28.7	(1.2)	542	(4.9)	15.0	(0.9)	538	(6.6)	7.1	(0.7)	539	(14.3)	2.2	(0.3)	506	(22.7)
British Columbia	45.8	(1.5)	525	(4.8)	30.2	(1.0)	526	(4.1)	15.5	(0.7)	527	(7.6)	6.5	(0.6)	491*	(13.8)	2.1	(0.3)	517	(22.3)
OECD average	**35.5**	**(0.1)**	**477**	**(0.5)**	**27.7**	**(0.1)**	**500***	**(0.6)**	**18.3**	**(0.1)**	**501***	**(0.6)**	**13.5**	**(0.1)**	**500***	**(0.8)**	**5.0**	**(0.1)**	**475**	**(1.3)**

‡ There are fewer than 30 observations.
U Too unreliable to be published.
* Significant difference compared to the average score in the "Never or almost never" category.
Note: Students were asked how often they read this type of material because they want to.

Table B.2.13b

Percentage and average scores of students by type of reading material: READING

Canada, provinces, and OECD average	Comic books																	
	Never or almost never				A few times a year				About once a month				Several times a month				Several times a week			
	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error
Canada	**49.8**	**(0.7)**	**525**	**(2.1)**	**26.6**	**(0.5)**	**531**	**(2.3)**	**10.8**	**(0.4)**	**520**	**(3.4)**	**8.1**	**(0.3)**	**522**	**(3.7)**	**4.7**	**(0.2)**	**526**	**(6.1)**
Newfoundland and Labrador	64.3	(1.7)	517	(5.1)	18.7	(1.2)	526	(9.7)	8.0	(0.8)	523	(15.4)	6.7	(0.9)	543	(19.0)	2.4	(0.5)	508‡	(23.1)
Prince Edward Island	60.2	(2.6)	506	(9.6)	24.0	(2.3)	502	(11.1)	5.9	(1.4)	528‡	(32.5)	7.0	(1.3)	507‡	(25.7)	U	(1.2)	441‡	(38.1)
Nova Scotia	62.2	(1.4)	516	(4.1)	21.6	(1.0)	528	(7.9)	8.0	(0.8)	528	(10.3)	5.6	(0.6)	517	(12.3)	2.6	(0.5)	520	(23.0)
New Brunswick	56.5	(1.2)	494	(4.0)	22.6	(1.2)	499	(7.7)	10.2	(0.9)	492	(10.8)	7.5	(0.8)	494	(12.6)	3.2	(0.5)	489	(15.9)
Quebec	41.7	(1.1)	520	(3.8)	33.6	(0.7)	536*	(4.2)	12.6	(0.6)	517	(6.6)	7.8	(0.5)	518	(7.3)	4.2	(0.5)	515	(11.6)
Ontario	53.0	(1.5)	533	(4.3)	24.2	(0.8)	530	(4.4)	10.5	(0.7)	523	(6.8)	7.2	(0.6)	525	(7.3)	5.0	(0.5)	543	(11.9)
Manitoba	50.8	(1.3)	499	(3.7)	24.2	(1.1)	511*	(5.4)	11.2	(0.8)	488	(9.1)	8.5	(0.6)	496	(7.7)	5.3	(0.6)	496	(12.7)
Saskatchewan	53.1	(1.1)	507	(3.8)	24.2	(1.0)	507	(5.6)	11.3	(0.8)	492	(7.3)	7.7	(0.7)	504	(9.1)	3.7	(0.5)	508	(15.3)
Alberta	48.9	(1.2)	535	(5.2)	26.0	(1.3)	541	(5.5)	9.8	(0.7)	537	(7.0)	9.9	(0.8)	540	(8.8)	5.4	(0.5)	527	(14.7)
British Columbia	47.7	(1.6)	523	(4.8)	26.9	(1.2)	529	(5.9)	10.5	(0.8)	521	(8.8)	10.0	(0.9)	517	(10.4)	4.9	(0.5)	510	(14.0)
OECD average	**51.5**	**(0.1)**	**489**	**(0.5)**	**22.9**	**(0.1)**	**495***	**(0.6)**	**10.6**	**(0.1)**	**487***	**(0.9)**	**9.0**	**(0.1)**	**494***	**(1.0)**	**6.1**	**(0.1)**	**487**	**(1.3)**

‡ There are fewer than 30 observations.
U Too unreliable to be published.
* Significant difference compared to the average score in the "Never or almost never" category.
Note: Students were asked how often they read this type of material because they want to.

Table B.2.13c

Percentage and average scores of students by type of reading material: READING

Canada, provinces, and OECD average	Fiction (e.g., novels, narratives, stories)																	
	Never or almost never				A few times a year				About once a month				Several times a month				Several times a week			
	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error
Canada	**19.1**	**(0.5)**	**479**	**(2.4)**	**27.2**	**(0.6)**	**520***	**(2.2)**	**20.4**	**(0.4)**	**526***	**(2.8)**	**18.5**	**(0.4)**	**544***	**(2.9)**	**14.8**	**(0.4)**	**572***	**(2.9)**
Newfoundland and Labrador	25.5	(1.8)	471	(6.6)	33.1	(1.9)	526*	(6.2)	19.8	(1.4)	533*	(8.3)	12.0	(1.1)	547*	(10.8)	9.6	(1.2)	590*	(12.5)
Prince Edward Island	17.8	(2.0)	436	(27.4)	24.5	(2.5)	499*	(15.4)	23.7	(2.4)	518*	(10.3)	18.7	(1.9)	521*	(13.3)	15.4	(2.2)	555*	(16.0)
Nova Scotia	20.3	(1.1)	465	(6.0)	29.2	(1.1)	509*	(5.7)	19.8	(1.0)	531*	(8.2)	17.3	(1.2)	542*	(7.2)	13.4	(1.1)	582*	(9.1)
New Brunswick	21.0	(1.2)	436	(7.0)	25.2	(1.3)	487*	(6.0)	20.4	(1.1)	498*	(6.0)	18.1	(1.3)	520*	(9.8)	15.3	(1.0)	555*	(8.7)
Quebec	22.3	(0.7)	487	(4.1)	28.5	(1.1)	523*	(4.0)	22.1	(0.7)	529*	(4.8)	15.6	(0.6)	545*	(5.4)	11.6	(0.6)	569*	(5.2)
Ontario	18.7	(1.1)	488	(4.9)	27.0	(1.0)	523*	(4.4)	19.0	(0.7)	528*	(5.6)	19.4	(0.7)	547*	(5.0)	15.8	(0.8)	578*	(6.0)
Manitoba	18.9	(1.1)	453	(4.9)	26.1	(1.0)	499*	(5.3)	20.8	(0.8)	499*	(5.8)	17.9	(1.1)	522*	(5.9)	16.3	(1.2)	534*	(6.6)
Saskatchewan	19.8	(1.0)	460	(5.7)	23.8	(1.0)	503*	(4.9)	23.1	(1.2)	504*	(4.8)	18.9	(1.1)	526*	(5.4)	14.5	(0.8)	544*	(6.7)
Alberta	17.7	(1.1)	477	(6.8)	25.1	(1.2)	528*	(6.7)	20.7	(0.9)	546*	(6.8)	20.5	(1.1)	558*	(5.9)	16.0	(0.9)	581*	(6.3)
British Columbia	15.7	(0.9)	468	(6.4)	28.1	(1.2)	519*	(4.5)	20.9	(1.1)	520*	(6.9)	19.3	(1.1)	538*	(8.1)	15.9	(0.9)	571*	(6.9)
OECD average	**26.2**	**(0.1)**	**450**	**(0.6)**	**26.1**	**(0.1)**	**494***	**(0.5)**	**18.6**	**(0.1)**	**499***	**(0.7)**	**17.0**	**(0.1)**	**517***	**(0.7)**	**12.1**	**(0.1)**	**534***	**(0.9)**

* Significant difference compared to the average score in the "Never or almost never" category.
Note: Students were asked how often they read this type of material because they want to.

Table B.2.13d

Percentage and average scores of students by type of reading material: READING

Canada, provinces, and OECD average	Non-fiction books (e.g., informational, documentary)																	
	Never or almost never				A few times a year				About once a month				Several times a month				Several times a week			
	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error
Canada	**30.7**	**(0.5)**	**507**	**(2.1)**	**29.9**	**(0.4)**	**534***	**(2.3)**	**19.4**	**(0.4)**	**531***	**(3.1)**	**14.5**	**(0.4)**	**539***	**(2.9)**	**5.4**	**(0.2)**	**537***	**(4.5)**
Newfoundland and Labrador	34.2	(1.8)	498	(6.6)	34.3	(1.9)	531*	(6.9)	17.3	(1.6)	521*	(9.8)	10.8	(1.2)	546*	(11.3)	3.3	(0.7)	576*	(27.3)
Prince Edward Island	25.9	(2.3)	480	(15.0)	34.2	(3.3)	499	(14.8)	21.1	(2.2)	527*	(11.9)	15.2	(2.5)	515	(20.8)	3.7	(1.0)	567*‡	(34.0)
Nova Scotia	29.5	(1.3)	495	(6.1)	33.5	(1.3)	525*	(4.8)	19.8	(1.1)	535*	(7.0)	12.5	(0.9)	537*	(8.9)	4.7	(0.5)	526	(19.3)
New Brunswick	33.7	(1.5)	467	(5.2)	30.2	(1.5)	502*	(5.7)	18.7	(1.2)	505*	(9.1)	12.1	(0.9)	523*	(10.1)	5.3	(0.8)	527*	(13.5)
Quebec	39.2	(0.9)	510	(3.7)	28.5	(0.8)	534*	(4.3)	16.3	(0.6)	536*	(5.2)	11.6	(0.6)	531*	(6.0)	4.3	(0.4)	538*	(9.5)
Ontario	29.0	(1.1)	513	(4.4)	30.0	(0.8)	539*	(4.6)	20.0	(0.7)	531*	(5.9)	15.5	(0.9)	547*	(4.8)	5.5	(0.4)	538*	(7.0)
Manitoba	31.4	(1.2)	482	(5.1)	28.0	(1.0)	510*	(5.3)	19.4	(0.9)	511*	(6.0)	14.5	(0.9)	506*	(7.4)	6.8	(0.7)	494	(11.3)
Saskatchewan	29.8	(1.1)	485	(4.2)	31.5	(1.1)	516*	(4.5)	19.9	(0.9)	510*	(5.9)	13.3	(0.6)	513*	(6.9)	5.5	(0.6)	516*	(10.9)
Alberta	27.9	(1.2)	514	(5.2)	29.7	(1.1)	543*	(6.6)	21.1	(1.0)	546*	(6.7)	15.3	(1.0)	550*	(8.1)	6.0	(0.5)	551*	(11.5)
British Columbia	25.7	(1.2)	500	(6.2)	30.7	(1.3)	533*	(5.2)	21.1	(0.9)	527*	(6.1)	16.2	(0.8)	531*	(7.4)	6.3	(0.7)	542*	(13.4)
OECD average	**35.5**	**(0.1)**	**469**	**(0.5)**	**26.4**	**(0.1)**	**503***	**(0.6)**	**17.4**	**(0.1)**	**505***	**(0.7)**	**14.1**	**(0.1)**	**507***	**(0.8)**	**6.5**	**(0.1)**	**502***	**(1.2)**

‡ There are fewer than 30 observations.
* Significant difference compared to the average score in the "Never or almost never" category.
Note: Students were asked how often they read this type of material because they want to.

Table B.2.13e

Percentage and average scores of students by type of reading material: READING

Canada, provinces, and OECD average	Newspapers																			
	Never or almost never				A few times a year				About once a month				Several times a month				Several times a week			
	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error
Canada	**46.9**	**(0.5)**	**518**	**(1.7)**	**23.4**	**(0.4)**	**532***	**(2.5)**	**14.3**	**(0.4)**	**532 ***	**(2.8)**	**10.2**	**(0.3)**	**537***	**(3.6)**	**5.2**	**(0.2)**	**536***	**(4.9)**
Newfoundland and Labrador	57.6	(2.1)	510	(5.7)	22.8	(1.9)	536*	(7.5)	10.1	(1.0)	536	(14.4)	6.7	(0.9)	536	(19.1)	2.9	(0.6)	552‡	(24.3)
Prince Edward Island	39.2	(3.7)	498	(18.0)	24.6	(2.4)	521	(14.6)	16.7	(2.1)	520	(11.2)	14.5	(3.1)	489	(18.0)	4.8	(1.5)	495‡	(38.9)
Nova Scotia	50.4	(1.7)	513	(4.1)	26.1	(1.3)	524	(6.1)	11.2	(0.8)	529	(10.4)	7.7	(0.8)	528	(10.0)	4.5	(0.7)	533	(18.2)
New Brunswick	52.9	(1.7)	484	(4.2)	23.2	(1.3)	507*	(6.9)	12.0	(1.1)	507 *	(11.5)	8.1	(1.0)	501	(13.6)	3.8	(0.6)	515	(15.8)
Quebec	42.9	(1.0)	514	(3.5)	23.2	(0.7)	531*	(4.1)	15.3	(0.6)	528 *	(5.4)	11.3	(0.5)	541*	(6.4)	7.3	(0.6)	537*	(9.1)
Ontario	47.8	(1.2)	524	(3.5)	23.2	(0.7)	534*	(4.5)	14.3	(0.7)	538 *	(6.3)	10.2	(0.7)	542*	(6.2)	4.5	(0.4)	540	(10.7)
Manitoba	49.1	(1.2)	493	(4.2)	23.7	(1.0)	508*	(5.7)	12.8	(0.8)	498	(7.3)	9.3	(0.7)	520*	(8.5)	5.2	(0.6)	495	(13.7)
Saskatchewan	51.3	(1.3)	497	(3.6)	22.2	(1.2)	519*	(5.2)	13.8	(0.8)	509	(7.9)	9.1	(0.7)	517*	(6.8)	3.6	(0.5)	483	(14.2)
Alberta	47.1	(1.3)	529	(5.1)	22.7	(1.1)	540	(5.5)	14.8	(1.2)	542	(6.0)	10.0	(0.9)	551*	(9.4)	5.4	(0.6)	557*	(12.4)
British Columbia	46.0	(1.1)	516	(4.6)	24.6	(1.0)	533*	(5.1)	14.3	(0.8)	527	(7.6)	9.9	(0.7)	526	(10.0)	5.1	(0.5)	525	(13.5)
OECD average	**37.8**	**(0.1)**	**480**	**(0.5)**	**21.3**	**(0.1)**	**497***	**(0.6)**	**15.5**	**(0.1)**	**499 ***	**(0.7)**	**14.7**	**(0.1)**	**501***	**(0.7)**	**10.7**	**(0.1)**	**492***	**(1.0)**

‡ There are fewer than 30 observations.
* Significant difference compared to the average score in the "Never or almost never" category.
Note: Students were asked how often they read this type of material because they want to.

Table B.2.14

Percentage and average scores of students by reading format: READING

Canada, provinces, and OECD average	I rarely or never read books				I read books more often in paper format				I read books more often on digital devices				I read books equally often in paper format and on digital devices			
	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error
Canada	**30.0**	**(0.6)**	**481***	**(1.9)**	**36.8**	**(0.6)**	**558**	**(1.9)**	**16.6**	**(0.4)**	**516***	**(3.1)**	**16.6**	**(0.3)**	**544***	**(2.8)**
Newfoundland and Labrador	37.5	(1.8)	480*	(6.3)	31.7	(1.5)	558	(7.2)	14.9	(1.3)	511*	(12.0)	15.8	(1.6)	556	(8.6)
Prince Edward Island	30.8	(3.4)	461*	(15.9)	45.6	(3.2)	542	(10.9)	12.4	(1.8)	471*	(18.6)	11.1	(2.2)	511	(18.2)
Nova Scotia	33.9	(1.2)	468*	(5.1)	39.5	(1.5)	558	(5.1)	12.2	(0.8)	505*	(7.1)	14.4	(1.3)	544	(8.4)
New Brunswick	36.3	(1.4)	443*	(5.2)	39.0	(1.4)	534	(6.0)	11.1	(0.8)	484*	(9.6)	13.7	(1.0)	528	(8.7)
Quebec	32.2	(0.9)	484*	(3.7)	41.2	(1.2)	555	(3.8)	14.2	(0.8)	509*	(5.1)	12.5	(0.6)	543*	(5.8)
Ontario	29.2	(1.1)	489*	(4.1)	33.9	(1.1)	561	(3.7)	19.2	(1.0)	525*	(5.7)	17.7	(0.7)	549*	(5.7)
Manitoba	31.0	(1.2)	458*	(4.5)	34.0	(1.4)	536	(4.9)	15.4	(1.0)	484*	(5.2)	19.5	(1.0)	513*	(6.3)
Saskatchewan	33.3	(1.3)	461*	(3.9)	34.7	(1.3)	536	(4.1)	15.4	(1.0)	505*	(6.3)	16.6	(0.9)	527	(5.6)
Alberta	27.4	(1.2)	486*	(5.3)	39.3	(1.4)	567	(5.2)	14.8	(0.9)	530*	(7.1)	18.5	(0.9)	556	(6.5)
British Columbia	28.2	(1.1)	473*	(5.0)	37.1	(1.2)	561	(4.6)	16.5	(0.8)	501*	(7.1)	18.2	(1.0)	540*	(7.8)
OECD average	**35.3**	**(0.1)**	**456***	**(0.5)**	**36.5**	**(0.1)**	**526**	**(0.5)**	**14.9**	**(0.1)**	**474***	**(0.7)**	**13.4**	**(0.1)**	**506***	**(0.8)**

* Significant difference compared to the average score in the "I read books more often in paper format" category.
Note: Students were asked which statement best describes their preferred reading format.

Table B.2.15a

Percentage and average scores of students by reading strategy: READING

I concentrate on the parts of the text that are easy to understand

Canada, provinces, and OECD average	Not useful 1				2				3				4				5				Very useful 6			
	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error
Canada	**12.6**	**(0.3)**	**523**	**(3.3)**	**14.0**	**(0.3)**	**540***	**(3.1)**	**23.4**	**(0.3)**	**526**	**(2.7)**	**25.4**	**(0.4)**	**525**	**(2.3)**	**13.7**	**(0.4)**	**531**	**(3.1)**	**10.9**	**(0.3)**	**516**	**(3.1)**
Newfoundland and Labrador	9.5	(1.0)	508	(12.8)	15.2	(1.4)	538	(8.6)	23.8	(1.3)	517	(9.2)	24.9	(1.5)	517	(6.7)	12.8	(1.2)	533	(10.8)	13.8	(1.3)	523	(11.4)
Prince Edward Island	9.3	(1.8)	473	(28.8)	12.3	(2.2)	508	(20.5)	23.3	(2.3)	522	(12.2)	24.8	(2.3)	500	(12.7)	17.1	(2.2)	528	(13.7)	13.1	(2.2)	486	(20.5)
Nova Scotia	11.8	(0.8)	525	(11.7)	14.7	(1.1)	529	(8.1)	24.2	(1.1)	515	(6.6)	25.3	(1.1)	516	(5.4)	14.0	(1.0)	531	(7.7)	9.9	(0.9)	510	(8.7)
New Brunswick	14.1	(1.3)	484	(10.7)	14.4	(1.0)	502	(9.1)	22.8	(1.3)	490	(6.6)	24.1	(1.4)	501	(6.1)	14.5	(1.2)	511*	(8.1)	10.0	(1.0)	485	(10.1)
Quebec	18.5	(0.6)	530	(5.3)	16.6	(0.7)	545*	(5.4)	22.7	(0.8)	525	(4.2)	20.5	(0.8)	522	(5.1)	10.9	(0.5)	524	(5.6)	10.8	(0.5)	501*	(5.2)
Ontario	11.6	(0.6)	524	(7.1)	12.7	(0.6)	538	(6.3)	22.7	(0.6)	530	(5.0)	27.3	(0.8)	532	(4.5)	14.5	(0.7)	538	(5.9)	11.2	(0.7)	527	(6.4)
Manitoba	10.5	(0.7)	489	(7.6)	12.5	(0.7)	517*	(7.7)	22.4	(1.1)	499	(6.0)	27.2	(1.2)	504	(5.0)	14.0	(0.8)	499	(6.1)	13.5	(0.7)	499	(6.9)
Saskatchewan	10.7	(0.8)	487	(8.3)	11.5	(0.8)	511*	(7.1)	25.0	(1.0)	510*	(5.0)	26.5	(0.9)	504*	(5.0)	15.1	(0.8)	513*	(5.5)	11.3	(0.7)	504	(6.9)
Alberta	9.0	(0.9)	544	(8.1)	14.3	(1.0)	563*	(7.2)	24.8	(1.1)	538	(6.0)	27.7	(1.2)	528	(5.9)	13.6	(0.8)	538	(8.8)	10.7	(0.7)	526	(8.2)
British Columbia	11.4	(0.7)	515	(8.4)	14.4	(0.8)	539*	(7.7)	25.0	(1.0)	523	(6.4)	24.8	(1.0)	524	(5.4)	14.9	(0.8)	527	(5.9)	9.5	(0.6)	513	(9.8)
OECD average	**13.1**	**(0.1)**	**483**	**(0.9)**	**17.2**	**(0.1)**	**504***	**(0.7)**	**25.2**	**(0.1)**	**496***	**(0.6)**	**20.7**	**(0.1)**	**495***	**(0.6)**	**11.9**	**(0.1)**	**494***	**(0.7)**	**11.9**	**(0.1)**	**471***	**(0.8)**

* Significant difference compared to the average score in category 1 (Not useful).

Note: Students were asked how they would rate, on a six-point scale, the usefulness of this strategy for helping them understand and memorize the text.

Table B.2.15b

Percentage and average scores of students by reading strategy: READING

I quickly read through the text twice

Canada, provinces, and OECD average	Not useful 1				2				3				4				5				Very useful 6			
	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error
Canada	**15.3**	**(0.4)**	**526**	**(3.0)**	**18.9**	**(0.4)**	**533***	**(2.6)**	**22.5**	**(0.4)**	**525**	**(2.8)**	**20.3**	**(0.4)**	**521**	**(2.3)**	**13.2**	**(0.3)**	**533**	**(3.0)**	**9.7**	**(0.3)**	**526**	**(3.6)**
Newfoundland and Labrador	15.8	(1.4)	513	(10.2)	21.5	(1.4)	525	(10.0)	21.4	(1.6)	515	(8.4)	18.8	(1.6)	526	(8.6)	11.9	(1.2)	541*	(10.8)	10.6	(1.1)	524	(12.1)
Prince Edward Island	15.0	(2.2)	500	(20.9)	18.0	(2.2)	510	(17.1)	23.3	(3.0)	519	(15.2)	21.0	(1.8)	490	(12.0)	11.8	(2.2)	512	(12.9)	10.9	(1.9)	507	(25.2)
Nova Scotia	15.8	(1.1)	516	(7.8)	21.1	(1.4)	532	(7.1)	23.1	(1.0)	514	(6.3)	18.5	(1.0)	518	(7.7)	11.8	(0.8)	521	(7.4)	9.7	(0.9)	524	(8.5)
New Brunswick	18.6	(1.2)	490	(9.6)	17.1	(1.2)	492	(7.3)	22.0	(1.5)	487	(6.5)	19.7	(1.4)	507	(7.3)	13.2	(1.2)	510	(7.6)	9.5	(1.0)	498	(11.3)
Quebec	22.6	(0.9)	523	(4.4)	21.5	(0.8)	530	(4.5)	21.0	(0.7)	532	(4.6)	16.1	(0.6)	527	(4.8)	10.6	(0.6)	526	(6.1)	8.2	(0.4)	514	(7.4)
Ontario	12.7	(0.8)	531	(7.2)	17.1	(0.7)	535	(5.5)	22.6	(0.9)	530	(5.3)	21.9	(0.9)	522	(4.7)	14.7	(0.6)	541	(5.9)	11.0	(0.6)	537	(6.0)
Manitoba	14.2	(0.9)	507	(5.9)	17.1	(1.1)	499	(7.4)	21.3	(1.0)	504	(6.4)	21.1	(1.1)	498	(6.4)	14.1	(0.9)	510	(7.2)	12.2	(1.1)	498	(7.5)
Saskatchewan	13.6	(0.8)	506	(6.5)	17.5	(0.8)	514	(6.5)	23.0	(1.1)	500	(4.7)	21.6	(1.1)	498	(5.6)	14.3	(0.9)	517	(6.5)	9.9	(0.7)	502	(7.9)
Alberta	14.2	(0.8)	547	(6.0)	20.1	(1.0)	561*	(5.8)	23.8	(1.1)	527*	(6.5)	20.9	(0.8)	524*	(6.4)	13.0	(0.7)	540	(6.8)	8.0	(0.8)	538	(9.0)
British Columbia	13.6	(0.8)	523	(7.3)	19.9	(1.2)	531	(6.9)	23.4	(1.1)	522	(5.9)	21.6	(1.0)	525	(5.4)	12.6	(0.7)	524	(9.4)	8.9	(0.6)	520	(8.4)
OECD average	**18.5**	**(0.1)**	**492**	**(0.7)**	**23.7**	**(0.1)**	**499***	**(0.6)**	**22.9**	**(0.1)**	**492**	**(0.6)**	**16.9**	**(0.1)**	**493**	**(0.6)**	**10.0**	**(0.1)**	**495***	**(0.8)**	**7.9**	**(0.1)**	**475***	**(1.0)**

* Significant difference compared to the average score in category 1 (Not useful).

Note: Students were asked how they would rate, on a six-point scale, the usefulness of this strategy for helping them understand and memorize the text.

Table B.2.15c

Percentage and average scores of students by reading strategy: READING

After reading the text, I discuss its content with other people

Canada, provinces, and OECD average	Not useful 1				2				3				4				5				Very useful 6			
	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error
Canada	**12.0**	**(0.4)**	**507**	**(3.3)**	**13.9**	**(0.3)**	**515**	**(3.0)**	**18.4**	**(0.3)**	**511**	**(2.7)**	**21.1**	**(0.4)**	**528***	**(2.3)**	**17.7**	**(0.4)**	**542***	**(2.9)**	**16.9**	**(0.4)**	**552***	**(2.6)**
Newfoundland and Labrador	13.2	(1.3)	496	(10.8)	16.2	(1.4)	510	(10.1)	18.9	(1.5)	510	(9.8)	18.2	(1.3)	523*	(9.3)	16.9	(1.2)	546*	(8.5)	16.5	(1.4)	544*	(9.2)
Prince Edward Island	10.8	(1.6)	466	(25.9)	14.6	(1.7)	499	(19.6)	17.9	(1.8)	499	(11.1)	27.4	(2.6)	506	(14.4)	13.8	(2.4)	556*	(16.2)	15.6	(2.1)	507	(15.1)
Nova Scotia	14.9	(1.1)	497	(7.7)	17.2	(1.1)	510	(6.5)	18.2	(1.0)	503	(7.2)	18.3	(1.2)	520*	(7.2)	18.0	(1.2)	554*	(7.8)	13.3	(0.9)	542*	(7.7)
New Brunswick	18.5	(1.2)	468	(8.7)	16.4	(1.2)	486	(6.9)	16.4	(1.2)	469	(7.6)	19.7	(1.3)	497*	(6.7)	15.7	(1.2)	524*	(7.0)	13.4	(1.0)	544*	(9.8)
Quebec	14.3	(0.8)	499	(4.7)	12.3	(0.6)	516*	(5.1)	15.6	(0.6)	511*	(4.6)	19.8	(0.6)	531*	(4.6)	18.2	(0.7)	541*	(5.5)	19.9	(0.8)	546*	(5.7)
Ontario	10.7	(0.8)	520	(7.4)	13.8	(0.5)	525	(5.8)	19.3	(0.8)	513	(5.3)	22.2	(0.8)	532	(4.3)	18.0	(0.8)	541*	(5.1)	16.0	(0.7)	558*	(5.1)
Manitoba	13.1	(0.8)	479	(6.2)	15.2	(1.0)	499*	(6.6)	19.0	(1.0)	487	(6.3)	19.9	(1.0)	502*	(4.7)	15.1	(0.9)	519*	(6.9)	17.6	(1.0)	527*	(5.6)
Saskatchewan	12.8	(0.8)	484	(6.4)	16.2	(1.0)	503*	(6.4)	20.7	(1.0)	485	(5.8)	20.1	(0.9)	506*	(5.6)	16.0	(1.0)	521*	(5.6)	14.1	(1.0)	538*	(5.7)
Alberta	10.9	(0.7)	526	(6.9)	13.2	(0.8)	521	(8.1)	19.1	(0.9)	525	(6.8)	21.3	(0.9)	530	(6.4)	17.6	(1.1)	559*	(7.5)	17.8	(1.0)	561*	(5.7)
British Columbia	11.4	(0.9)	501	(8.8)	15.1	(1.0)	500	(7.1)	18.5	(0.9)	513	(6.0)	21.0	(0.8)	528*	(6.2)	18.0	(0.8)	542*	(8.0)	16.0	(1.0)	555*	(6.9)
OECD average	**13.7**	**(0.1)**	**455**	**(0.7)**	**15.6**	**(0.1)**	**474***	**(0.7)**	**19.3**	**(0.1)**	**479***	**(0.6)**	**19.2**	**(0.1)**	**503***	**(0.6)**	**16.2**	**(0.1)**	**521***	**(0.7)**	**16.0**	**(0.1)**	**521***	**(0.7)**

* Significant difference compared to the average score in category 1 (Not useful).

Note: Students were asked how they would rate, on a six-point scale, the usefulness of this strategy for helping them understand and memorize the text.

Table B.2.15d

Percentage and average scores of students by reading strategy: READING

I underline important parts of the text

Canada, provinces, and OECD average	Not useful 1				2				3				4				5				Very useful 6			
	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error
Canada	**9.3**	**(0.4)**	**522**	**(4.2)**	**10.3**	**(0.3)**	**523**	**(3.5)**	**16.0**	**(0.3)**	**518**	**(2.6)**	**21.1**	**(0.3)**	**524**	**(2.9)**	**20.9**	**(0.4)**	**538***	**(2.5)**	**22.3**	**(0.5)**	**531***	**(2.5)**
Newfoundland and Labrador	7.2	(1.0)	507	(15.6)	7.8	(0.9)	514	(15.5)	15.4	(1.3)	505	(10.4)	20.6	(1.5)	512	(8.3)	20.0	(1.5)	532	(8.6)	29.0	(1.7)	538	(6.9)
Prince Edward Island	12.5	(1.8)	476	(24.0)	11.4	(1.7)	487	(21.7)	11.6	(1.7)	495	(24.1)	25.2	(2.4)	532*	(10.8)	21.1	(2.2)	508	(17.1)	18.3	(2.9)	514	(11.6)
Nova Scotia	11.7	(0.7)	510	(7.8)	11.1	(1.0)	491	(10.5)	15.2	(0.9)	518	(8.2)	19.3	(1.4)	514	(7.7)	21.5	(1.5)	545*	(6.5)	21.2	(1.3)	530*	(7.2)
New Brunswick	13.6	(1.0)	483	(12.2)	11.6	(0.9)	481	(9.4)	17.7	(1.4)	482	(8.6)	17.7	(1.2)	495	(8.4)	20.2	(1.3)	509	(6.4)	19.2	(1.4)	518*	(7.8)
Quebec	7.7	(0.5)	510	(7.4)	6.9	(0.4)	510	(7.3)	11.9	(0.6)	512	(6.0)	18.7	(0.7)	529*	(5.2)	23.2	(0.8)	543*	(4.2)	31.6	(0.9)	527*	(3.9)
Ontario	9.3	(0.8)	536	(8.6)	11.3	(0.6)	536	(7.1)	17.9	(0.7)	526	(4.8)	22.8	(0.6)	525	(5.0)	19.9	(0.8)	538	(4.8)	18.8	(0.8)	533	(4.6)
Manitoba	10.0	(0.8)	489	(7.4)	10.8	(0.7)	503	(9.1)	16.2	(1.1)	499	(8.4)	21.3	(1.0)	495	(5.0)	19.3	(1.0)	509*	(6.2)	22.4	(1.0)	514*	(5.5)
Saskatchewan	12.1	(0.7)	490	(6.3)	13.4	(0.7)	503	(8.2)	17.5	(1.0)	489	(6.3)	20.1	(0.9)	510*	(5.8)	19.6	(1.0)	517*	(5.6)	17.3	(1.1)	517*	(5.5)
Alberta	8.5	(0.8)	542	(9.7)	11.2	(0.8)	527	(6.8)	16.2	(1.0)	532	(7.3)	20.3	(1.1)	524	(8.1)	20.6	(1.0)	552	(5.9)	23.2	(1.3)	547	(5.3)
British Columbia	10.8	(1.0)	512	(8.7)	10.8	(0.8)	518	(6.7)	15.7	(0.9)	505	(7.2)	21.5	(0.8)	531	(6.9)	21.4	(0.9)	535*	(7.0)	19.8	(0.8)	534*	(6.2)
OECD average	**8.8**	**(0.1)**	**451**	**(0.9)**	**9.8**	**(0.1)**	**465***	**(0.9)**	**14.0**	**(0.1)**	**471***	**(0.7)**	**18.3**	**(0.1)**	**493***	**(0.7)**	**20.5**	**(0.1)**	**516***	**(0.6)**	**28.6**	**(0.1)**	**511***	**(0.5)**

* Significant difference compared to the average score in category 1 (Not useful).

Note: Students were asked how they would rate, on a six-point scale, the usefulness of this strategy for helping them understand and memorize the text.

Table B.2.15e

Percentage and average scores of students by reading strategy: READING

Canada, provinces, and OECD average	I summarize the text in my own words																			
	Not useful 1				2				3				4				5				Very useful 6			
	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error
Canada	**8.0**	**(0.3)**	**506**	**(4.6)**	**9.9**	**(0.3)**	**517**	**(3.6)**	**16.9**	**(0.4)**	**516***	**(2.9)**	**21.5**	**(0.4)**	**524***	**(2.5)**	**21.2**	**(0.4)**	**534***	**(2.1)**	**22.5**	**(0.5)**	**544***	**(2.7)**
Newfoundland and Labrador	8.1	(1.1)	488	(14.2)	9.5	(1.1)	488	(10.4)	14.9	(1.1)	508	(10.6)	23.0	(1.7)	526*	(8.7)	21.7	(1.5)	540*	(7.6)	22.8	(1.7)	538*	(8.5)
Prince Edward Island	9.2	(1.7)	450	(28.5)	13.0	(1.9)	495	(14.5)	16.6	(1.8)	508*	(16.8)	22.9	(2.3)	510*	(12.4)	17.3	(1.9)	516*	(15.5)	21.0	(2.8)	528*	(15.2)
Nova Scotia	9.9	(0.9)	489	(10.1)	10.8	(1.0)	505	(11.1)	17.1	(1.0)	499	(7.2)	20.7	(1.3)	518*	(6.9)	20.2	(1.2)	534*	(6.6)	21.4	(1.2)	551*	(7.3)
New Brunswick	12.9	(1.0)	471	(11.6)	12.0	(1.2)	477	(8.9)	19.4	(1.3)	488	(7.9)	19.6	(1.0)	491	(7.6)	19.7	(1.2)	505*	(6.5)	16.5	(1.2)	534*	(8.4)
Quebec	8.2	(0.6)	492	(6.6)	8.0	(0.5)	518*	(6.7)	13.8	(0.7)	514*	(5.5)	19.4	(0.6)	525*	(4.2)	22.5	(0.7)	537*	(4.5)	28.0	(0.9)	538*	(5.1)
Ontario	7.5	(0.6)	521	(8.4)	11.0	(0.7)	530	(6.7)	18.5	(0.8)	522	(5.1)	22.8	(0.7)	527	(4.8)	20.1	(0.7)	537	(4.7)	20.1	(1.0)	547*	(4.9)
Manitoba	8.6	(0.7)	480	(8.7)	8.1	(0.7)	489	(8.1)	15.5	(1.0)	487	(6.6)	21.7	(1.0)	504*	(5.4)	23.1	(1.1)	507*	(5.4)	22.9	(1.0)	522*	(5.3)
Saskatchewan	8.1	(0.6)	478	(8.0)	9.4	(0.8)	493	(6.7)	18.2	(0.9)	478	(5.6)	22.5	(1.0)	514*	(5.4)	21.6	(1.1)	520*	(5.7)	20.2	(1.1)	522*	(5.4)
Alberta	6.9	(0.8)	526	(10.0)	9.7	(0.9)	513	(8.0)	17.4	(1.0)	527	(6.7)	21.4	(1.1)	533	(7.9)	20.7	(1.2)	542	(5.2)	23.9	(1.2)	560*	(5.5)
British Columbia	8.4	(0.6)	500	(10.7)	9.6	(0.6)	504	(8.7)	16.2	(0.8)	514	(6.9)	21.0	(0.7)	520	(7.4)	22.9	(1.0)	534*	(6.8)	21.8	(1.2)	547*	(6.3)
OECD average	**7.7**	**(0.1)**	**442**	**(1.0)**	**9.7**	**(0.1)**	**460***	**(0.8)**	**15.1**	**(0.1)**	**471***	**(0.7)**	**18.8**	**(0.1)**	**494***	**(0.6)**	**22.0**	**(0.1)**	**511***	**(0.6)**	**26.8**	**(0.1)**	**518***	**(0.6)**

* Significant difference compared to the average score in category 1 (Not useful).

Note: Students were asked how they would rate, on a six-point scale, the usefulness of this strategy for helping them understand and memorize the text.

Table B.2.15f

Percentage and average scores of students by reading strategy: READING

I read the text aloud to another person

Canada, provinces, and OECD average	Not useful 1				2				3				4				5				Very useful 6			
	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error	%	Standard error	Average	Standard error
Canada	**25.8**	**(0.5)**	**523**	**(2.5)**	**19.5**	**(0.3)**	**532***	**(2.6)**	**18.7**	**(0.4)**	**528**	**(2.7)**	**15.4**	**(0.4)**	**526**	**(3.2)**	**10.8**	**(0.3)**	**528**	**(3.4)**	**9.8**	**(0.3)**	**527**	**(4.1)**
Newfoundland and Labrador	28.8	(1.8)	508	(7.7)	19.9	(1.7)	526	(8.3)	17.3	(1.6)	528	(9.9)	15.2	(1.4)	524	(9.4)	8.8	(1.0)	539*	(13.8)	10.0	(1.1)	540*	(11.4)
Prince Edward Island	24.3	(3.3)	501	(15.7)	21.7	(2.8)	498	(13.3)	19.1	(2.3)	514	(19.2)	13.1	(3.3)	512	(23.3)	9.9	(1.8)	535	(22.3)	11.8	(1.8)	497	(16.3)
Nova Scotia	27.0	(1.2)	512	(5.8)	21.6	(1.3)	520	(8.1)	18.4	(1.1)	513	(7.3)	14.6	(0.9)	524	(9.1)	10.4	(0.8)	544*	(9.4)	8.0	(0.8)	536	(12.5)
New Brunswick	31.1	(1.3)	488	(6.0)	18.8	(1.1)	496	(8.0)	19.1	(1.3)	496	(8.0)	13.6	(1.1)	502	(8.8)	9.2	(1.0)	509*	(9.5)	8.2	(0.8)	506	(12.9)
Quebec	33.0	(1.0)	516	(3.7)	18.3	(0.6)	538*	(4.6)	16.1	(0.7)	538*	(4.7)	13.8	(0.6)	530*	(5.5)	9.2	(0.5)	525	(6.9)	9.6	(0.6)	514	(7.5)
Ontario	24.0	(1.1)	539	(5.2)	20.3	(0.8)	534	(4.6)	18.9	(0.8)	530	(5.7)	15.9	(0.8)	527	(6.1)	10.8	(0.5)	524*	(5.9)	10.1	(0.6)	532	(7.1)
Manitoba	23.2	(1.0)	496	(5.7)	17.9	(0.9)	510	(6.8)	18.7	(1.0)	505	(7.9)	17.4	(1.0)	502	(5.7)	11.6	(0.8)	506	(7.3)	11.2	(0.8)	496	(7.7)
Saskatchewan	24.5	(1.0)	501	(4.8)	19.3	(1.1)	513	(5.2)	20.6	(1.0)	500	(5.1)	15.7	(0.7)	505	(6.1)	10.2	(0.8)	513	(7.9)	9.7	(0.7)	506	(9.1)
Alberta	23.8	(1.2)	531	(5.7)	19.1	(0.8)	540	(6.5)	19.9	(0.9)	538	(5.5)	15.8	(0.8)	540	(8.9)	12.1	(0.8)	543	(7.8)	9.3	(0.7)	545	(8.2)
British Columbia	22.3	(1.1)	511	(6.2)	19.3	(0.8)	529*	(6.0)	20.4	(1.0)	525	(5.9)	16.0	(0.8)	524	(7.5)	12.5	(0.7)	535*	(9.2)	9.5	(0.8)	533*	(9.9)
OECD average	**22.6**	**(0.1)**	**478**	**(0.6)**	**19.2**	**(0.1)**	**495***	**(0.6)**	**19.3**	**(0.1)**	**497***	**(0.6)**	**15.8**	**(0.1)**	**504***	**(0.7)**	**11.6**	**(0.1)**	**506***	**(0.8)**	**11.5**	**(0.1)**	**483***	**(0.9)**

* Significant difference compared to the average score in category 1 (Not useful).

Note: Students were asked how they would rate, on a six-point scale, the usefulness of this strategy for helping them understand and memorize the text.

Table B.3.1a

Percentage of students at each proficiency level: MATHEMATICS

Country or province	Proficiency levels													
	Below Level 1		Level 1		Level 2		Level 3		Level 4		Level 5		Level 6	
	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error
B-S-J-Z (China)	0.5	(0.1)	1.9	(0.3)	6.9	(0.5)	17.5	(0.8)	28.9	(1.0)	27.8	(1.0)	16.5	(1.1)
Macao (China)	1.0	(0.2)	4.0	(0.4)	12.3	(0.8)	24.8	(0.9)	30.3	(1.2)	20.0	(0.8)	7.7	(0.6)
Singapore	1.8	(0.2)	5.3	(0.4)	11.1	(0.5)	19.1	(0.7)	25.8	(0.8)	23.2	(0.7)	13.8	(0.8)
Hong Kong (China)	2.8	(0.4)	6.4	(0.6)	13.5	(0.7)	22.1	(0.7)	26.3	(0.9)	19.5	(0.8)	9.5	(0.8)
Estonia	2.1	(0.3)	8.1	(0.6)	20.8	(0.8)	29.0	(0.8)	24.6	(0.8)	11.8	(0.7)	3.7	(0.4)
Japan	2.9	(0.4)	8.6	(0.6)	18.7	(0.8)	26.4	(0.9)	25.1	(1.0)	14.0	(0.8)	4.3	(0.5)
Quebec	**3.6**	**(0.6)**	**8.1**	**(0.8)**	**16.6**	**(0.9)**	**25.5**	**(1.3)**	**25.2**	**(1.2)**	**14.7**	**(0.9)**	**6.3**	**(0.6)**
Chinese Taipei	5.0	(0.4)	9.0	(0.5)	16.1	(0.7)	23.2	(0.8)	23.5	(0.8)	15.6	(0.8)	7.6	(0.8)
Denmark	3.7	(0.4)	10.9	(0.6)	22.0	(0.9)	28.8	(0.8)	23.0	(0.8)	9.5	(0.6)	2.1	(0.3)
Poland	4.2	(0.5)	10.5	(0.6)	20.7	(0.8)	26.5	(0.8)	22.3	(0.7)	11.7	(0.7)	4.1	(0.5)
Finland	3.8	(0.4)	11.1	(0.6)	22.3	(0.9)	28.9	(1.0)	22.7	(0.8)	9.3	(0.5)	1.8	(0.3)
Korea	5.4	(0.5)	9.6	(0.6)	17.3	(0.8)	23.4	(0.7)	22.9	(0.8)	14.4	(0.7)	6.9	(0.8)
Ireland	3.8	(0.5)	11.9	(0.7)	24.7	(0.8)	30.5	(0.8)	20.8	(0.8)	7.2	(0.6)	1.0	(0.2)
Netherlands	4.5	(0.6)	11.2	(0.7)	19.0	(1.0)	23.2	(1.1)	23.6	(0.9)	14.2	(0.8)	4.3	(0.5)
Ontario	**4.6**	**(0.7)**	**11.2**	**(0.9)**	**21.3**	**(1.2)**	**25.8**	**(1.4)**	**21.7**	**(1.6)**	**11.5**	**(1.0)**	**3.9**	**(0.6)**
Alberta	**5.3**	**(1.0)**	**10.9**	**(1.4)**	**20.7**	**(1.8)**	**26.8**	**(1.8)**	**21.6**	**(1.4)**	**11.5**	**(1.2)**	**3.4**	**(0.7)**
Canada	**5.0**	**(0.4)**	**11.3**	**(0.5)**	**20.8**	**(0.6)**	**25.9**	**(0.6)**	**21.7**	**(0.7)**	**11.3**	**(0.5)**	**4.0**	**(0.3)**
Slovenia	4.8	(0.6)	11.7	(0.7)	21.6	(0.9)	26.4	(0.9)	22.0	(0.8)	10.5	(0.8)	3.1	(0.4)
Switzerland	4.8	(0.4)	12.0	(0.8)	19.5	(0.9)	24.4	(1.0)	22.3	(0.9)	12.1	(0.7)	4.9	(0.5)
Latvia	4.4	(0.5)	12.9	(0.8)	25.8	(0.9)	29.4	(1.0)	19.0	(0.8)	7.1	(0.5)	1.4	(0.2)
British Columbia	**6.0**	**(0.9)**	**12.8**	**(1.3)**	**21.7**	**(1.3)**	**25.3**	**(1.5)**	**20.6**	**(1.4)**	**9.9**	**(1.2)**	**3.7**	**(0.8)**
Sweden	6.0	(0.6)	12.8	(0.8)	21.9	(0.9)	25.7	(0.8)	21.0	(0.8)	10.0	(0.7)	2.6	(0.3)
Norway	6.5	(0.5)	12.4	(0.6)	21.8	(0.8)	26.5	(0.8)	20.6	(0.9)	9.8	(0.6)	2.4	(0.4)
United Kingdom	6.4	(0.5)	12.8	(0.6)	22.0	(0.8)	25.5	(0.7)	20.4	(0.7)	9.8	(0.6)	3.1	(0.4)
Belgium	6.9	(0.7)	12.8	(0.6)	18.6	(0.7)	23.8	(0.8)	22.2	(0.7)	12.5	(0.6)	3.2	(0.4)
Nova Scotia	**6.4**	**(1.3)**	**13.9**	**(1.4)**	**24.5**	**(1.4)**	**26.2**	**(1.4)**	**18.7**	**(1.5)**	**7.9**	**(1.2)**	**2.4**	**(0.8)**
Czech Republic	6.6	(0.7)	13.8	(0.7)	22.1	(0.8)	25.2	(0.9)	19.6	(0.7)	9.5	(0.5)	3.1	(0.3)
Iceland	7.4	(0.5)	13.3	(0.7)	22.0	(1.0)	26.7	(1.0)	20.2	(0.9)	8.5	(0.6)	1.9	(0.3)
Austria	7.3	(0.7)	13.8	(0.8)	20.8	(1.0)	24.9	(0.9)	20.6	(0.8)	10.0	(0.7)	2.5	(0.3)
Germany	7.6	(0.7)	13.5	(0.8)	20.7	(0.9)	24.0	(0.8)	20.8	(0.8)	10.5	(0.7)	2.8	(0.3)
Newfoundland and Labrador	**6.0**	**(1.5)**	**15.1**	**(1.6)**	**26.7**	**(2.4)**	**26.7**	**(2.1)**	**16.9**	**(2.1)**	**6.9**	**(1.9)**	**U‡**	**(0.7)**
France	8.0	(0.5)	13.2	(0.6)	21.1	(0.8)	25.6	(0.8)	21.0	(0.8)	9.2	(0.6)	1.8	(0.3)
Saskatchewan	**6.4**	**(0.8)**	**15.2**	**(1.6)**	**26.3**	**(1.7)**	**27.7**	**(1.7)**	**17.8**	**(1.6)**	**5.6**	**(0.8)**	**U‡**	**(0.4)**
Russian Federation	6.8	(0.7)	14.9	(0.8)	25.0	(0.9)	27.5	(0.9)	17.8	(0.8)	6.6	(0.6)	1.5	(0.2)
New Zealand	7.6	(0.5)	14.2	(0.6)	22.8	(0.8)	25.0	(0.7)	18.9	(0.7)	8.8	(0.4)	2.7	(0.3)
New Brunswick	**7.5**	**(1.0)**	**14.7**	**(1.4)**	**23.8**	**(1.7)**	**25.1**	**(1.6)**	**18.5**	**(1.8)**	**8.0**	**(1.4)**	**2.3**	**(0.7)**
Australia	7.6	(0.5)	14.8	(0.5)	23.4	(0.5)	25.6	(0.5)	18.2	(0.5)	8.0	(0.4)	2.5	(0.3)
Portugal	9.3	(0.6)	14.0	(0.8)	20.9	(0.8)	24.5	(1.1)	19.7	(0.8)	9.1	(0.6)	2.5	(0.3)
Prince Edward Island	**8.3**	**(2.7)**	**15.5**	**(2.9)**	**23.0**	**(2.7)**	**25.9**	**(3.3)**	**18.2**	**(3.8)**	**U‡**	**(2.6)**	**U‡**	**(0.9)**
Italy	9.1	(0.8)	14.8	(0.9)	22.9	(1.0)	25.6	(0.9)	18.1	(0.8)	7.5	(0.6)	2.0	(0.3)
Spain	8.7	(0.4)	16.0	(0.5)	24.4	(0.4)	26.0	(0.6)	17.5	(0.5)	6.2	(0.3)	1.1	(0.1)
Manitoba	**8.0**	**(0.9)**	**16.8**	**(1.3)**	**24.9**	**(1.9)**	**26.2**	**(1.4)**	**16.5**	**(1.1)**	**6.3**	**(0.9)**	**U**	**(0.4)**
Slovak Republic	10.7	(0.9)	14.4	(0.6)	21.4	(0.9)	24.2	(0.9)	18.6	(0.9)	8.4	(0.6)	2.3	(0.3)
Lithuania	9.3	(0.6)	16.4	(0.7)	24.2	(0.7)	25.2	(0.9)	16.5	(0.8)	6.8	(0.5)	1.7	(0.2)
Hungary	9.6	(0.7)	16.1	(0.8)	23.6	(0.9)	25.2	(1.0)	17.5	(0.8)	6.5	(0.5)	1.4	(0.3)
United States	10.2	(0.8)	16.9	(0.9)	24.2	(1.0)	24.1	(1.0)	16.3	(0.9)	6.8	(0.7)	1.5	(0.3)
Luxembourg	10.9	(0.6)	16.4	(0.6)	21.7	(0.8)	22.6	(0.7)	17.7	(0.7)	8.6	(0.5)	2.3	(0.3)

Table B.3.1a (cont'd)

Percentage of students at each proficiency level: MATHEMATICS

Country or province	Proficiency levels													
	Below Level 1		Level 1		Level 2		Level 3		Level 4		Level 5		Level 6	
	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error
Belarus	11.4	(0.7)	18.0	(0.7)	24.7	(0.9)	23.4	(0.7)	15.2	(0.7)	6.1	(0.5)	1.2	(0.2)
Malta	14.3	(0.7)	15.9	(0.8)	21.5	(1.0)	23.2	(1.1)	16.6	(0.7)	6.7	(0.6)	1.8	(0.3)
Croatia	11.0	(0.8)	20.2	(0.8)	27.4	(0.9)	23.3	(0.8)	13.0	(0.8)	4.3	(0.5)	0.8	(0.2)
Israel	17.7	(1.1)	16.4	(0.8)	20.7	(0.7)	21.0	(0.8)	15.4	(0.8)	7.0	(0.6)	1.8	(0.3)
Greece	15.3	(1.1)	20.5	(0.9)	26.8	(0.9)	22.5	(1.0)	11.1	(0.6)	3.2	(0.4)	0.5	(0.2)
Ukraine	15.6	(1.2)	20.3	(1.0)	26.2	(1.0)	21.5	(1.0)	11.5	(0.8)	4.0	(0.5)	1.0	(0.3)
Turkey	13.8	(0.9)	22.9	(0.8)	27.3	(0.8)	20.4	(0.8)	10.9	(0.5)	3.9	(0.4)	0.9	(0.3)
Cyprus	17.2	(0.6)	19.7	(0.7)	24.7	(0.9)	22.0	(0.8)	12.1	(0.5)	3.7	(0.4)	0.7	(0.1)
Serbia	18.1	(1.1)	21.6	(0.8)	24.1	(0.8)	19.2	(0.8)	11.7	(0.7)	4.2	(0.4)	1.0	(0.2)
Malaysia	16.1	(0.9)	25.4	(1.0)	28.3	(0.9)	19.3	(0.9)	8.5	(0.7)	2.2	(0.4)	U‡	(0.1)
Albania	16.9	(0.9)	25.5	(0.9)	28.6	(1.0)	19.3	(0.8)	7.5	(0.7)	2.0	(0.2)	U‡	(0.1)
Bulgaria	21.9	(1.4)	22.5	(0.8)	23.7	(1.0)	18.2	(1.0)	9.4	(0.7)	3.3	(0.5)	0.9	(0.2)
United Arab Emirates	24.2	(0.9)	21.3	(0.6)	21.5	(0.5)	17.2	(0.6)	10.4	(0.5)	4.2	(0.3)	1.2	(0.1)
Montenegro	19.9	(0.7)	26.3	(0.7)	27.3	(0.7)	17.9	(0.5)	6.9	(0.4)	1.6	(0.2)	U‡	(0.1)
Romania	22.6	(1.6)	23.9	(1.2)	24.5	(1.1)	17.3	(1.1)	8.5	(1.0)	2.7	(0.5)	U‡	(0.2)
Brunei Darussalam	22.1	(0.8)	25.7	(0.8)	24.0	(0.6)	16.2	(0.5)	8.9	(0.5)	2.7	(0.3)	0.4‡	(0.1)
Kazakhstan	22.3	(0.8)	26.8	(0.6)	26.6	(0.6)	16.0	(0.6)	6.3	(0.4)	1.6	(0.2)	0.3	(0.1)
Moldova	26.1	(0.9)	24.2	(0.9)	23.5	(0.9)	16.5	(0.7)	7.3	(0.6)	2.0	(0.3)	U‡	(0.1)
Uruguay	24.6	(1.1)	26.1	(1.3)	26.5	(1.0)	15.8	(1.0)	6.0	(0.6)	1.0	(0.2)	U‡	(0.0)
Baku (Azerbaijan)	24.7	(1.0)	26.1	(0.8)	25.2	(0.9)	15.7	(0.7)	6.4	(0.6)	1.7	(0.3)	U‡	(0.1)
Chile	24.7	(1.1)	27.2	(0.9)	25.5	(0.9)	15.6	(0.8)	5.7	(0.5)	1.1	(0.2)	U‡	(0.0)
Thailand	25.0	(1.3)	27.7	(1.0)	24.6	(1.0)	14.3	(0.8)	6.1	(0.7)	1.9	(0.3)	0.3	(0.1)
Qatar	29.7	(0.7)	24.0	(0.5)	21.9	(0.5)	14.6	(0.4)	6.9	(0.3)	2.4	(0.2)	0.6	(0.1)
Mexico	26.0	(1.2)	30.3	(0.9)	26.4	(0.9)	13.1	(0.8)	3.7	(0.5)	0.5	(0.1)	U‡	(0.0)
Bosnia and Herzegovina	28.7	(1.3)	28.9	(1.0)	24.2	(0.9)	13.1	(0.8)	4.3	(0.5)	0.7	(0.2)	U‡	(0.0)
Jordan	30.7	(1.4)	28.6	(0.8)	24.0	(0.9)	12.4	(0.8)	3.6	(0.5)	0.6	(0.2)	U‡	(0.1)
Lebanon	38.0	(1.7)	21.8	(1.0)	19.1	(1.1)	13.1	(0.9)	6.0	(0.5)	1.7	(0.3)	U‡	(0.1)
Costa Rica	27.8	(1.3)	32.2	(1.2)	25.6	(1.2)	11.2	(1.0)	2.8	(0.5)	U‡	(0.1)	U‡	(0.0)
Peru	32.0	(1.2)	28.3	(0.8)	23.1	(0.9)	11.6	(0.7)	4.1	(0.5)	0.8	(0.2)	U‡	(0.0)
Republic of North Macedonia	35.2	(0.8)	25.8	(0.8)	21.3	(0.7)	12.1	(0.7)	4.5	(0.4)	1.0	(0.2)	U‡	(0.1)
Georgia	33.7	(1.2)	27.3	(1.1)	21.6	(0.8)	11.9	(0.8)	4.4	(0.5)	0.9	(0.3)	U‡	(0.1)
Colombia	35.5	(1.7)	29.9	(1.2)	21.1	(0.9)	10.0	(0.7)	3.1	(0.4)	0.5	(0.1)	U‡	(0.0)
Brazil	41.0	(1.0)	27.1	(0.7)	18.2	(0.7)	9.3	(0.5)	3.4	(0.3)	0.8	(0.2)	U‡	(0.0)
Argentina	40.5	(1.6)	28.5	(1.0)	19.6	(0.9)	8.8	(0.7)	2.3	(0.3)	0.3	(0.1)	U‡	(0.0)
Indonesia	40.6	(1.6)	31.3	(1.2)	18.6	(1.0)	6.8	(0.7)	2.3	(0.5)	U	(0.2)	U‡	(0.0)
Saudi Arabia	42.8	(1.6)	29.9	(1.0)	18.8	(1.1)	6.8	(0.6)	1.5	(0.3)	U‡	(0.1)	U‡	(0.0)
Morocco	47.1	(1.9)	28.5	(1.0)	16.9	(1.0)	6.2	(0.6)	1.2	(0.2)	U‡	(0.1)	U‡	(0.0)
Kosovo	47.0	(1.0)	29.6	(1.1)	16.5	(0.8)	5.4	(0.4)	1.4	(0.2)	U‡	(0.1)	U‡	(0.0)
Philippines	54.4	(1.7)	26.3	(0.9)	13.6	(1.0)	4.7	(0.7)	0.9	(0.3)	U‡	(0.1)	U‡	(0.0)
Panama	53.7	(1.4)	27.5	(1.0)	13.5	(0.8)	4.3	(0.6)	0.9	(0.2)	U‡	(0.1)	U‡	(0.0)
Dominican Republic	69.3	(1.4)	21.3	(1.0)	7.3	(0.6)	1.8	(0.4)	U	(0.1)	U‡	(0.0)	0.0‡	(0.0)
OECD average	**9.1**	**(0.1)**	**14.8**	**(0.1)**	**22.2**	**(0.1)**	**24.4**	**(0.1)**	**18.5**	**(0.1)**	**8.5**	**(0.1)**	**2.4**	**(0.1)**

‡ There are fewer than 30 observations.
U Too unreliable to be published.
Note: Countries and provinces have been sorted in descending order by the total percentage of students who attained Level 2 or higher. B-S-J-Z (China) represents Beijing, Shanghai, Jiangsu, and Zhejiang. See OECD 2019b, p. 21, for a note regarding Cyprus. The data for Vietnam have not yet been fully validated: due to a lack of consistency in the response pattern of some performance data, the OECD cannot yet assure full international comparability of the results.

Table B.3.1b

Proportion of students who performed below Level 2, at Level 2 or above, and at Levels 5 and 6: MATHEMATICS

Country or province	Proficiency levels					
	Below Level 2		Level 2 or above		Levels 5 and 6	
	%	Standard error	%	Standard error	%	Standard error
B-S-J-Z (China)	2.4	(0.4)	97.6	(0.4)	44.3	(1.3)
Macao (China)	5.0	(0.5)	95.0	(0.5)	27.6	(0.8)
Singapore	7.1	(0.4)	92.9	(0.4)	36.9	(0.8)
Hong Kong (China)	9.2	(0.8)	90.8	(0.8)	29.0	(1.1)
Estonia	10.2	(0.6)	89.8	(0.6)	15.5	(0.8)
Japan	11.5	(0.8)	88.5	(0.8)	18.3	(1.1)
Quebec	**11.7**	**(1.1)**	**88.3**	**(1.1)**	**21.1**	**(1.3)**
Chinese Taipei	14.0	(0.8)	86.0	(0.8)	23.2	(1.1)
Denmark	14.6	(0.6)	85.4	(0.6)	11.6	(0.7)
Poland	14.7	(0.8)	85.3	(0.8)	15.8	(1.0)
Finland	15.0	(0.7)	85.0	(0.7)	11.1	(0.6)
Korea	15.0	(0.9)	85.0	(0.9)	21.4	(1.1)
Ireland	15.7	(0.8)	84.3	(0.8)	8.2	(0.7)
Netherlands	15.8	(1.1)	84.2	(1.1)	18.4	(1.0)
Ontario	**15.8**	**(1.2)**	**84.2**	**(1.2)**	**15.4**	**(1.5)**
Alberta	**16.2**	**(2.0)**	**83.8**	**(2.0)**	**14.8**	**(1.6)**
Canada	**16.3**	**(0.7)**	**83.7**	**(0.7)**	**15.3**	**(0.7)**
Slovenia	16.4	(0.6)	83.6	(0.6)	13.6	(0.7)
Switzerland	16.8	(0.9)	83.2	(0.9)	17.0	(1.0)
Latvia	17.3	(1.0)	82.7	(1.0)	8.5	(0.6)
British Columbia	**18.8**	**(1.8)**	**81.2**	**(1.8)**	**13.6**	**(1.7)**
Sweden	18.8	(1.0)	81.2	(1.0)	12.6	(0.8)
Norway	18.9	(0.8)	81.1	(0.8)	12.2	(0.7)
United Kingdom	19.2	(0.9)	80.8	(0.9)	12.9	(0.8)
Belgium	19.7	(0.9)	80.3	(0.9)	15.7	(0.9)
Nova Scotia	**20.3**	**(2.2)**	**79.7**	**(2.2)**	**10.3**	**(1.6)**
Czech Republic	20.4	(1.1)	79.6	(1.1)	12.7	(0.7)
Iceland	20.7	(1.0)	79.3	(1.0)	10.4	(0.6)
Austria	21.1	(1.2)	78.9	(1.2)	12.6	(0.8)
Germany	21.1	(1.1)	78.9	(1.1)	13.3	(0.8)
Newfoundland and Labrador	**21.1**	**(2.3)**	**78.9**	**(2.3)**	**8.6**	**(2.1)**
France	21.3	(0.8)	78.7	(0.8)	11.0	(0.8)
Saskatchewan	**21.6**	**(2.1)**	**78.4**	**(2.1)**	**6.6**	**(0.9)**
Russian Federation	21.6	(1.3)	78.4	(1.3)	8.1	(0.7)
New Zealand	21.8	(0.8)	78.2	(0.8)	11.6	(0.5)
New Brunswick	**22.3**	**(2.0)**	**77.7**	**(2.0)**	**10.3**	**(1.7)**
Australia	22.4	(0.7)	77.6	(0.7)	10.5	(0.5)
Portugal	23.3	(1.0)	76.7	(1.0)	11.6	(0.7)
Prince Edward Island	**23.7**	**(3.9)**	**76.3**	**(3.9)**	**9.1‡**	**(2.9)**
Italy	23.8	(1.1)	76.2	(1.1)	9.5	(0.8)
Spain	24.7	(0.6)	75.3	(0.6)	7.3	(0.4)
Manitoba	**24.8**	**(1.6)**	**75.2**	**(1.6)**	**7.6**	**(1.0)**
Slovak Republic	25.1	(1.1)	74.9	(1.1)	10.7	(0.7)
Lithuania	25.6	(0.9)	74.4	(0.9)	8.4	(0.5)
Hungary	25.6	(1.0)	74.4	(1.0)	8.0	(0.7)
United States	27.1	(1.4)	72.9	(1.4)	8.3	(0.8)
Luxembourg	27.2	(0.7)	72.8	(0.7)	10.8	(0.6)

Table B.3.1b (cont'd)

Proportion of students who performed below Level 2, at Level 2 or above, and at Levels 5 and 6: MATHEMATICS

Country or province	Proficiency levels					
	Below Level 2		Level 2 or above		Levels 5 and 6	
	%	Standard error	%	Standard error	%	Standard error
Belarus	29.4	(1.1)	70.6	(1.1)	7.3	(0.6)
Malta	30.2	(1.0)	69.8	(1.0)	8.5	(0.7)
Croatia	31.2	(1.3)	68.8	(1.3)	5.1	(0.5)
Israel	34.1	(1.4)	65.9	(1.4)	8.8	(0.6)
Greece	35.8	(1.5)	64.2	(1.5)	3.7	(0.5)
Ukraine	35.9	(1.6)	64.1	(1.6)	5.0	(0.6)
Turkey	36.7	(1.1)	63.3	(1.1)	4.8	(0.6)
Cyprus	36.9	(0.7)	63.1	(0.7)	4.4	(0.4)
Serbia	39.7	(1.4)	60.3	(1.4)	5.2	(0.4)
Malaysia	41.5	(1.4)	58.5	(1.4)	2.5	(0.4)
Albania	42.4	(1.4)	57.6	(1.4)	2.3	(0.3)
Bulgaria	44.4	(1.7)	55.6	(1.7)	4.2	(0.6)
United Arab Emirates	45.5	(0.9)	54.5	(0.9)	5.4	(0.3)
Montenegro	46.2	(0.8)	53.8	(0.8)	1.8	(0.2)
Romania	46.6	(2.3)	53.4	(2.3)	3.2	(0.6)
Brunei Darussalam	47.9	(0.7)	52.1	(0.7)	3.0	(0.3)
Kazakhstan	49.1	(0.9)	50.9	(0.9)	1.9	(0.2)
Moldova	50.3	(1.1)	49.7	(1.1)	2.4	(0.4)
Uruguay	50.7	(1.5)	49.3	(1.5)	1.0	(0.3)
Baku (Azerbaijan)	50.7	(1.3)	49.3	(1.3)	2.0	(0.3)
Chile	51.9	(1.3)	48.1	(1.3)	1.2	(0.2)
Thailand	52.7	(1.7)	47.3	(1.7)	2.3	(0.4)
Qatar	53.7	(0.6)	46.3	(0.6)	2.9	(0.2)
Mexico	56.2	(1.4)	43.8	(1.4)	0.5	(0.1)
Bosnia and Herzegovina	57.6	(1.6)	42.4	(1.6)	0.8	(0.2)
Jordan	59.3	(1.6)	40.7	(1.6)	0.7	(0.2)
Lebanon	59.8	(1.7)	40.2	(1.7)	2.0	(0.3)
Costa Rica	60.0	(1.9)	40.0	(1.9)	U‡	(0.1)
Peru	60.3	(1.3)	39.7	(1.3)	0.9	(0.2)
Republic of North Macedonia	61.0	(0.9)	39.0	(0.9)	1.1	(0.2)
Georgia	61.1	(1.3)	38.9	(1.3)	1.0	(0.3)
Colombia	65.4	(1.6)	34.6	(1.6)	0.5	(0.1)
Brazil	68.1	(1.0)	31.9	(1.0)	0.9	(0.2)
Argentina	69.0	(1.3)	31.0	(1.3)	0.3	(0.1)
Indonesia	71.9	(1.5)	28.1	(1.5)	0.5	(0.2)
Saudi Arabia	72.7	(1.5)	27.3	(1.5)	U‡	(0.1)
Morocco	75.6	(1.6)	24.4	(1.6)	U‡	(0.1)
Kosovo	76.6	(0.9)	23.4	(0.9)	U‡	(0.1)
Philippines	80.7	(1.6)	19.3	(1.6)	U‡	(0.1)
Panama	81.2	(1.3)	18.8	(1.3)	U‡	(0.1)
Dominican Republic	90.6	(1.0)	9.4	(1.0)	U‡	(0.0)
OECD average	**24.0**	**(0.2)**	**76.0**	**(0.2)**	**10.9**	**(0.1)**

‡ There are fewer than 30 observations.
U Too unreliable to be published.
Note: Countries and provinces have been sorted in descending order by the total percentage of students who attained Level 2 or higher. B-S-J-Z (China) represents Beijing, Shanghai, Jiangsu, and Zhejiang. See OECD 2019b, p. 21, for a note regarding Cyprus. The data for Vietnam have not yet been fully validated: due to a lack of consistency in the response pattern of some performance data, the OECD cannot yet assure full international comparability of the results.

Table B.3.2a

Percentage of students at each proficiency level: SCIENCE

Country or province	Proficiency levels													
	Below Level 1		Level 1		Level 2		Level 3		Level 4		Level 5		Level 6	
	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error
B-S-J-Z (China)	U	(0.1)	1.8	(0.3)	8.4	(0.6)	23.4	(0.9)	34.6	(1.0)	24.3	(1.1)	7.2	(0.7)
Macao (China)	0.9	(0.2)	5.1	(0.5)	17.2	(0.7)	32.3	(1.0)	30.8	(0.9)	11.9	(0.6)	1.7	(0.3)
Estonia	1.2	(0.2)	7.5	(0.5)	21.5	(0.7)	32.1	(0.9)	25.4	(0.8)	10.2	(0.5)	2.0	(0.2)
Singapore	1.9	(0.2)	7.1	(0.4)	15.1	(0.7)	25.4	(0.7)	29.7	(0.7)	17.0	(0.5)	3.8	(0.3)
Japan	2.0	(0.3)	8.9	(0.6)	19.9	(0.8)	29.7	(1.1)	26.5	(0.9)	11.4	(0.7)	1.6	(0.3)
Alberta	**2.3**	**(0.5)**	**8.7**	**(1.1)**	**18.8**	**(1.2)**	**28.5**	**(1.6)**	**26.8**	**(1.6)**	**12.2**	**(1.4)**	**2.7**	**(0.7)**
Hong Kong (China)	2.6	(0.3)	8.9	(0.6)	21.7	(0.8)	33.8	(0.9)	25.0	(0.9)	7.1	(0.6)	0.7	(0.2)
Quebec	**2.3**	**(0.4)**	**9.4**	**(0.8)**	**21.1**	**(1.3)**	**31.3**	**(1.3)**	**25.5**	**(1.3)**	**9.1**	**(0.8)**	**1.3**	**(0.3)**
Finland	3.2	(0.3)	9.7	(0.6)	21.1	(0.7)	28.9	(0.8)	24.9	(0.8)	10.5	(0.6)	1.8	(0.3)
Ontario	**2.8**	**(0.4)**	**10.1**	**(0.9)**	**23.0**	**(1.1)**	**29.3**	**(1.1)**	**23.2**	**(1.2)**	**9.6**	**(0.9)**	**1.9**	**(0.3)**
Canada	**3.0**	**(0.2)**	**10.5**	**(0.4)**	**22.4**	**(0.6)**	**29.3**	**(0.6)**	**23.5**	**(0.7)**	**9.5**	**(0.5)**	**1.8**	**(0.2)**
Poland	2.7	(0.3)	11.1	(0.7)	24.9	(0.8)	30.0	(1.0)	22.0	(0.8)	8.1	(0.7)	1.2	(0.2)
Korea	3.5	(0.4)	10.6	(0.7)	21.0	(0.8)	28.6	(0.9)	24.5	(0.9)	10.0	(0.6)	1.8	(0.3)
Slovenia	2.7	(0.3)	11.9	(0.6)	24.6	(0.8)	31.8	(1.0)	21.8	(0.9)	6.7	(0.5)	0.6‡	(0.2)
Chinese Taipei	3.9	(0.4)	11.2	(0.6)	21.1	(0.9)	28.5	(0.9)	23.5	(0.8)	10.0	(0.8)	1.6	(0.3)
Nova Scotia	**3.7**	**(0.7)**	**11.7**	**(1.4)**	**23.9**	**(1.4)**	**30.5**	**(1.8)**	**20.9**	**(1.5)**	**7.9**	**(1.0)**	**U‡**	**(0.6)**
Newfoundland and Labrador	**3.3**	**(0.9)**	**12.2**	**(1.7)**	**25.7**	**(2.2)**	**30.0**	**(2.2)**	**19.6**	**(1.8)**	**7.6**	**(1.2)**	**U‡**	**(0.8)**
British Columbia	**3.9**	**(0.8)**	**11.6**	**(1.1)**	**22.0**	**(1.4)**	**27.1**	**(1.4)**	**22.5**	**(1.5)**	**10.5**	**(1.1)**	**2.4**	**(0.5)**
Saskatchewan	**3.8**	**(0.6)**	**12.1**	**(1.1)**	**26.0**	**(1.3)**	**31.0**	**(1.2)**	**20.1**	**(1.2)**	**6.2**	**(0.8)**	**U‡**	**(0.3)**
Ireland	3.6	(0.4)	13.4	(0.7)	26.9	(0.9)	31.3	(0.9)	19.0	(0.7)	5.4	(0.5)	U‡	(0.2)
United Kingdom	4.5	(0.5)	12.9	(0.6)	24.0	(0.8)	28.1	(0.8)	20.8	(0.7)	8.2	(0.6)	1.5	(0.2)
New Zealand	4.9	(0.5)	13.1	(0.6)	22.0	(0.6)	26.8	(0.7)	21.8	(0.7)	9.5	(0.6)	1.8	(0.3)
Latvia	3.7	(0.4)	14.8	(0.7)	29.5	(0.8)	31.5	(1.1)	16.8	(0.8)	3.5	(0.4)	U‡	(0.1)
United States	4.9	(0.6)	13.7	(0.8)	23.6	(0.9)	27.5	(0.9)	21.1	(0.9)	7.9	(0.7)	1.3	(0.2)
Denmark	4.8	(0.4)	13.9	(0.6)	26.6	(0.7)	30.1	(0.9)	19.1	(0.8)	5.0	(0.5)	0.5‡	(0.2)
Prince Edward Island	**U**	**(1.9)**	**13.4**	**(2.0)**	**22.0**	**(2.7)**	**29.6**	**(3.7)**	**21.4**	**(3.5)**	**7.3‡**	**(2.4)**	**U‡**	**(0.8)**
Czech Republic	4.3	(0.5)	14.5	(0.8)	25.9	(1.0)	28.7	(1.0)	19.1	(0.8)	6.6	(0.5)	1.0	(0.2)
Australia	5.1	(0.3)	13.7	(0.5)	23.0	(0.6)	27.5	(0.6)	21.2	(0.6)	7.9	(0.4)	1.6	(0.2)
Sweden	5.2	(0.6)	13.8	(0.7)	24.0	(0.7)	28.0	(0.8)	20.7	(0.9)	7.3	(0.5)	1.0	(0.2)
New Brunswick	**4.8**	**(1.0)**	**14.7**	**(1.6)**	**27.1**	**(1.7)**	**28.4**	**(1.7)**	**18.0**	**(1.5)**	**6.1**	**(1.2)**	**U‡**	**(0.5)**
Portugal	4.8	(0.6)	14.7	(0.9)	26.2	(0.9)	29.4	(1.0)	19.2	(0.9)	5.1	(0.5)	0.5‡	(0.2)
Germany	5.8	(0.6)	13.8	(0.7)	22.0	(0.9)	26.9	(0.9)	21.5	(1.0)	8.5	(0.6)	1.5	(0.2)
Belgium	5.9	(0.5)	14.2	(0.6)	22.2	(0.7)	28.4	(0.8)	21.3	(0.7)	7.3	(0.4)	0.7	(0.2)
Netherlands	5.7	(0.6)	14.4	(0.8)	22.4	(0.8)	24.9	(1.1)	22.1	(1.0)	9.1	(0.7)	1.5	(0.3)
Switzerland	5.0	(0.5)	15.2	(0.8)	24.9	(0.9)	27.8	(0.9)	19.3	(1.0)	6.9	(0.7)	0.9	(0.2)
France	5.6	(0.5)	14.9	(0.8)	24.6	(0.9)	28.3	(0.7)	20.0	(0.9)	5.9	(0.5)	0.6	(0.1)
Manitoba	**4.8**	**(0.7)**	**15.9**	**(1.1)**	**27.1**	**(1.5)**	**28.3**	**(1.4)**	**17.5**	**(1.8)**	**5.6**	**(0.7)**	**U‡**	**(0.3)**
Norway	6.7	(0.5)	14.1	(0.8)	25.0	(0.9)	28.6	(0.7)	18.7	(0.7)	6.1	(0.5)	0.7	(0.1)
Russian Federation	4.5	(0.6)	16.7	(0.9)	31.7	(0.9)	30.0	(0.9)	14.0	(0.8)	2.9	(0.4)	U‡	(0.1)
Spain	5.1	(0.3)	16.2	(0.5)	28.4	(0.5)	29.4	(0.5)	16.8	(0.4)	3.9	(0.2)	0.3	(0.1)
Austria	5.4	(0.5)	16.5	(0.9)	25.0	(0.8)	27.6	(0.8)	19.2	(0.8)	5.8	(0.6)	0.5	(0.1)
Lithuania	5.2	(0.5)	17.0	(0.8)	28.4	(0.8)	28.7	(0.8)	16.3	(0.6)	4.0	(0.3)	0.5‡	(0.1)
Hungary	6.3	(0.6)	17.8	(0.9)	26.1	(1.0)	28.1	(0.9)	17.0	(0.7)	4.3	(0.5)	0.4‡	(0.1)
Belarus	5.6	(0.5)	18.7	(0.9)	31.3	(0.9)	28.8	(0.8)	13.1	(0.8)	2.5	(0.4)	U‡	(0.1)
Iceland	6.4	(0.5)	18.6	(0.8)	28.3	(0.9)	27.7	(1.0)	15.2	(0.8)	3.6	(0.4)	U‡	(0.1)
Turkey	5.0	(0.5)	20.1	(0.8)	32.8	(1.0)	27.3	(1.0)	12.3	(0.7)	2.3	(0.4)	U‡	(0.1)
Croatia	6.2	(0.6)	19.1	(0.9)	30.0	(0.8)	26.9	(0.9)	14.2	(0.7)	3.3	(0.4)	U‡	(0.1)

Table B.3.2a (cont'd)

Percentage of students at each proficiency level: SCIENCE

Country or province	Proficiency levels													
	Below Level 1		Level 1		Level 2		Level 3		Level 4		Level 5		Level 6	
	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error
Italy	7.6	(0.6)	18.2	(0.9)	30.2	(1.0)	27.8	(1.1)	13.4	(0.7)	2.6	(0.4)	U‡	(0.1)
Ukraine	7.3	(0.7)	19.2	(0.9)	30.0	(1.1)	26.7	(1.1)	13.4	(0.8)	3.2	(0.5)	U‡	(0.1)
Luxembourg	7.6	(0.4)	19.2	(0.6)	25.7	(0.8)	25.6	(0.8)	16.6	(0.6)	4.9	(0.5)	0.5‡	(0.2)
Slovak Republic	9.4	(0.7)	19.9	(0.7)	28.5	(0.9)	25.3	(0.8)	13.2	(0.6)	3.4	(0.3)	U‡	(0.1)
Greece	9.3	(0.9)	22.4	(1.0)	31.6	(0.9)	26.0	(1.0)	9.3	(0.6)	1.3	(0.2)	U‡	(0.0)
Israel	13.9	(1.0)	19.2	(0.9)	23.1	(0.9)	22.9	(0.8)	15.1	(0.8)	5.2	(0.4)	0.7	(0.1)
Malta	14.1	(0.7)	19.4	(0.7)	24.9	(0.9)	23.7	(0.9)	13.5	(0.7)	3.9	(0.4)	0.5‡	(0.1)
Chile	9.8	(0.7)	25.5	(1.0)	33.1	(1.0)	22.6	(1.0)	7.9	(0.6)	1.0	(0.2)	U‡	(0.0)
Malaysia	9.0	(0.7)	27.6	(1.0)	35.9	(1.0)	21.5	(0.9)	5.4	(0.8)	0.6	(0.2)	U‡	(0.0)
Serbia	13.1	(1.0)	25.3	(1.0)	29.9	(0.9)	21.1	(0.9)	9.1	(0.7)	1.5	(0.2)	U‡	(0.0)
Cyprus	13.9	(0.7)	25.0	(0.8)	28.9	(1.0)	21.4	(0.7)	9.1	(0.4)	1.5	(0.2)	0.1	(0.1)
Jordan	14.1	(1.0)	26.2	(0.9)	32.4	(1.0)	20.7	(0.9)	6.0	(0.5)	0.6	(0.2)	U‡	(0.0)
Moldova	15.2	(0.8)	27.4	(0.9)	29.7	(0.9)	20.2	(0.8)	6.6	(0.5)	0.8	(0.2)	U‡	(0.0)
United Arab Emirates	18.1	(0.6)	24.7	(0.6)	25.6	(0.5)	19.2	(0.5)	9.5	(0.5)	2.6	(0.2)	0.3	(0.1)
Uruguay	15.3	(0.9)	28.6	(1.0)	30.6	(1.0)	18.7	(0.9)	6.1	(0.5)	0.7	(0.2)	U‡	(0.0)
Romania	16.0	(1.3)	28.0	(1.4)	29.8	(1.0)	18.9	(1.3)	6.4	(0.8)	0.9	(0.2)	U‡	(0.0)
Thailand	12.9	(0.9)	31.6	(1.1)	31.7	(0.9)	17.8	(1.0)	5.3	(0.7)	0.7	(0.2)	U‡	(0.0)
Brunei Darussalam	16.1	(0.7)	29.7	(0.8)	25.5	(0.5)	17.4	(0.5)	9.0	(0.4)	2.1	(0.3)	U‡	(0.1)
Bulgaria	18.2	(1.3)	28.3	(0.9)	26.7	(1.1)	17.9	(0.9)	7.4	(0.6)	1.4	(0.3)	U‡	(0.1)
Mexico	12.6	(1.1)	34.2	(1.3)	33.9	(0.9)	15.5	(0.9)	3.5	(0.5)	U‡	(0.1)	0.0‡	(0.0)
Albania	13.3	(0.7)	33.7	(1.0)	34.8	(1.1)	15.1	(0.7)	2.9	(0.3)	U‡	(0.1)	U‡	(0.0)
Costa Rica	13.4	(1.0)	34.5	(1.2)	34.4	(1.2)	14.9	(1.2)	2.8	(0.6)	U‡	(0.1)	0.0‡	(0.0)
Montenegro	16.8	(0.7)	31.4	(0.8)	31.5	(0.7)	15.9	(0.6)	4.0	(0.3)	0.3‡	(0.1)	U‡	(0.0)
Qatar	21.9	(0.5)	26.5	(0.6)	24.9	(0.5)	17.0	(0.4)	7.5	(0.3)	2.0	(0.2)	0.2	(0.1)
Republic of North Macedonia	20.0	(0.7)	29.4	(0.8)	28.2	(0.9)	16.4	(0.7)	5.2	(0.4)	0.8	(0.2)	U‡	(0.0)
Colombia	17.4	(1.3)	33.0	(1.1)	29.6	(1.2)	15.4	(0.8)	4.2	(0.4)	0.4	(0.1)	U‡	(0.0)
Argentina	23.1	(1.2)	30.4	(1.1)	27.0	(0.9)	15.0	(0.8)	4.1	(0.4)	0.5	(0.1)	U‡	(0.0)
Peru	19.9	(1.1)	34.5	(1.1)	29.0	(0.8)	13.2	(0.8)	3.1	(0.5)	U‡	(0.1)	U‡	(0.0)
Brazil	23.9	(0.9)	31.4	(0.8)	25.3	(0.7)	13.9	(0.7)	4.6	(0.4)	0.8	(0.1)	U‡	(0.0)
Bosnia and Herzegovina	21.1	(1.2)	35.6	(1.0)	29.4	(1.2)	11.7	(0.9)	1.9	(0.3)	U‡	(0.1)	0.0‡	(0.0)
Baku (Azerbaijan)	19.9	(1.0)	38.0	(1.0)	29.9	(0.9)	10.3	(0.7)	1.8	(0.4)	U‡	(0.1)	0.0‡	(0.0)
Indonesia	18.7	(1.0)	41.4	(1.1)	29.2	(1.2)	9.2	(0.8)	1.6	(0.3)	U‡	(0.0)	U‡	(0.0)
Kazakhstan	20.0	(0.8)	40.3	(0.8)	26.9	(0.8)	9.9	(0.5)	2.5	(0.3)	0.4	(0.1)	U‡	(0.0)
Saudi Arabia	26.7	(1.4)	35.6	(1.0)	26.6	(1.0)	9.6	(0.7)	1.5	(0.3)	U‡	(0.0)	0.0‡	(0.0)
Lebanon	32.6	(1.6)	29.7	(1.0)	21.8	(1.0)	11.8	(0.8)	3.6	(0.4)	U‡	(0.2)	U‡	(0.0)
Georgia	28.7	(1.1)	35.7	(0.9)	24.3	(0.9)	9.5	(0.6)	1.7	(0.3)	U‡	(0.1)	0.0‡	(0.0)
Morocco	28.8	(1.6)	40.7	(1.1)	24.0	(1.4)	6.1	(0.6)	0.4	(0.1)	U‡	(0.0)	0.0‡	(0.0)
Panama	37.8	(1.4)	33.5	(1.3)	19.7	(0.8)	7.4	(0.7)	1.5	(0.3)	U‡	(0.1)	0.0‡	(0.0)
Kosovo	33.4	(0.9)	43.1	(1.0)	19.2	(0.7)	3.9	(0.4)	0.4	(0.1)	U‡	(0.0)	0.0‡	(0.0)
Philippines	42.8	(1.6)	35.2	(1.2)	15.4	(0.8)	5.6	(0.7)	1.0	(0.3)	U‡	(0.0)	0.0‡	(0.0)
Dominican Republic	53.2	(1.6)	31.6	(1.3)	12.3	(0.9)	2.6	(0.4)	U	(0.1)	U‡	(0.0)	0.0‡	(0.0)
OECD average	**5.9**	**(0.1)**	**16.0**	**(0.1)**	**25.8**	**(0.1)**	**27.4**	**(0.1)**	**18.1**	**(0.1)**	**5.9**	**(0.1)**	**0.8**	**(0.0)**

‡ There are fewer than 30 observations.
U Too unreliable to be published.
Note: Countries and provinces have been sorted in descending order by the total percentage of students who attained Level 2 or higher. B-S-J-Z (China) represents Beijing, Shanghai, Jiangsu, and Zhejiang. See OECD 2019b, p. 21, for a note regarding Cyprus. The data for Vietnam have not yet been fully validated: due to a lack of consistency in the response pattern of some performance data, the OECD cannot yet assure full international comparability of the results. Below Level 1 consists of students who scored at Level 1b and lower. Level 1 refers to Level 1a.

Table B.3.2b

Proportion of students who performed below Level 2, at Level 2 or above, and at Levels 5 and 6: SCIENCE

Country or province	Proficiency levels					
	Below Level 2		Level 2 or above		Levels 5 and 6	
	%	Standard error	%	Standard error	%	Standard error
B-S-J-Z (China)	2.1	(0.3)	97.9	(0.3)	31.5	(1.3)
Macao (China)	6.0	(0.5)	94.0	(0.5)	13.6	(0.6)
Estonia	8.8	(0.6)	91.2	(0.6)	12.2	(0.6)
Singapore	9.0	(0.4)	91.0	(0.4)	20.7	(0.6)
Japan	10.8	(0.8)	89.2	(0.8)	13.1	(0.9)
Alberta	**11.0**	**(1.2)**	**89.0**	**(1.2)**	**14.9**	**(1.6)**
Hong Kong (China)	11.6	(0.8)	88.4	(0.8)	7.8	(0.7)
Quebec	**11.7**	**(1.1)**	**88.3**	**(1.1)**	**10.4**	**(0.9)**
Finland	12.9	(0.7)	87.1	(0.7)	12.3	(0.7)
Ontario	**12.9**	**(1.1)**	**87.1**	**(1.1)**	**11.5**	**(1.0)**
Canada	**13.4**	**(0.5)**	**86.6**	**(0.5)**	**11.3**	**(0.6)**
Poland	13.8	(0.8)	86.2	(0.8)	9.3	(0.8)
Korea	14.2	(0.8)	85.8	(0.8)	11.8	(0.8)
Slovenia	14.6	(0.7)	85.4	(0.7)	7.3	(0.6)
Chinese Taipei	15.1	(0.8)	84.9	(0.8)	11.7	(0.9)
Nova Scotia	**15.4**	**(1.6)**	**84.6**	**(1.6)**	**9.3**	**(1.1)**
Newfoundland and Labrador	**15.4**	**(2.2)**	**84.6**	**(2.2)**	**9.2**	**(1.4)**
British Columbia	**15.5**	**(1.6)**	**84.5**	**(1.6)**	**12.9**	**(1.4)**
Saskatchewan	**16.0**	**(1.4)**	**84.0**	**(1.4)**	**6.9**	**(0.9)**
Ireland	17.0	(0.8)	83.0	(0.8)	5.8	(0.6)
United Kingdom	17.4	(0.9)	82.6	(0.9)	9.7	(0.6)
New Zealand	18.0	(0.8)	82.0	(0.8)	11.3	(0.6)
Latvia	18.5	(0.8)	81.5	(0.8)	3.7	(0.4)
United States	18.6	(1.2)	81.4	(1.2)	9.1	(0.7)
Denmark	18.7	(0.7)	81.3	(0.7)	5.5	(0.5)
Prince Edward Island	**18.8**	**(2.5)**	**81.2**	**(2.5)**	**8.3‡**	**(2.5)**
Czech Republic	18.8	(1.1)	81.2	(1.1)	7.5	(0.5)
Australia	18.9	(0.6)	81.1	(0.6)	9.5	(0.5)
Sweden	19.0	(1.1)	81.0	(1.1)	8.3	(0.6)
New Brunswick	**19.4**	**(1.8)**	**80.6**	**(1.8)**	**7.0**	**(1.3)**
Portugal	19.6	(1.0)	80.4	(1.0)	5.6	(0.6)
Germany	19.6	(1.0)	80.4	(1.0)	10.0	(0.6)
Belgium	20.0	(0.9)	80.0	(0.9)	8.0	(0.5)
Netherlands	20.0	(1.1)	80.0	(1.1)	10.6	(0.8)
Switzerland	20.2	(1.0)	79.8	(1.0)	7.8	(0.7)
France	20.5	(0.8)	79.5	(0.8)	6.6	(0.5)
Manitoba	**20.7**	**(1.5)**	**79.3**	**(1.5)**	**6.4**	**(0.6)**
Norway	20.8	(1.0)	79.2	(1.0)	6.8	(0.5)
Russian Federation	21.2	(1.2)	78.8	(1.2)	3.1	(0.4)
Spain	21.3	(0.6)	78.7	(0.6)	4.2	(0.3)
Austria	21.9	(1.0)	78.1	(1.0)	6.3	(0.6)
Lithuania	22.2	(0.9)	77.8	(0.9)	4.4	(0.3)
Hungary	24.1	(0.9)	75.9	(0.9)	4.7	(0.5)
Belarus	24.2	(1.2)	75.8	(1.2)	2.6	(0.4)
Iceland	25.0	(0.9)	75.0	(0.9)	3.8	(0.4)
Turkey	25.2	(1.1)	74.8	(1.1)	2.5	(0.5)
Croatia	25.4	(1.2)	74.6	(1.2)	3.6	(0.4)

Table B.3.2b (cont'd)

Proportion of students who performed below Level 2, at Level 2 or above, and at Levels 5 and 6: SCIENCE

Country or province	Proficiency levels					
	Below Level 2		Level 2 or above		Levels 5 and 6	
	%	Standard error	%	Standard error	%	Standard error
Italy	25.9	(1.0)	74.1	(1.0)	2.7	(0.4)
Ukraine	26.4	(1.4)	73.6	(1.4)	3.5	(0.5)
Luxembourg	26.8	(0.6)	73.2	(0.6)	5.4	(0.5)
Slovak Republic	29.3	(1.0)	70.7	(1.0)	3.7	(0.4)
Greece	31.7	(1.5)	68.3	(1.5)	1.3	(0.2)
Israel	33.1	(1.4)	66.9	(1.4)	5.8	(0.5)
Malta	33.5	(0.9)	66.5	(0.9)	4.4	(0.4)
Chile	35.3	(1.2)	64.7	(1.2)	1.0	(0.2)
Malaysia	36.6	(1.3)	63.4	(1.3)	0.6	(0.2)
Serbia	38.3	(1.5)	61.7	(1.5)	1.6	(0.2)
Cyprus	39.0	(1.0)	61.0	(1.0)	1.6	(0.2)
Jordan	40.3	(1.4)	59.7	(1.4)	0.7	(0.2)
Moldova	42.6	(1.2)	57.4	(1.2)	0.9	(0.2)
United Arab Emirates	42.8	(0.9)	57.2	(0.9)	2.9	(0.2)
Uruguay	43.9	(1.3)	56.1	(1.3)	0.7	(0.2)
Romania	43.9	(2.1)	56.1	(2.1)	1.0	(0.3)
Thailand	44.5	(1.5)	55.5	(1.5)	0.7	(0.2)
Brunei Darussalam	45.7	(0.6)	54.3	(0.6)	2.3	(0.3)
Bulgaria	46.5	(1.6)	53.5	(1.6)	1.5	(0.3)
Mexico	46.8	(1.4)	53.2	(1.4)	U‡	(0.1)
Albania	47.0	(1.3)	53.0	(1.3)	U‡	(0.1)
Costa Rica	47.8	(1.8)	52.2	(1.8)	U‡	(0.1)
Montenegro	48.2	(0.7)	51.8	(0.7)	0.3‡	(0.1)
Qatar	48.4	(0.5)	51.6	(0.5)	2.2	(0.2)
Republic of North Macedonia	49.5	(0.8)	50.5	(0.8)	0.8	(0.2)
Colombia	50.4	(1.7)	49.6	(1.7)	0.4	(0.1)
Argentina	53.5	(1.4)	46.5	(1.4)	0.5	(0.1)
Peru	54.5	(1.4)	45.5	(1.4)	U‡	(0.1)
Brazil	55.4	(1.0)	44.6	(1.0)	0.8	(0.2)
Bosnia and Herzegovina	56.8	(1.6)	43.2	(1.6)	U‡	(0.1)
Baku (Azerbaijan)	57.8	(1.2)	42.2	(1.2)	U‡	(0.1)
Indonesia	60.0	(1.5)	40.0	(1.5)	U‡	(0.0)
Kazakhstan	60.3	(1.0)	39.7	(1.0)	0.4	(0.1)
Saudi Arabia	62.3	(1.5)	37.7	(1.5)	U‡	(0.0)
Lebanon	62.3	(1.6)	37.7	(1.6)	U‡	(0.2)
Georgia	64.4	(1.2)	35.6	(1.2)	U‡	(0.1)
Morocco	69.4	(1.8)	30.6	(1.8)	U‡	(0.0)
Panama	71.3	(1.4)	28.7	(1.4)	U‡	(0.1)
Kosovo	76.5	(0.7)	23.5	(0.7)	U‡	(0.0)
Philippines	78.0	(1.5)	22.0	(1.5)	U‡	(0.0)
Dominican Republic	84.8	(1.1)	15.2	(1.1)	U‡	(0.0)
OECD average	**22.0**	**(0.2)**	**78.0**	**(0.2)**	**6.8**	**(0.1)**

‡ There are fewer than 30 observations.
U Too unreliable to be published.
Note: Countries and provinces have been sorted in descending order by the total percentage of students who attained Level 2 or higher. B-S-J-Z (China) represents Beijing, Shanghai, Jiangsu, and Zhejiang. See OECD 2019b, p. 21, for a note regarding Cyprus. The data for Vietnam have not yet been fully validated: due to a lack of consistency in the response pattern of some performance data, the OECD cannot yet assure full international comparability of the results.

Table B.3.3

Average scores and confidence intervals: MATHEMATICS

Country or province	Average	Standard error	Confidence interval – 95% lower limit	Confidence interval – 95% upper limit
B-S-J-Z (China)	591	(2.5)	586	596
Singapore	569	(1.6)	566	572
Macao (China)	558	(1.5)	555	561
Hong Kong (China)	551	(3.0)	545	557
Quebec	**532**	**(3.6)**	**525**	**539**
Chinese Taipei	531	(2.9)	525	537
Japan	527	(2.5)	522	532
Korea	526	(3.1)	520	532
Estonia	523	(1.7)	520	527
Netherlands	519	(2.6)	514	524
Poland	516	(2.6)	511	521
Switzerland	515	(2.9)	510	521
Ontario	**513**	**(4.4)**	**504**	**521**
Canada	**512**	**(2.4)**	**507**	**517**
Alberta	**511**	**(5.1)**	**501**	**521**
Denmark	509	(1.7)	506	513
Slovenia	509	(1.4)	506	512
Belgium	508	(2.3)	504	513
Finland	507	(2.0)	503	511
British Columbia	**504**	**(5.2)**	**494**	**515**
Sweden	502	(2.7)	497	508
United Kingdom	502	(2.6)	497	507
Norway	501	(2.2)	497	505
Germany	500	(2.6)	495	505
Ireland	500	(2.2)	495	504
Czech Republic	499	(2.5)	495	504
Austria	499	(3.0)	493	505
Latvia	496	(2.0)	492	500
France	495	(2.3)	491	500
Iceland	495	(2.0)	491	499
New Zealand	494	(1.7)	491	498
Nova Scotia	**494**	**(6.3)**	**482**	**507**
Portugal	492	(2.7)	487	498
Australia	491	(1.9)	488	495
New Brunswick	**491**	**(5.7)**	**480**	**502**
Newfoundland and Labrador	**488**	**(6.5)**	**476**	**501**
Russian Federation	488	(3.0)	482	494
Italy	487	(2.8)	481	492
Prince Edward Island	**487**	**(11.1)**	**465**	**508**
Slovak Republic	486	(2.6)	481	491
Saskatchewan	**485**	**(5.0)**	**475**	**495**
Luxembourg	483	(1.1)	481	486
Manitoba	**482**	**(3.7)**	**474**	**489**
Spain	481	(1.5)	479	484
Lithuania	481	(2.0)	477	485
Hungary	481	(2.3)	477	486
United States	478	(3.2)	472	485
Belarus	472	(2.7)	467	477
Malta	472	(1.9)	468	475
Croatia	464	(2.5)	459	469
Israel	463	(3.5)	456	470
Turkey	454	(2.3)	449	458
Ukraine	453	(3.6)	446	460
Greece	451	(3.1)	445	457
Cyprus	451	(1.4)	448	453
Serbia	448	(3.2)	442	454
Malaysia	440	(2.9)	435	446
Albania	437	(2.4)	432	442
Bulgaria	436	(3.8)	429	444
United Arab Emirates	435	(2.1)	431	439
Brunei Darussalam	430	(1.2)	428	432
Romania	430	(4.9)	420	440
Montenegro	430	(1.2)	427	432
Kazakhstan	423	(1.9)	419	427
Moldova	421	(2.4)	416	425
Baku (Azerbaijan)	420	(2.8)	414	425
Thailand	419	(3.4)	412	425
Uruguay	418	(2.6)	413	423
Chile	417	(2.4)	413	422
Qatar	414	(1.2)	412	417
Mexico	409	(2.5)	404	414
Bosnia and Herzegovina	406	(3.1)	400	412
Costa Rica	402	(3.3)	396	409
Peru	400	(2.6)	395	405
Jordan	400	(3.3)	393	406
Georgia	398	(2.6)	392	403
Republic of North Macedonia	394	(1.6)	391	398
Lebanon	393	(4.0)	386	401
Colombia	391	(3.0)	385	397
Brazil	384	(2.0)	380	388
Argentina	379	(2.8)	374	385
Indonesia	379	(3.1)	373	385
Saudi Arabia	373	(3.0)	367	379
Morocco	368	(3.3)	361	374
Kosovo	366	(1.5)	363	369
Panama	353	(2.7)	348	358
Philippines	353	(3.5)	346	359
Dominican Republic	325	(2.6)	320	330
OECD average	**489**	**(0.4)**	**489**	**490**

Note: Countries and provinces have been sorted in descending order by average score. B-S-J-Z (China) represents Beijing, Shanghai, Jiangsu, and Zhejiang. See OECD 2019b, p. 21, for a note regarding Cyprus. The data for Vietnam have not yet been fully validated: due to a lack of consistency in the response pattern of some performance data, the OECD cannot yet assure full international comparability of the results.

Table B.3.4

Average scores and confidence intervals: SCIENCE

Country or province	Average	Standard error	Confidence interval – 95% lower limit	Confidence interval – 95% upper limit
B-S-J-Z (China)	590	(2.7)	585	596
Singapore	551	(1.5)	548	554
Macao (China)	544	(1.5)	541	546
Alberta	**534**	**(4.4)**	**525**	**542**
Estonia	530	(1.9)	526	534
Japan	529	(2.6)	524	534
Finland	522	(2.5)	517	527
Quebec	**522**	**(3.7)**	**514**	**529**
Korea	519	(2.8)	514	525
Ontario	**519**	**(4.0)**	**511**	**526**
Canada	**518**	**(2.2)**	**514**	**522**
Hong Kong (China)	517	(2.5)	512	522
British Columbia	**517**	**(5.4)**	**506**	**527**
Chinese Taipei	516	(2.9)	510	521
Poland	511	(2.6)	506	516
New Zealand	508	(2.1)	504	513
Nova Scotia	**508**	**(4.7)**	**499**	**517**
Slovenia	507	(1.3)	505	509
Newfoundland and Labrador	**506**	**(6.4)**	**494**	**519**
United Kingdom	505	(2.6)	500	510
Netherlands	503	(2.8)	498	509
Germany	503	(2.9)	497	509
Australia	503	(1.8)	499	506
United States	502	(3.3)	496	509
Prince Edward Island	**502**	**(8.9)**	**484**	**519**
Saskatchewan	**501**	**(3.9)**	**493**	**508**
Sweden	499	(3.1)	493	505
Belgium	499	(2.2)	494	503
Czech Republic	497	(2.5)	492	502
Ireland	496	(2.2)	492	500
Switzerland	495	(3.0)	489	501
France	493	(2.2)	489	497
Denmark	493	(1.9)	489	496
New Brunswick	**492**	**(5.7)**	**481**	**504**
Portugal	492	(2.8)	486	497
Norway	490	(2.3)	486	495
Austria	490	(2.8)	484	495
Manitoba	**489**	**(3.7)**	**482**	**497**
Latvia	487	(1.8)	484	491
Spain	483	(1.6)	480	486
Lithuania	482	(1.6)	479	485
Hungary	481	(2.3)	476	485
Russian Federation	478	(2.9)	472	483
Luxembourg	477	(1.2)	474	479
Iceland	475	(1.8)	472	479
Croatia	472	(2.8)	467	478
Belarus	471	(2.4)	466	476
Ukraine	469	(3.3)	463	475
Turkey	468	(2.0)	464	472
Italy	468	(2.4)	463	473
Slovak Republic	464	(2.3)	460	469
Israel	462	(3.6)	455	469
Malta	457	(1.9)	453	460
Greece	452	(3.1)	445	458
Chile	444	(2.4)	439	448
Serbia	440	(3.0)	434	446
Cyprus	439	(1.4)	436	442
Malaysia	438	(2.7)	432	443
United Arab Emirates	434	(2.0)	430	438
Brunei Darussalam	431	(1.2)	429	433
Jordan	429	(2.9)	424	435
Moldova	428	(2.3)	424	433
Thailand	426	(3.2)	420	432
Uruguay	426	(2.5)	421	431
Romania	426	(4.6)	417	435
Bulgaria	424	(3.6)	417	431
Mexico	419	(2.6)	414	424
Qatar	419	(0.9)	417	421
Albania	417	(2.0)	413	421
Costa Rica	416	(3.3)	409	422
Montenegro	415	(1.3)	413	418
Colombia	413	(3.1)	407	419
Republic of North Macedonia	413	(1.4)	410	416
Peru	404	(2.7)	399	409
Argentina	404	(2.9)	398	410
Brazil	404	(2.1)	400	408
Bosnia and Herzegovina	398	(2.7)	393	404
Baku (Azerbaijan)	398	(2.4)	393	402
Kazakhstan	397	(1.7)	394	400
Indonesia	396	(2.4)	391	401
Saudi Arabia	386	(2.8)	381	392
Lebanon	384	(3.5)	377	391
Georgia	383	(2.3)	378	387
Morocco	377	(3.0)	371	382
Kosovo	365	(1.2)	363	367
Panama	365	(2.9)	359	370
Philippines	357	(3.2)	351	363
Dominican Republic	336	(2.5)	331	341
OECD average	**489**	**(0.4)**	**488**	**489**

Note: Countries and provinces have been sorted in descending order by average score. B-S-J-Z (China) represents Beijing, Shanghai, Jiangsu, and Zhejiang. See OECD 2019b, p. 21, for a note regarding Cyprus. The data for Vietnam have not yet been fully validated: due to a lack of consistency in the response pattern of some performance data, the OECD cannot yet assure full international comparability of the results.

Table B.3.5

Variation in student performance: MATHEMATICS

Country or province	Percentiles												Difference in score points between the 10th and 90th percentiles
	5th		10th		25th		75th		90th		95th		
	Score	Standard error	Score	Standard error	Score	Standard error	Score	Standard error	Score	Standard error	Score	Standard error	
Dominican Republic	214	(3.2)	236	(2.7)	276	(2.7)	370	(3.2)	417	(4.8)	449	(6.6)	181
Costa Rica	282	(4.2)	308	(3.4)	352	(2.7)	452	(4.2)	499	(5.5)	528	(7.0)	191
Morocco	249	(3.5)	273	(3.2)	314	(3.3)	418	(4.4)	469	(4.4)	499	(5.0)	196
Kosovo	243	(3.7)	269	(2.7)	313	(2.1)	416	(2.3)	465	(3.3)	497	(4.0)	197
Indonesia	255	(4.3)	281	(3.9)	325	(3.2)	427	(3.7)	480	(5.9)	517	(8.7)	198
Mexico	284	(3.8)	311	(3.6)	356	(2.7)	461	(3.1)	510	(3.6)	539	(4.5)	199
Panama	228	(5.0)	255	(3.9)	300	(2.9)	403	(3.6)	454	(5.5)	485	(6.3)	199
Philippines	229	(4.2)	255	(3.7)	299	(3.2)	403	(4.5)	456	(6.0)	488	(7.4)	201
Ireland	367	(3.6)	397	(3.3)	447	(2.6)	554	(2.3)	599	(3.0)	625	(3.5)	202
Saudi Arabia	246	(4.6)	273	(4.3)	319	(3.4)	426	(3.6)	475	(3.6)	505	(4.1)	202
B-S-J-Z (China)	452	(5.2)	486	(4.2)	540	(3.0)	647	(3.0)	691	(3.2)	716	(3.6)	205
Macao (China)	420	(4.1)	452	(3.6)	505	(2.3)	613	(2.2)	659	(2.6)	685	(3.4)	207
Latvia	363	(4.1)	393	(3.2)	441	(2.4)	551	(2.5)	599	(3.1)	628	(3.4)	207
Estonia	390	(3.1)	419	(2.9)	468	(2.4)	579	(2.2)	628	(2.7)	657	(3.6)	209
Colombia	262	(5.4)	290	(3.9)	335	(3.5)	445	(3.8)	499	(4.5)	531	(4.4)	209
Saskatchewan	**348**	**(6.5)**	**378**	**(5.4)**	**430**	**(5.8)**	**543**	**(5.4)**	**589**	**(5.7)**	**618**	**(6.9)**	**211**
Bosnia and Herzegovina	276	(4.1)	303	(3.2)	349	(3.2)	462	(3.7)	514	(4.4)	545	(4.3)	211
Albania	303	(3.6)	332	(3.1)	381	(2.9)	493	(2.8)	544	(3.5)	575	(3.8)	211
Denmark	370	(3.6)	401	(2.6)	454	(2.3)	567	(2.3)	613	(2.8)	640	(3.5)	213
Finland	368	(3.6)	399	(3.4)	451	(2.5)	565	(2.4)	612	(2.5)	639	(3.3)	213
Malaysia	307	(3.6)	335	(3.0)	383	(3.1)	496	(3.9)	550	(4.8)	580	(5.9)	214
Montenegro	295	(2.8)	324	(2.2)	371	(1.9)	487	(1.6)	538	(2.1)	569	(3.1)	214
Jordan	259	(4.6)	291	(4.2)	343	(3.4)	458	(3.9)	508	(4.3)	539	(5.2)	217
Argentina	243	(4.6)	272	(4.1)	322	(3.6)	436	(3.5)	489	(3.8)	520	(4.0)	217
Newfoundland and Labrador	**351**	**(10.4)**	**382**	**(8.7)**	**431**	**(5.9)**	**546**	**(8.4)**	**599**	**(10.6)**	**629**	**(11.4)**	**217**
Peru	266	(3.4)	293	(3.1)	341	(2.9)	456	(3.5)	511	(4.1)	544	(5.1)	217
Chile	282	(3.9)	311	(3.5)	359	(2.9)	475	(3.2)	528	(3.5)	559	(4.1)	218
Russian Federation	344	(5.5)	376	(4.3)	430	(4.0)	547	(3.3)	597	(3.9)	627	(4.2)	221
Kazakhstan	282	(3.2)	314	(2.4)	365	(2.2)	480	(2.2)	535	(3.0)	568	(3.1)	221
Uruguay	276	(4.4)	307	(3.5)	359	(3.1)	477	(3.7)	529	(3.9)	558	(4.4)	221
Croatia	323	(4.6)	354	(3.9)	405	(3.0)	523	(3.1)	577	(3.9)	608	(4.2)	223
Japan	380	(4.3)	413	(3.9)	468	(3.1)	589	(2.8)	637	(3.8)	664	(4.5)	224
Brazil	251	(3.1)	277	(2.5)	322	(2.3)	440	(2.8)	501	(3.9)	538	(4.9)	224
Manitoba	**337**	**(7.1)**	**368**	**(5.3)**	**421**	**(4.5)**	**542**	**(4.2)**	**594**	**(5.9)**	**624**	**(6.1)**	**226**
Thailand	282	(4.8)	310	(3.6)	358	(3.3)	475	(4.3)	535	(5.8)	572	(6.1)	226
Turkey	314	(4.3)	343	(3.8)	392	(3.2)	512	(2.7)	571	(4.0)	605	(5.3)	228
Nova Scotia	**349**	**(8.3)**	**380**	**(8.3)**	**433**	**(6.7)**	**555**	**(6.7)**	**608**	**(8.9)**	**640**	**(11.2)**	**228**
Georgia	257	(3.9)	286	(3.6)	336	(2.9)	457	(3.7)	515	(4.4)	548	(6.0)	228
Spain	331	(2.8)	365	(2.4)	421	(1.8)	544	(1.8)	593	(2.2)	621	(2.4)	229
Baku (Azerbaijan)	276	(3.8)	306	(3.4)	359	(2.9)	480	(3.8)	535	(5.0)	570	(5.4)	229
Slovenia	360	(5.3)	392	(3.0)	448	(2.3)	571	(2.3)	622	(2.8)	652	(3.4)	230
Greece	302	(4.9)	334	(4.7)	391	(4.1)	513	(3.2)	565	(3.8)	595	(4.7)	231
Poland	366	(4.7)	398	(3.8)	455	(2.9)	578	(3.1)	631	(4.2)	661	(4.7)	233
Prince Edward Island	**332**	**(23.0)**	**369**	**(16.4)**	**423**	**(11.6)**	**551**	**(14.2)**	**601**	**(15.2)**	**630**	**(18.1)**	**233**
Alberta	**356**	**(9.1)**	**392**	**(8.3)**	**450**	**(7.0)**	**575**	**(5.7)**	**626**	**(5.9)**	**655**	**(7.4)**	**234**
Ontario	**361**	**(5.9)**	**394**	**(5.2)**	**450**	**(4.7)**	**577**	**(5.5)**	**629**	**(5.2)**	**660**	**(6.7)**	**234**

Table B.3.5 (cont'd)

Variation in student performance: MATHEMATICS

Country or province	Percentiles												Difference in score points between the 10th and 90th percentiles
	5th		10th		25th		75th		90th		95th		
	Score	Standard error	Score	Standard error	Score	Standard error	Score	Standard error	Score	Standard error	Score	Standard error	
Iceland	340	(3.8)	374	(4.2)	434	(3.4)	559	(2.7)	609	(3.0)	638	(4.1)	235
Sweden	348	(5.7)	383	(4.6)	441	(3.7)	567	(2.9)	618	(3.3)	647	(3.8)	236
Norway	345	(4.1)	381	(3.9)	441	(2.9)	565	(2.4)	617	(3.1)	645	(4.4)	236
New Brunswick	**338**	**(8.3)**	**373**	**(7.2)**	**428**	**(6.4)**	**555**	**(7.2)**	**609**	**(9.2)**	**638**	**(10.8)**	**236**
Lithuania	330	(4.1)	362	(3.6)	418	(2.8)	545	(2.2)	598	(2.8)	630	(3.2)	236
Hungary	328	(3.9)	360	(4.0)	418	(3.3)	546	(3.0)	597	(3.7)	626	(4.7)	237
Canada	**358**	**(3.2)**	**392**	**(3.0)**	**449**	**(2.8)**	**576**	**(2.7)**	**629**	**(2.7)**	**661**	**(3.2)**	**237**
Quebec	**374**	**(6.8)**	**411**	**(6.2)**	**472**	**(4.8)**	**596**	**(4.1)**	**648**	**(4.2)**	**679**	**(5.2)**	**238**
Australia	339	(3.8)	371	(3.0)	428	(2.2)	555	(2.0)	609	(2.7)	641	(3.6)	238
Brunei Darussalam	287	(3.4)	316	(2.4)	365	(2.0)	492	(2.0)	555	(2.2)	588	(3.4)	239
United Kingdom	346	(4.1)	381	(4.0)	439	(2.9)	567	(3.0)	620	(3.3)	651	(4.2)	239
Republic of North Macedonia	243	(3.9)	275	(2.9)	330	(2.1)	458	(2.2)	516	(3.5)	550	(4.4)	241
United States	326	(5.0)	357	(4.6)	414	(4.0)	543	(3.9)	598	(4.3)	629	(4.6)	241
France	333	(4.3)	370	(3.4)	433	(3.2)	562	(3.2)	611	(3.3)	638	(3.6)	241
Hong Kong (China)	387	(6.2)	426	(5.4)	490	(4.2)	617	(2.8)	667	(3.5)	696	(4.5)	241
Belarus	318	(5.0)	351	(3.4)	407	(3.1)	537	(3.2)	592	(3.5)	623	(4.1)	241
Czech Republic	345	(5.2)	378	(4.6)	435	(3.6)	564	(2.8)	619	(3.1)	650	(3.9)	241
Italy	327	(5.5)	363	(4.7)	423	(3.1)	552	(3.3)	605	(3.9)	635	(4.9)	241
British Columbia	**350**	**(7.9)**	**382**	**(6.8)**	**441**	**(6.0)**	**569**	**(5.7)**	**624**	**(6.9)**	**657**	**(7.8)**	**242**
New Zealand	339	(3.7)	372	(3.0)	430	(2.5)	560	(2.2)	614	(2.2)	645	(3.7)	242
Ukraine	297	(5.2)	331	(4.4)	390	(4.2)	517	(4.1)	573	(5.0)	607	(5.7)	242
Netherlands	362	(5.0)	394	(4.8)	453	(4.0)	588	(2.7)	638	(3.6)	664	(3.7)	243
Moldova	268	(3.8)	300	(3.1)	354	(2.6)	486	(3.2)	543	(4.4)	578	(5.7)	244
Singapore	401	(3.4)	441	(2.9)	508	(2.4)	636	(2.1)	684	(2.7)	713	(3.0)	244
Romania	277	(5.7)	310	(5.4)	365	(4.7)	495	(6.1)	554	(6.9)	588	(7.2)	244
Austria	341	(4.4)	374	(4.4)	433	(4.0)	566	(3.5)	618	(3.3)	646	(3.6)	244
Switzerland	360	(4.4)	391	(3.5)	448	(3.8)	582	(3.4)	636	(4.3)	668	(4.8)	245
Cyprus	292	(3.5)	325	(2.8)	385	(2.5)	517	(2.1)	571	(2.4)	601	(3.4)	246
Germany	337	(4.6)	373	(4.2)	433	(3.6)	570	(3.3)	621	(3.2)	650	(3.4)	248
Serbia	293	(5.3)	324	(4.3)	380	(3.9)	516	(3.8)	576	(3.9)	609	(3.9)	251
Bulgaria	280	(6.1)	311	(4.6)	368	(4.6)	503	(4.1)	563	(5.7)	599	(6.8)	251
Belgium	344	(4.3)	377	(4.1)	440	(3.2)	579	(2.6)	628	(3.4)	656	(3.7)	252
Portugal	327	(5.2)	362	(3.8)	426	(3.6)	562	(3.0)	614	(3.6)	643	(4.5)	252
Qatar	259	(2.8)	290	(2.2)	345	(1.6)	481	(1.6)	544	(2.1)	582	(2.5)	253
Slovak Republic	315	(6.0)	353	(5.4)	420	(4.1)	556	(2.7)	610	(3.1)	640	(3.7)	257
Luxembourg	321	(3.4)	353	(2.9)	413	(2.1)	555	(2.0)	611	(2.4)	641	(2.9)	257
Korea	354	(5.0)	393	(4.4)	460	(3.8)	596	(3.6)	651	(4.6)	684	(5.9)	258
Chinese Taipei	358	(4.6)	397	(3.9)	466	(3.8)	601	(3.5)	656	(4.4)	686	(5.3)	259
Malta	297	(4.4)	334	(3.4)	401	(3.6)	545	(2.7)	599	(3.5)	630	(4.8)	265
United Arab Emirates	265	(3.9)	299	(3.2)	360	(2.8)	509	(2.6)	574	(2.4)	611	(3.2)	275
Lebanon	224	(5.2)	256	(4.8)	317	(5.1)	469	(5.0)	533	(4.7)	569	(4.7)	276
Israel	276	(6.2)	315	(5.5)	388	(5.0)	542	(3.6)	600	(3.9)	632	(3.9)	285
OECD average	**337**	**(0.7)**	**370**	**(0.6)**	**427**	**(0.5)**	**553**	**(0.5)**	**605**	**(0.6)**	**634**	**(0.7)**	**235**

Note: Countries and provinces have been sorted in ascending order by the difference in score points between the 10th and 90th percentiles. B-S-J-Z (China) represents Beijing, Shanghai, Jiangsu, and Zhejiang. See OECD 2019b, p. 21, for a note regarding Cyprus. The data for Vietnam have not yet been fully validated: due to a lack of consistency in the response pattern of some performance data, the OECD cannot yet assure full international comparability of the results.

Table B.3.6

Variation in student performance: SCIENCE

Country or province	Percentiles												Difference in score points between the 10th and 90th percentiles
	5th		10th		25th		75th		90th		95th		
	Score	Standard error	Score	Standard error	Score	Standard error	Score	Standard error	Score	Standard error	Score	Standard error	
Kosovo	265	(2.6)	285	(2.5)	320	(1.5)	406	(1.7)	450	(2.6)	478	(3.8)	165
Morocco	275	(2.9)	293	(2.7)	328	(2.8)	422	(4.0)	468	(3.9)	493	(3.8)	175
Indonesia	289	(3.2)	312	(3.0)	348	(2.6)	440	(3.1)	488	(4.6)	517	(5.7)	176
Dominican Republic	231	(2.7)	250	(2.8)	286	(2.4)	379	(3.5)	431	(4.8)	463	(5.7)	181
Costa Rica	300	(3.9)	324	(3.2)	364	(3.0)	466	(4.3)	512	(5.6)	540	(6.6)	188
Baku (Azerbaijan)	281	(3.0)	305	(2.5)	347	(2.3)	446	(3.0)	494	(4.6)	524	(6.2)	189
Albania	298	(3.2)	323	(3.1)	366	(2.4)	466	(2.6)	514	(3.2)	541	(3.6)	190
Kazakhstan	284	(2.6)	307	(2.1)	346	(1.9)	442	(2.4)	498	(3.4)	533	(4.8)	191
Mexico	303	(4.3)	326	(3.9)	367	(2.7)	469	(3.0)	518	(4.3)	548	(4.5)	192
Philippines	250	(3.3)	269	(3.1)	304	(2.6)	401	(4.5)	461	(6.6)	500	(8.3)	192
Bosnia and Herzegovina	278	(3.6)	302	(3.1)	344	(2.7)	451	(3.6)	499	(3.8)	528	(4.1)	197
Malaysia	313	(3.6)	339	(2.9)	384	(2.7)	490	(3.4)	538	(4.3)	565	(5.2)	199
Saudi Arabia	261	(4.4)	287	(3.2)	331	(3.3)	440	(3.4)	489	(3.6)	519	(4.3)	203
Peru	280	(3.9)	304	(3.0)	347	(2.6)	458	(3.6)	511	(4.4)	543	(5.3)	207
Georgia	255	(3.6)	281	(2.7)	326	(2.7)	437	(3.0)	491	(3.9)	522	(4.9)	209
Thailand	299	(3.7)	324	(3.2)	367	(3.0)	481	(4.4)	535	(5.2)	567	(5.8)	211
Montenegro	285	(2.7)	311	(2.2)	358	(1.6)	470	(2.0)	523	(2.2)	554	(3.0)	212
Colombia	287	(3.8)	311	(3.7)	355	(3.6)	469	(4.0)	524	(4.1)	555	(4.2)	213
B-S-J-Z (China)	448	(5.0)	482	(4.0)	536	(3.4)	649	(3.1)	695	(3.7)	721	(3.9)	213
Macao (China)	402	(4.3)	434	(3.0)	489	(2.6)	601	(1.9)	648	(2.2)	674	(3.5)	214
Russian Federation	339	(4.7)	369	(4.1)	420	(3.6)	536	(3.2)	586	(3.7)	616	(4.0)	217
Chile	309	(3.6)	336	(3.1)	385	(3.0)	502	(3.3)	553	(3.3)	584	(3.8)	218
Turkey	335	(3.4)	361	(3.1)	409	(2.8)	526	(2.4)	579	(3.9)	608	(4.8)	218
Latvia	347	(3.8)	377	(3.3)	429	(2.8)	546	(2.3)	595	(2.7)	623	(3.3)	219
Panama	230	(4.8)	259	(3.8)	305	(3.2)	420	(4.1)	478	(5.7)	514	(6.1)	219
Belarus	331	(3.7)	361	(3.5)	412	(3.4)	531	(2.7)	581	(2.7)	610	(3.7)	221
Hong Kong (China)	364	(4.6)	401	(4.3)	461	(3.2)	577	(2.5)	623	(3.3)	650	(4.0)	223
Greece	309	(5.2)	338	(4.6)	392	(4.1)	513	(3.3)	561	(3.4)	591	(4.2)	223
Jordan	282	(5.5)	316	(4.4)	370	(3.7)	490	(3.1)	541	(3.4)	570	(3.9)	225
Uruguay	287	(3.2)	314	(3.1)	364	(2.9)	486	(3.6)	540	(3.9)	573	(4.0)	226
Estonia	384	(3.9)	417	(3.5)	469	(2.9)	591	(2.4)	644	(2.7)	674	(3.0)	227
Ireland	348	(4.1)	380	(3.5)	435	(2.6)	558	(2.6)	610	(3.2)	639	(4.2)	230
Slovenia	359	(3.3)	390	(3.4)	447	(2.1)	569	(1.9)	621	(2.8)	648	(3.7)	231
Argentina	261	(4.7)	291	(4.0)	340	(3.4)	466	(3.7)	523	(4.0)	555	(3.7)	232
Moldova	285	(3.8)	314	(2.9)	365	(2.5)	492	(3.2)	546	(3.7)	575	(4.1)	232
Romania	282	(5.5)	312	(4.7)	362	(4.6)	488	(5.5)	545	(5.8)	577	(6.1)	233
Spain	334	(2.3)	365	(2.4)	421	(1.9)	547	(1.8)	598	(2.2)	627	(2.2)	233
Brazil	268	(3.0)	292	(2.3)	338	(2.1)	464	(3.1)	527	(3.6)	563	(4.8)	234
Quebec	**365**	**(7.2)**	**401**	**(6.0)**	**461**	**(4.5)**	**585**	**(4.3)**	**635**	**(4.0)**	**663**	**(5.4)**	**234**
Croatia	327	(4.2)	356	(4.0)	409	(3.5)	536	(3.1)	590	(3.5)	622	(3.9)	235
Saskatchewan	**346**	**(7.7)**	**382**	**(6.4)**	**440**	**(5.3)**	**564**	**(4.2)**	**617**	**(6.0)**	**647**	**(6.9)**	**235**
Lithuania	334	(3.6)	364	(2.9)	418	(2.8)	546	(1.8)	599	(2.3)	629	(3.0)	235
Italy	316	(4.7)	348	(3.9)	407	(3.1)	532	(3.0)	583	(3.7)	612	(4.7)	235
Denmark	337	(3.8)	372	(3.4)	431	(2.6)	558	(2.6)	609	(3.1)	637	(3.6)	237
Ukraine	319	(5.0)	351	(4.4)	406	(3.8)	532	(3.7)	588	(4.5)	619	(5.5)	237
Republic of North Macedonia	265	(3.2)	296	(2.5)	349	(2.0)	476	(2.4)	533	(3.1)	566	(3.9)	238
Poland	359	(4.2)	392	(3.4)	448	(2.8)	576	(3.4)	630	(4.0)	660	(4.4)	238

Table B.3.6 (cont'd)

Variation in student performance: SCIENCE

Country or province	Percentiles												Difference in score points between the 10th and 90th percentiles
	5th		10th		25th		75th		90th		95th		
	Score	Standard error	Score	Standard error	Score	Standard error	Score	Standard error	Score	Standard error	Score	Standard error	
Serbia	293	(3.8)	322	(3.9)	375	(3.8)	504	(3.6)	562	(4.0)	593	(3.7)	240
Iceland	325	(3.6)	354	(3.1)	410	(3.0)	540	(2.7)	594	(3.1)	623	(3.7)	240
Portugal	336	(5.6)	368	(4.3)	427	(3.6)	558	(3.1)	609	(3.5)	638	(4.1)	240
Newfoundland and Labrador	**354**	**(11.2)**	**387**	**(9.4)**	**442**	**(7.2)**	**569**	**(6.5)**	**628**	**(9.6)**	**663**	**(10.5)**	**241**
Japan	371	(4.5)	405	(4.4)	466	(3.7)	595	(3.0)	646	(3.5)	673	(3.9)	241
Cyprus	291	(3.3)	319	(2.6)	372	(2.7)	505	(2.2)	562	(2.2)	592	(2.9)	244
Ontario	**361**	**(5.8)**	**395**	**(4.9)**	**453**	**(5.2)**	**587**	**(4.9)**	**641**	**(5.0)**	**672**	**(5.5)**	**245**
Hungary	325	(4.4)	356	(3.9)	412	(3.1)	549	(3.3)	602	(3.6)	631	(4.1)	246
Manitoba	**337**	**(7.2)**	**366**	**(5.6)**	**423**	**(5.1)**	**556**	**(4.8)**	**612**	**(4.0)**	**645**	**(6.4)**	**246**
Nova Scotia	**349**	**(7.9)**	**383**	**(7.2)**	**444**	**(6.3)**	**574**	**(5.1)**	**629**	**(6.6)**	**662**	**(8.3)**	**246**
Bulgaria	279	(5.1)	305	(4.3)	355	(4.0)	490	(4.8)	552	(5.3)	587	(6.1)	247
Czech Republic	341	(4.8)	373	(4.0)	430	(3.7)	564	(3.1)	620	(2.9)	651	(3.6)	247
Canada	**357**	**(2.6)**	**393**	**(2.3)**	**453**	**(2.5)**	**586**	**(2.6)**	**640**	**(2.5)**	**671**	**(3.6)**	**247**
New Brunswick	**336**	**(9.8)**	**369**	**(8.5)**	**427**	**(7.0)**	**559**	**(6.4)**	**617**	**(7.6)**	**650**	**(10.3)**	**248**
Lebanon	237	(4.0)	265	(3.6)	315	(3.7)	449	(4.8)	513	(4.9)	549	(4.9)	248
Alberta	**369**	**(7.6)**	**404**	**(6.3)**	**468**	**(5.8)**	**602**	**(5.0)**	**654**	**(6.3)**	**684**	**(7.6)**	**250**
Finland	356	(4.4)	393	(4.1)	458	(3.2)	590	(2.8)	643	(2.9)	673	(3.8)	250
France	330	(4.2)	364	(3.5)	425	(3.1)	563	(2.9)	615	(3.2)	644	(3.8)	251
Slovak Republic	307	(3.9)	338	(3.5)	397	(3.2)	531	(2.9)	589	(3.5)	622	(3.7)	251
Brunei Darussalam	290	(2.6)	315	(2.0)	359	(1.9)	497	(1.7)	566	(2.8)	603	(2.8)	252
Austria	332	(3.8)	361	(3.1)	420	(3.6)	560	(3.1)	614	(3.3)	642	(3.7)	252
Korea	352	(4.9)	388	(4.1)	453	(3.7)	589	(3.1)	642	(3.8)	672	(4.4)	254
Singapore	376	(3.5)	416	(3.2)	487	(2.7)	621	(1.6)	670	(1.8)	698	(2.7)	254
Switzerland	335	(3.9)	367	(3.5)	426	(3.8)	565	(4.0)	622	(4.6)	651	(4.0)	255
Sweden	333	(6.0)	368	(5.1)	431	(4.0)	570	(3.1)	624	(3.3)	655	(3.8)	256
Prince Edward Island	**335**	**(16.5)**	**369**	**(16.6)**	**436**	**(12.2)**	**571**	**(10.5)**	**625**	**(16.5)**	**654**	**(15.7)**	**256**
United Kingdom	340	(4.7)	374	(3.8)	437	(3.2)	575	(3.2)	632	(3.2)	664	(3.7)	258
Luxembourg	317	(3.6)	347	(2.6)	404	(2.1)	549	(2.2)	606	(2.9)	637	(3.8)	258
United States	336	(6.1)	371	(4.9)	433	(4.4)	574	(3.8)	629	(3.9)	660	(3.8)	259
Norway	321	(4.5)	357	(3.9)	424	(3.3)	560	(2.8)	616	(2.9)	645	(3.4)	259
Chinese Taipei	346	(4.3)	382	(3.9)	449	(3.7)	587	(3.7)	641	(4.0)	670	(4.1)	259
Belgium	328	(4.2)	363	(4.0)	428	(3.4)	571	(2.5)	624	(2.3)	652	(2.8)	261
Australia	334	(2.7)	369	(2.6)	432	(2.2)	575	(2.2)	631	(2.7)	664	(3.8)	262
British Columbia	**346**	**(9.1)**	**383**	**(7.5)**	**446**	**(5.7)**	**589**	**(6.6)**	**647**	**(6.9)**	**679**	**(7.4)**	**263**
Qatar	259	(2.6)	290	(1.5)	345	(1.4)	490	(1.5)	557	(2.1)	596	(2.7)	268
New Zealand	336	(4.5)	371	(3.7)	437	(2.8)	582	(2.7)	640	(2.9)	670	(3.3)	269
Germany	328	(5.2)	363	(4.0)	430	(3.9)	577	(3.5)	633	(3.3)	665	(3.3)	270
United Arab Emirates	272	(2.4)	302	(2.1)	358	(2.2)	506	(2.8)	572	(3.0)	609	(2.8)	270
Netherlands	329	(5.5)	364	(5.2)	428	(4.5)	581	(3.1)	636	(3.5)	666	(3.8)	272
Malta	278	(4.8)	314	(3.5)	380	(2.9)	534	(2.9)	594	(3.3)	628	(4.2)	280
Israel	279	(5.6)	314	(5.0)	381	(5.1)	544	(3.7)	607	(3.8)	640	(4.0)	293
OECD average	**333**	**(0.7)**	**365**	**(0.6)**	**423**	**(0.5)**	**555**	**(0.5)**	**609**	**(0.5)**	**639**	**(0.6)**	**244**

Note: Countries and provinces have been sorted in ascending order by the difference in score points between the 10th and 90th percentiles. B-S-J-Z (China) represents Beijing, Shanghai, Jiangsu, and Zhejiang. See OECD 2019b, p. 21, for a note regarding Cyprus. The data for Vietnam have not yet been fully validated: due to a lack of consistency in the response pattern of some performance data, the OECD cannot yet assure full international comparability of the results.

Table B.3.7a

Percentage of students at each proficiency level in anglophone and francophone school systems: MATHEMATICS

Canada and provinces	Proficiency levels													
	Below Level 1		Level 1		Level 2		Level 3		Level 4		Level 5		Level 6	
	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error
Anglophone school systems														
Canada	5.2	(0.5)	12.0	(0.6)	21.9	(0.7)	26.0	(0.7)	21.0	(0.9)	10.5	(0.6)	3.4	(0.4)
Newfoundland and Labrador	6.0	(1.5)	15.1	(1.6)	26.7	(2.4)	26.7	(2.1)	16.9	(2.1)	6.9	(1.9)	U‡	(0.7)
Prince Edward Island	8.0‡	(2.7)	15.6	(2.8)	23.3	(2.8)	25.9	(3.5)	18.2	(3.9)	U‡	(2.8)	U‡	(1.0)
Nova Scotia	6.3	(1.3)	14.0	(1.4)	24.6	(1.4)	26.2	(1.5)	18.7	(1.6)	7.8	(1.2)	U‡	(0.8)
New Brunswick	8.3	(1.3)	16.4	(1.9)	24.7	(1.9)	24.4	(1.9)	17.3	(2.4)	7.3	(1.8)	U‡	(0.8)
Quebec	3.5	(1.0)	9.5	(1.5)	21.3	(2.8)	29.2	(2.5)	23.8	(2.5)	10.0	(1.4)	U	(0.9)
Ontario	4.5	(0.7)	11.1	(0.9)	21.2	(1.3)	25.7	(1.4)	21.9	(1.6)	11.6	(1.1)	4.0	(0.7)
Manitoba	8.0	(1.0)	16.9	(1.3)	24.9	(1.9)	26.1	(1.5)	16.5	(1.2)	6.3	(0.9)	U‡	(0.4)
Saskatchewan	6.4	(0.9)	15.2	(1.6)	26.3	(1.7)	27.7	(1.7)	17.8	(1.6)	5.6	(0.8)	U‡	(0.4)
Alberta	5.3	(1.0)	10.9	(1.4)	20.7	(1.8)	26.8	(1.8)	21.5	(1.4)	11.5	(1.3)	3.4	(0.7)
British Columbia	6.0	(0.9)	12.8	(1.3)	21.7	(1.3)	25.3	(1.5)	20.6	(1.4)	9.9	(1.2)	3.7	(0.8)
Francophone school systems														
Canada	4.0	(0.6)	8.5	(0.8)	16.8	(0.9)	25.3	(1.2)	24.6	(1.0)	14.5	(0.8)	6.4	(0.6)
Nova Scotia	U‡	(4.2)	12.1‡	(3.9)	23.5	(4.1)	24.4	(5.8)	18.0‡	(3.7)	U‡	(4.0)	U‡	(2.8)
New Brunswick	5.7	(1.5)	10.7	(2.3)	21.7	(2.9)	26.6	(2.4)	21.6	(2.5)	9.7	(2.3)	U‡	(1.7)
Quebec	3.6	(0.6)	8.0	(0.8)	16.0	(1.0)	25.1	(1.3)	25.3	(1.2)	15.3	(1.0)	6.8	(0.7)
Ontario	7.8	(1.8)	12.9	(1.6)	22.1	(1.8)	26.8	(2.2)	18.7	(2.2)	8.1	(1.3)	U	(1.4)
Manitoba	U‡	(4.2)	U‡	(5.0)	25.0	(6.1)	28.7	(4.6)	17.9	(4.7)	U‡	(3.8)	U‡	(2.3)
Alberta	U‡	(2.6)	11.0‡	(3.2)	18.6	(5.1)	26.1	(4.9)	23.6	(3.8)	U‡	(4.2)	U‡	(2.7)
British Columbia	U‡	(4.0)	13.5‡	(3.9)	21.4‡	(6.0)	25.7	(5.2)	19.2‡	(4.3)	U‡	(3.4)	U‡	(2.2)

‡ There are fewer than 30 observations.
U Too unreliable to be published.
Note: Because Newfoundland and Labrador, Prince Edward Island, and Saskatchewan did not oversample students by language, results for only English-language schools are available for these provinces.

Table B.3.7b

Proportion of students in anglophone and francophone school systems who performed below Level 2, at Level 2 or above, and at Levels 5 and 6: MATHEMATICS

	Canada and provinces	Anglophone school systems		Francophone school systems		Difference (A–F)	
		%	Standard error	%	Standard error	Difference	Standard error
Below Level 2							
	Canada	17.3	(0.8)	12.5	(1.2)	4.7*	(1.4)
	Newfoundland and Labrador	21.1	(2.3)	--	--	--	--
	Prince Edward Island	23.7	(3.9)	--	--	--	--
	Nova Scotia	20.3	(2.2)	20.3	(6.7)	0.0	(6.2)
	New Brunswick	24.6**	(2.7)	16.5	(2.8)	8.1	(4.2)
	Quebec	13.0**	(1.9)	11.5**	(1.2)	1.5	(2.2)
	Ontario	15.6**	(1.3)	20.6**	(2.7)	-5.1	(3.1)
	Manitoba	24.9**	(1.7)	U	(8.1)	--	--
	Saskatchewan	21.6**	(2.1)	--	--	--	--
	Alberta	16.1	(2.0)	17.5	(4.5)	-1.3	(5.3)
	British Columbia	18.7	(1.8)	22.2	(5.1)	-3.5	(5.3)
Level 2 or above							
	Canada	82.7	(0.8)	87.5	(1.2)	-4.7*	(1.4)
	Newfoundland and Labrador	78.9	(2.3)	--	--	--	--
	Prince Edward Island	76.3	(3.9)	--	--	--	--
	Nova Scotia	79.7	(2.2)	79.7	(6.7)	0.0	(6.2)
	New Brunswick	75.4**	(2.7)	83.5	(2.8)	-8.1	(4.2)
	Quebec	87.0**	(1.9)	88.5**	(1.2)	-1.5	(2.2)
	Ontario	84.4**	(1.3)	79.4**	(2.7)	5.1	(3.1)
	Manitoba	75.1**	(1.7)	80.3	(8.1)	-5.2	(9.1)
	Saskatchewan	78.4**	(2.1)	--	--	--	--
	Alberta	83.9	(2.0)	82.5	(4.5)	1.3	(5.3)
	British Columbia	81.3	(1.8)	77.8	(5.1)	3.5	(5.3)
Levels 5 and 6							
	Canada	13.9	(0.8)	20.8	(1.2)	-7.0*	(1.4)
	Newfoundland and Labrador	8.6**	(2.1)	--	--	--	--
	Prince Edward Island	8.9	(2.9)	--	--	--	--
	Nova Scotia	10.1**	(1.6)	U	(4.7)	--	--
	New Brunswick	8.9**	(2.1)	13.6**	(3.3)	-4.7	(4.0)
	Quebec	12.7	(2.0)	22.1**	(1.4)	-9.3*	(2.5)
	Ontario	15.6**	(1.5)	11.7**	(2.3)	3.9	(2.6)
	Manitoba	7.6**	(1.1)	U	(5.6)	--	--
	Saskatchewan	6.6**	(0.9)	--	--	--	--
	Alberta	14.8	(1.6)	U	(5.7)	--	--
	British Columbia	13.6	(1.7)	U	(4.3)	--	--

-- Not available.
U Too unreliable to be published.
* Significant difference within Canada or province.
** Significant difference compared to Canada.
Note: Because Newfoundland and Labrador, Prince Edward Island, and Saskatchewan did not oversample students by language, results for only English-language schools are available for these provinces.

Table B.3.8a

Percentage of students at each proficiency level in anglophone and francophone school systems: SCIENCE

Canada and provinces	Proficiency levels													
	Below Level 1		Level 1		Level 2		Level 3		Level 4		Level 5		Level 6	
	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error
Anglophone school systems														
Canada	3.0	(0.3)	10.5	(0.5)	22.5	(0.6)	28.9	(0.7)	23.3	(0.7)	9.8	(0.6)	2.0	(0.2)
Newfoundland and Labrador	3.3	(0.9)	12.2	(1.7)	25.7	(2.2)	30.0	(2.2)	19.6	(1.8)	7.6	(1.2)	U‡	(0.8)
Prince Edward Island	U‡	(1.9)	13.2	(2.1)	21.7	(2.8)	29.9	(3.7)	21.6	(3.8)	U‡	(2.5)	U‡	(0.8)
Nova Scotia	3.6	(0.7)	11.4	(1.4)	23.6	(1.4)	30.8	(1.9)	21.2	(1.5)	8.1	(1.0)	U‡	(0.6)
New Brunswick	4.7	(1.1)	15.0	(2.0)	26.5	(2.0)	27.5	(2.2)	18.5	(1.8)	6.6	(1.5)	U‡	(0.6)
Quebec	U‡	(0.7)	9.4	(1.7)	22.5	(1.7)	30.9	(2.4)	23.8	(2.0)	9.4	(1.2)	U‡	(0.8)
Ontario	2.6	(0.4)	9.8	(0.9)	22.7	(1.2)	29.4	(1.2)	23.6	(1.3)	9.9	(0.9)	2.0	(0.4)
Manitoba	4.8	(0.7)	15.8	(1.1)	27.0	(1.6)	28.3	(1.4)	17.6	(1.8)	5.7	(0.7)	U‡	(0.3)
Saskatchewan	3.8	(0.6)	12.1	(1.1)	26.0	(1.3)	31.0	(1.2)	20.1	(1.2)	6.2	(0.8)	U‡	(0.3)
Alberta	2.3	(0.5)	8.6	(1.1)	18.7	(1.2)	28.4	(1.6)	26.9	(1.7)	12.3	(1.4)	2.7	(0.7)
British Columbia	3.9	(0.8)	11.6	(1.1)	22.0	(1.4)	27.1	(1.4)	22.6	(1.5)	10.5	(1.1)	2.4	(0.5)
Francophone school systems														
Canada	2.8	(0.4)	10.3	(0.8)	22.0	(1.2)	30.9	(1.2)	24.3	(1.3)	8.4	(0.8)	1.2	(0.3)
Nova Scotia	U‡	(2.9)	21.5	(5.1)	31.1	(5.2)	22.3	(5.2)	14.4‡	(3.6)	U‡	(2.7)	U‡	(0.6)
New Brunswick	U‡	(1.9)	14.0	(2.2)	28.6	(3.2)	30.6	(3.2)	16.6	(2.9)	4.6‡	(1.5)	U‡	(0.6)
Quebec	2.4	(0.4)	9.4	(0.9)	21.0	(1.3)	31.3	(1.4)	25.7	(1.5)	9.0	(0.9)	1.3	(0.4)
Ontario	6.4	(1.0)	17.9	(2.1)	29.9	(2.0)	27.9	(1.9)	14.2	(1.9)	3.2	(0.7)	U‡	(0.2)
Manitoba	U‡	(2.4)	19.4	(4.0)	31.4	(4.7)	28.4	(5.0)	13.0‡	(4.2)	U‡	(1.8)	U‡	(0.4)
Alberta	U‡	(3.0)	12.6‡	(3.0)	23.8	(4.6)	30.4	(4.9)	19.6	(4.9)	U‡	(3.2)	U‡	(1.4)
British Columbia	U‡	(2.3)	14.0‡	(4.3)	27.8	(5.5)	31.6	(5.1)	16.9‡	(5.2)	U‡	(3.6)	U‡	(0.9)

‡ There are fewer than 30 observations.
U Too unreliable to be published.
Note: Because Newfoundland and Labrador, Prince Edward Island, and Saskatchewan did not oversample students by language, results for only English-language schools are available for these provinces.

Table B.3.8b

Proportion of students in anglophone and francophone school systems who performed below Level 2, at Level 2 or above, and at Levels 5 and 6: SCIENCE

	Canada and provinces	Anglophone school systems		Francophone school systems		Difference (A–F)	
		%	Standard error	%	Standard error	Difference	Standard error
Below Level 2							
	Canada	13.5	(0.6)	13.2	(1.1)	0.3	(1.3)
	Newfoundland and Labrador	15.4	(2.2)	--	--	--	--
	Prince Edward Island	18.3	(2.8)	--	--	--	--
	Nova Scotia	14.9	(1.6)	28.6**	(6.0)	-13.6*	(6.2)
	New Brunswick	19.7**	(2.2)	18.8	(3.2)	0.9	(3.7)
	Quebec	11.3	(1.9)	11.8**	(1.2)	-0.5	(2.2)
	Ontario	12.4	(1.1)	24.4**	(2.6)	-11.9*	(2.6)
	Manitoba	20.6**	(1.5)	24.6**	(5.3)	-4.1	(5.1)
	Saskatchewan	16.0	(1.4)	--	--	--	--
	Alberta	11.0**	(1.3)	17.4	(4.6)	-6.4	(4.8)
	British Columbia	15.5	(1.6)	19.2	(5.2)	-3.7	(5.2)
Level 2 or above							
	Canada	86.5	(0.6)	86.8	(1.1)	-0.3	(1.3)
	Newfoundland and Labrador	84.6	(2.2)	--	--	--	--
	Prince Edward Island	81.7	(2.8)	--	--	--	--
	Nova Scotia	85.1	(1.6)	71.4**	(6.0)	13.6*	(6.2)
	New Brunswick	80.3**	(2.2)	81.2	(3.2)	-0.9	(3.7)
	Quebec	88.7	(1.9)	88.2**	(1.2)	0.5	(2.2)
	Ontario	87.6	(1.1)	75.6**	(2.6)	11.9*	(2.6)
	Manitoba	79.4**	(1.5)	75.4**	(5.3)	4.1	(5.1)
	Saskatchewan	84.0	(1.4)	--	--	--	--
	Alberta	89.0**	(1.3)	82.6	(4.6)	6.4	(4.8)
	British Columbia	84.5	(1.6)	80.8	(5.2)	3.7	(5.2)
Levels 5 and 6							
	Canada	11.8	(0.7)	9.5	(0.9)	2.3*	(1.1)
	Newfoundland and Labrador	9.2	(1.4)	--	--	--	--
	Prince Edward Island	8.5	(2.6)	--	--	--	--
	Nova Scotia	9.5	(1.1)	U	(3.0)	5.9*	(2.7)
	New Brunswick	7.7**	(1.6)	5.4**	(1.7)	2.3	(2.1)
	Quebec	11.4	(1.5)	10.3**	(1.0)	1.1	(1.8)
	Ontario	11.8	(1.1)	3.7**	(0.8)	8.1*	(1.4)
	Manitoba	6.5**	(0.6)	U	(1.9)	--	--
	Saskatchewan	6.9**	(0.9)	--	--	--	--
	Alberta	15.0**	(1.6)	U	(3.9)	--	--
	British Columbia	12.9	(1.4)	U	(4.2)	--	--

-- Not available.
U Too unreliable to be published.
* Significant difference within Canada or province.
** Significant difference compared to Canada.
Note: Because Newfoundland and Labrador, Prince Edward Island, and Saskatchewan did not oversample students by language, results for only English-language schools are available for these provinces.

Table B.3.9

Average scores by language of the school system: MATHEMATICS

Canada and provinces	Anglophone school systems		Francophone school systems		Difference (A–F)	
	Average	Standard error	Average	Standard error	Difference	Standard error
Canada	507	(2.8)	530	(3.4)	-23*	(4.3)
Newfoundland and Labrador	488**	(6.5)	--	--	--	--
Prince Edward Island	486	(11.3)	--	--	--	--
Nova Scotia	494**	(6.3)	498	(17.8)	-4	(16.2)
New Brunswick	484**	(6.9)	508**	(10.1)	-24	(12.5)
Quebec	514	(6.8)	535**	(3.9)	-21*	(8.0)
Ontario	513**	(4.7)	497**	(9.0)	17	(10.8)
Manitoba	481**	(3.9)	492	(25.1)	-11	(26.8)
Saskatchewan	485**	(5.1)	--	--	--	--
Alberta	511	(5.1)	510	(14.9)	1	(15.7)
British Columbia	504	(5.3)	493**	(14.2)	12	(15.2)

-- Not available.
* Significant difference within Canada or province.
** Significant difference compared to Canada.
Note: Because Newfoundland and Labrador, Prince Edward Island, and Saskatchewan did not oversample students by language, results for only English-language schools are available for these provinces.

Table B.3.10

Average scores by language of the school system: SCIENCE

Canada and provinces	Anglophone school systems		Francophone school systems		Difference (A–F)	
	Average	Standard error	Average	Standard error	Difference	Standard error
Canada	519	(2.5)	516	(3.7)	3	(4.3)
Newfoundland and Labrador	506	(6.4)	--	--	--	--
Prince Edward Island	503	(9.5)	--	--	--	--
Nova Scotia	510	(4.6)	466**	(14.9)	44*	(13.9)
New Brunswick	494**	(6.5)	488**	(10.3)	6	(11.7)
Quebec	523	(5.9)	521**	(4.0)	1	(6.9)
Ontario	521	(4.2)	474**	(6.0)	47*	(7.3)
Manitoba	490**	(3.7)	470**	(16.0)	20	(16.2)
Saskatchewan	501**	(3.9)	--	--	--	--
Alberta	534**	(4.4)	502	(15.3)	32*	(15.2)
British Columbia	517	(5.4)	487	(15.9)	30	(15.7)

-- Not available.
* Significant difference within Canada or province.
** Significant difference compared to Canada.
Note: Because Newfoundland and Labrador, Prince Edward Island, and Saskatchewan did not oversample students by language, results for only English-language schools are available for these provinces.

Table B.3.11a

Percentage of students at each proficiency level by gender: MATHEMATICS

	Canada and provinces	Proficiency levels													
		Below Level 1		Level 1		Level 2		Level 3		Level 4		Level 5		Level 6	
		%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error
Girls															
	Canada	4.9	(0.5)	11.2	(0.7)	21.4	(1.0)	26.9	(0.9)	21.7	(1.0)	10.6	(0.6)	3.3	(0.4)
	Newfoundland and Labrador	U	(1.8)	14.6	(2.7)	29.0	(3.4)	29.4	(3.1)	15.2	(2.6)	U	(2.0)	U‡	(0.7)
	Prince Edward Island	U‡	(3.1)	18.8	(3.5)	25.6	(4.5)	26.2	(4.8)	15.9‡	(4.8)	U‡	(2.9)	U‡	(0.6)
	Nova Scotia	5.6	(1.7)	13.2	(1.9)	25.0	(2.1)	28.3	(2.2)	18.3	(2.0)	7.5	(1.5)	U‡	(0.8)
	New Brunswick	7.0	(1.2)	15.0	(2.4)	24.3	(2.1)	26.6	(2.3)	18.5	(2.8)	6.9	(1.9)	U‡	(0.7)
	Quebec	3.4	(0.8)	8.3	(1.1)	17.0	(1.3)	26.5	(1.4)	25.8	(1.5)	13.8	(1.1)	5.2	(0.9)
	Ontario	4.9	(0.8)	11.2	(1.2)	22.0	(1.8)	26.6	(1.9)	21.5	(1.9)	10.6	(1.4)	3.2	(0.7)
	Manitoba	7.7	(1.2)	17.4	(2.3)	25.7	(2.4)	26.1	(2.2)	16.6	(1.6)	5.6	(1.1)	U‡	(0.5)
	Saskatchewan	5.5	(1.0)	14.7	(2.2)	27.4	(2.3)	29.3	(2.7)	17.4	(2.2)	5.0	(1.1)	U‡	(0.4)
	Alberta	4.6	(1.0)	10.2	(1.4)	21.4	(2.6)	28.0	(2.5)	21.8	(1.9)	11.3	(1.7)	2.8	(0.7)
	British Columbia	6.0	(1.2)	13.0	(1.6)	22.2	(2.1)	26.2	(1.7)	19.9	(1.6)	9.4	(1.6)	3.2	(0.8)
Boys															
	Canada	5.1	(0.5)	11.3	(0.6)	20.2	(0.7)	24.9	(0.6)	21.8	(0.9)	12.0	(0.6)	4.7	(0.4)
	Newfoundland and Labrador	7.2	(1.8)	15.7	(2.5)	24.3	(3.2)	24.0	(2.7)	18.6	(2.9)	8.1	(2.4)	U‡	(1.2)
	Prince Edward Island	U‡	(3.7)	U‡	(4.1)	20.5	(3.9)	25.5	(4.2)	20.5	(4.7)	U‡	(3.3)	U‡	(1.7)
	Nova Scotia	7.2	(1.6)	14.8	(1.8)	24.1	(1.8)	24.0	(2.2)	19.1	(2.2)	8.2	(1.6)	U‡	(1.0)
	New Brunswick	8.0	(1.7)	14.5	(1.7)	23.3	(2.6)	23.5	(2.6)	18.6	(2.1)	9.2	(1.9)	U‡	(1.3)
	Quebec	3.7	(0.7)	8.0	(1.0)	16.2	(1.1)	24.4	(1.9)	24.5	(1.6)	15.7	(1.1)	7.5	(1.0)
	Ontario	4.4	(0.8)	11.1	(1.1)	20.6	(1.5)	25.0	(1.5)	22.0	(2.0)	12.4	(1.3)	4.6	(0.8)
	Manitoba	8.2	(1.3)	16.3	(1.6)	24.2	(2.3)	26.2	(1.8)	16.4	(1.7)	7.0	(1.3)	U‡	(0.5)
	Saskatchewan	7.3	(1.1)	15.7	(1.6)	25.2	(1.9)	26.2	(1.8)	18.1	(1.8)	6.1	(1.0)	U‡	(0.5)
	Alberta	5.9	(1.3)	11.6	(2.0)	20.0	(2.1)	25.5	(2.2)	21.4	(1.8)	11.6	(1.5)	3.9	(0.9)
	British Columbia	6.0	(1.0)	12.5	(1.8)	21.3	(1.9)	24.5	(2.1)	21.2	(2.0)	10.3	(1.3)	4.2	(0.9)

‡ There are fewer than 30 observations.
U Too unreliable to be published.

Table B.3.11b

Proportion of boys and girls who performed below Level 2, at Level 2 or above, and at Levels 5 and 6: MATHEMATICS

	Canada and provinces	Girls		Boys		Difference (G–B)	
		%	Standard error	%	Standard error	Difference	Standard error
Below Level 2							
	Canada	16.1	(0.9)	16.4	(0.8)	-0.3	(0.8)
	Newfoundland and Labrador	19.5	(3.0)	22.9**	(3.3)	-3.4	(4.5)
	Prince Edward Island	25.5**	(4.7)	22.0	(4.5)	3.5	(4.9)
	Nova Scotia	18.7	(2.5)	22.0**	(2.6)	-3.2	(2.8)
	New Brunswick	22.0**	(2.8)	22.5**	(2.0)	-0.5	(2.8)
	Quebec	11.7**	(1.4)	11.7**	(1.3)	0.0	(1.5)
	Ontario	16.1	(1.5)	15.5	(1.4)	0.6	(1.5)
	Manitoba	25.1**	(2.7)	24.5**	(1.9)	0.6	(3.5)
	Saskatchewan	20.2	(2.8)	23.0**	(1.9)	-2.8	(2.3)
	Alberta	14.8	(1.9)	17.5	(2.5)	-2.7	(2.1)
	British Columbia	19.0	(2.1)	18.5	(2.3)	0.5	(2.4)
Level 2 or above							
	Canada	83.9	(0.9)	83.6	(0.8)	0.3	(0.8)
	Newfoundland and Labrador	80.5	(3.0)	77.1**	(3.3)	3.4	(4.5)
	Prince Edward Island	74.5**	(4.7)	78.0	(4.5)	-3.5	(4.9)
	Nova Scotia	81.3	(2.5)	78.0**	(2.6)	3.2	(2.8)
	New Brunswick	78.0**	(2.8)	77.5**	(2.0)	0.5	(2.8)
	Quebec	88.3**	(1.4)	88.3**	(1.3)	0.0	(1.5)
	Ontario	83.9	(1.5)	84.5	(1.4)	-0.6	(1.5)
	Manitoba	74.9**	(2.7)	75.5**	(1.9)	-0.6	(3.5)
	Saskatchewan	79.8	(2.8)	77.0**	(1.9)	2.8	(2.3)
	Alberta	85.2	(1.9)	82.5	(2.5)	2.7	(2.1)
	British Columbia	81.0	(2.1)	81.5	(2.3)	-0.5	(2.4)
Levels 5 and 6							
	Canada	13.9	(0.8)	16.7	(0.9)	-2.8*	(0.9)
	Newfoundland and Labrador	6.9**	(2.2)	10.3**	(2.6)	-3.4	(2.3)
	Prince Edward Island	U	(3.1)	U	(3.8)	--	--
	Nova Scotia	9.7**	(1.8)	10.9**	(2.0)	-1.2	(2.0)
	New Brunswick	8.6**	(2.1)	12.1	(2.3)	-3.5	(2.7)
	Quebec	19.0**	(1.6)	23.2**	(1.6)	-4.2*	(1.8)
	Ontario	13.8	(1.7)	17.0	(1.7)	-3.1	(1.9)
	Manitoba	6.4**	(1.2)	8.7**	(1.4)	-2.2	(1.6)
	Saskatchewan	5.7**	(1.2)	7.5**	(1.1)	-1.8	(1.4)
	Alberta	14.1	(1.9)	15.6	(1.9)	-1.5	(1.9)
	British Columbia	12.7	(2.2)	14.5	(1.8)	-1.8	(2.0)

-- Not available.
U Too unreliable to be published.
* Significant difference within Canada or province.
** Significant difference compared to Canada.

Table B.3.12a

Percentage of students at each proficiency level by gender: SCIENCE

	Canada and provinces	Proficiency levels													
		Below Level 1		Level 1		Level 2		Level 3		Level 4		Level 5		Level 6	
		%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error	%	Standard error
Girls															
	Canada	2.6	(0.3)	9.5	(0.6)	22.5	(0.8)	30.8	(0.8)	23.9	(0.9)	9.0	(0.6)	1.7	(0.3)
	Newfoundland and Labrador	U‡	(1.1)	10.1	(2.1)	26.6	(2.8)	34.6	(2.8)	19.1	(2.8)	6.2	(1.7)	U‡	(0.6)
	Prince Edward Island	U‡	(1.7)	14.0‡	(3.5)	23.8	(5.3)	30.7	(4.8)	20.3‡	(4.6)	U‡	(3.3)	U‡	(1.1)
	Nova Scotia	2.6‡	(0.6)	10.2	(2.0)	24.0	(2.2)	31.7	(2.7)	21.6	(2.1)	8.7	(1.5)	U‡	(0.9)
	New Brunswick	3.2‡	(1.0)	13.7	(2.0)	27.8	(2.4)	30.7	(2.2)	18.3	(2.1)	5.5	(1.4)	U‡	(0.6)
	Quebec	2.0	(0.4)	8.6	(1.0)	21.2	(1.7)	31.9	(1.6)	26.3	(1.7)	8.7	(1.1)	1.3	(0.3)
	Ontario	2.8	(0.5)	9.2	(1.2)	23.1	(1.5)	30.8	(1.6)	23.3	(1.7)	8.8	(1.0)	1.9	(0.5)
	Manitoba	4.6	(1.0)	15.8	(1.6)	27.5	(2.1)	29.2	(2.0)	17.0	(2.1)	5.4	(0.9)	U‡	(0.4)
	Saskatchewan	3.0	(0.6)	10.7	(1.4)	26.3	(1.7)	32.9	(2.0)	20.4	(1.7)	6.2	(1.0)	U‡	(0.4)
	Alberta	1.8‡	(0.5)	6.8	(1.0)	18.3	(1.5)	31.1	(2.4)	27.4	(2.2)	12.1	(1.5)	2.5‡	(0.8)
	British Columbia	3.0	(0.9)	10.9	(1.4)	22.3	(2.0)	28.0	(2.0)	23.4	(1.8)	10.3	(1.6)	2.1‡	(0.7)
Boys															
	Canada	3.3	(0.3)	11.4	(0.6)	22.3	(0.8)	27.9	(0.9)	23.1	(0.8)	10.0	(0.7)	1.9	(0.3)
	Newfoundland and Labrador	4.1‡	(1.2)	14.2	(2.5)	24.8	(2.8)	25.3	(3.1)	20.1	(2.4)	9.0	(1.9)	U‡	(1.5)
	Prince Edward Island	U‡	(3.0)	12.9‡	(3.2)	20.3	(3.7)	28.5	(5.5)	22.4	(5.3)	U‡	(3.1)	U‡	(1.4)
	Nova Scotia	4.8	(1.0)	13.4	(1.8)	23.7	(2.1)	29.2	(2.3)	20.2	(2.0)	7.2	(1.3)	U‡	(0.7)
	New Brunswick	6.4	(1.4)	15.7	(2.2)	26.5	(2.6)	26.1	(2.5)	17.6	(2.1)	6.7	(1.6)	U‡	(0.6)
	Quebec	2.6	(0.6)	10.2	(1.3)	21.0	(1.3)	30.6	(1.4)	24.6	(1.5)	9.4	(1.2)	U	(0.5)
	Ontario	2.8	(0.5)	11.0	(1.1)	22.9	(1.6)	27.8	(1.6)	23.1	(1.5)	10.3	(1.3)	1.9	(0.5)
	Manitoba	5.0	(0.9)	15.9	(1.5)	26.7	(1.8)	27.5	(1.7)	18.0	(2.2)	5.8	(1.1)	U‡	(0.4)
	Saskatchewan	4.6	(0.9)	13.5	(1.5)	25.8	(2.0)	29.2	(1.8)	19.8	(1.6)	6.2	(1.2)	U‡	(0.4)
	Alberta	2.9	(0.7)	10.5	(1.6)	19.2	(1.6)	25.8	(1.7)	26.3	(2.1)	12.4	(2.0)	2.8	(0.9)
	British Columbia	4.7	(1.1)	12.3	(1.5)	21.8	(1.7)	26.1	(1.8)	21.7	(2.2)	10.7	(1.6)	2.7‡	(0.8)

‡ There are fewer than 30 observations.
U Too unreliable to be published.

Table B.3.12b

Proportion of boys and girls who performed below Level 2, at Level 2 or above, and at Levels 5 and 6: SCIENCE

	Canada and provinces	Girls		Boys		Difference (G–B)	
		%	Standard error	%	Standard error	Difference	Standard error
Below Level 2							
	Canada	12.1	(0.7)	14.8	(0.7)	-2.7*	(0.9)
	Newfoundland and Labrador	12.7	(2.4)	18.3	(3.0)	-5.6	(3.3)
	Prince Edward Island	16.8	(3.5)	20.7	(4.4)	-3.8	(6.2)
	Nova Scotia	12.8	(2.0)	18.2	(2.2)	-5.4*	(2.7)
	New Brunswick	16.8**	(2.2)	22.1**	(2.3)	-5.3*	(2.4)
	Quebec	10.6	(1.1)	12.9	(1.5)	-2.2	(1.7)
	Ontario	12.0	(1.4)	13.8	(1.2)	-1.8	(1.5)
	Manitoba	20.4**	(2.0)	20.9**	(1.7)	-0.5	(2.3)
	Saskatchewan	13.7	(1.6)	18.1	(2.0)	-4.5*	(2.2)
	Alberta	8.5**	(1.1)	13.4	(1.7)	-4.9*	(1.6)
	British Columbia	14.0	(1.8)	17.0	(2.1)	-3.0	(2.1)
Level 2 or above							
	Canada	87.9	(0.7)	85.2	(0.7)	2.7*	(0.9)
	Newfoundland and Labrador	87.3	(2.4)	81.7	(3.0)	5.6	(3.3)
	Prince Edward Island	83.2	(3.5)	79.3	(4.4)	3.8	(6.2)
	Nova Scotia	87.2	(2.0)	81.8	(2.2)	5.4*	(2.7)
	New Brunswick	83.2**	(2.2)	77.9**	(2.3)	5.3*	(2.4)
	Quebec	89.4	(1.1)	87.1	(1.5)	2.2	(1.7)
	Ontario	88.0	(1.4)	86.2	(1.2)	1.8	(1.5)
	Manitoba	79.6**	(2.0)	79.1**	(1.7)	0.5	(2.3)
	Saskatchewan	86.3	(1.6)	81.9	(2.0)	4.5*	(2.2)
	Alberta	91.5**	(1.1)	86.6	(1.7)	4.9*	(1.6)
	British Columbia	86.0	(1.8)	83.0	(2.1)	3.0	(2.1)
Levels 5 and 6							
	Canada	10.8	(0.6)	11.9	(0.9)	-1.1	(1.0)
	Newfoundland and Labrador	7.0**	(1.7)	11.4	(2.2)	-4.4	(2.9)
	Prince Edward Island	U	(3.5)	U	(2.9)	--	--
	Nova Scotia	10.0	(1.7)	8.6	(1.3)	1.3	(2.0)
	New Brunswick	6.3**	(1.5)	7.8**	(1.7)	-1.5	(1.8)
	Quebec	10.0	(1.1)	10.9	(1.4)	-0.9	(1.7)
	Ontario	10.7	(1.1)	12.3	(1.5)	-1.5	(1.6)
	Manitoba	5.9**	(0.9)	6.9**	(1.0)	-0.9	(1.5)
	Saskatchewan	6.8**	(1.1)	7.1**	(1.3)	-0.3	(1.6)
	Alberta	14.6**	(1.9)	15.3	(2.0)	-0.7	(2.2)
	British Columbia	12.4	(1.7)	13.4	(1.8)	-1.1	(2.2)

-- Not available.
U Too unreliable to be published.
* Significant difference within Canada or province.
** Significant difference compared to Canada.

Table B.3.13

Average scores by gender: MATHEMATICS

Canada, provinces, and OECD average	Girls		Boys		Difference (G–B)	
	Average	Standard error	Average	Standard error	Difference	Standard error
Canada	**510**	**(2.7)**	**514**	**(2.5)**	**-5***	**(2.3)**
Newfoundland and Labrador	486**	(7.6)	491**	(7.1)	-5	(7.2)
Prince Edward Island	479**	(10.4)	494	(13.9)	-15	(11.3)
Nova Scotia	495**	(6.5)	493**	(7.2)	2	(5.2)
New Brunswick	489**	(6.2)	493**	(6.6)	-4	(6.0)
Quebec	529**	(4.6)	536**	(4.0)	-7	(4.6)
Ontario	509	(4.8)	516	(5.0)	-7	(4.1)
Manitoba	479**	(5.1)	484**	(4.1)	-4	(5.7)
Saskatchewan	486**	(6.0)	485**	(4.9)	1	(4.2)
Alberta	511	(5.1)	510	(5.7)	1	(3.7)
British Columbia	502	(6.2)	507	(5.8)	-5	(5.7)
OECD average	**487****	**(0.5)**	**492****	**(0.5)**	**-5***	**(0.6)**

* Significant difference within Canada, province, or OECD.
** Significant difference compared to Canada.

Table B.3.14

Average scores by gender: SCIENCE

Canada, provinces, and OECD average	Girls		Boys		Difference (G–B)	
	Average	Standard error	Average	Standard error	Difference	Standard error
Canada	**520**	**(2.5)**	**516**	**(2.7)**	**3**	**(2.9)**
Newfoundland and Labrador	506	(7.0)	506	(8.1)	0	(8.1)
Prince Edward Island	504	(10.0)	499	(11.6)	5	(12.4)
Nova Scotia	514	(6.0)	502**	(5.4)	13	(6.5)
New Brunswick	496**	(6.2)	488**	(6.9)	8	(6.6)
Quebec	523	(4.3)	520	(4.4)	3	(4.5)
Ontario	519	(4.6)	518	(4.7)	0	(4.8)
Manitoba	489**	(5.1)	490**	(3.9)	-2	(5.3)
Saskatchewan	505**	(4.4)	497**	(4.6)	7	(4.6)
Alberta	538**	(4.2)	530**	(5.3)	8*	(4.0)
British Columbia	519	(5.7)	514	(6.4)	4	(5.7)
OECD average	**490****	**(0.5)**	**488****	**(0.5)**	**2***	**(0.5)**

* Significant difference within Canada, province, or OECD.
** Significant difference compared to Canada.

Table B.3.15a

Comparisons of performance, PISA 2003, 2006, 2009, 2012, 2015, and 2018: MATHEMATICS

Canada, provinces, and OECD average	2003		2006		2009		2012		2015		2018	
	Average	Standard error	Average	Standard error	Average	Standard error	Average	Standard error	Average	Standard error	Average	Standard error
Canada	**532**	**(1.8)**	**527**	**(2.4)**	**527**	**(2.6)**	**518***	**(2.7)**	**516***	**(6.1)**	**512***	**(3.7)**
Newfoundland and Labrador	517	(2.5)	507*	(2.8)	503*	(3.5)	490*	(4.2)	486*	(6.4)	488*	(7.0)
Prince Edward Island	500	(2.0)	501	(2.7)	487*	(3.0)	479*	(3.2)	499	(8.5)	487	(11.4)
Nova Scotia	515	(2.2)	506*	(2.6)	512	(3.0)	497*	(4.5)	497*	(7.2)	494*	(6.9)
New Brunswick	511	(1.4)	506	(2.5)	504*	(3.0)	502*	(3.2)	493*	(7.5)	491*	(6.3)
Quebec	536	(4.5)	540	(4.4)	543	(4.0)	536	(3.9)	544	(7.4)	532	(4.5)
Ontario	530	(3.6)	526	(3.9)	526	(3.8)	514*	(4.5)	509*	(7.0)	513*	(5.3)
Manitoba	528	(3.1)	521	(3.5)	501*	(4.1)	492*	(3.5)	489*	(7.0)	482*	(4.6)
Saskatchewan	516	(3.9)	507	(3.6)	506	(3.8)	506	(3.6)	484*	(6.3)	485*	(5.8)
Alberta	549	(4.3)	530*	(4.0)	529*	(4.8)	517*	(5.0)	511*	(7.3)	511*	(5.8)
British Columbia	538	(2.4)	523*	(4.6)	523*	(5.0)	522*	(4.8)	522*	(7.5)	504*	(5.9)
OECD average	**500**	**(0.6)**	**498**	**(1.5)**	**496***	**(2.0)**	**494***	**(2.0)**	**490**	**(5.6)**	**489***	**(3.7)**

* Statistically significant differences compared with PISA 2003.
Note: The linkage error is incorporated into the standard error for 2006, 2009, 2012, 2015, and 2018. Also, for some provinces, the standard errors from 2003 to 2006 and to 2009 differ from those in the previous PISA reports on trend results. These differences are due to the change of the method used by the OECD to compute the linkage error. The composition of the OECD countries varies from cycle to cycle.

Table B.3.15b

Comparisons of performance, PISA 2012, 2015, and 2018: MATHEMATICS

Canada, provinces, and OECD average	2012		2015		2018	
	Average	Standard error	Average	Standard error	Average	Standard error
Canada	**518**	**(1.8)**	**516**	**(4.2)**	**512**	**(4.1)**
Newfoundland and Labrador	490	(3.7)	486	(4.8)	488	(7.3)
Prince Edward Island	479	(2.5)	499*	(7.3)	487	(11.6)
Nova Scotia	497	(4.1)	497	(5.8)	494	(7.2)
New Brunswick	502	(2.6)	493	(6.2)	491	(6.6)
Quebec	536	(3.4)	544	(5.9)	532	(4.9)
Ontario	514	(4.1)	509	(5.5)	513	(5.6)
Manitoba	492	(2.9)	489	(5.5)	482	(5.0)
Saskatchewan	506	(3.0)	484*	(4.6)	485*	(6.0)
Alberta	517	(4.6)	511	(5.9)	511	(6.1)
British Columbia	522	(4.4)	522	(6.1)	504*	(6.2)
OECD average	**494**	**(0.5)**	**490**	**(4.3)**	**489**	**(4.1)**

* Statistically significant differences compared with PISA 2012.
Note: The linkage error is incorporated into the standard error for 2015 and 2018. The composition of the OECD countries varies from cycle to cycle.

Table B.3.16a

Comparisons of performance, PISA 2006, 2009, 2012, 2015, and 2018: SCIENCE

Canada, provinces, and OECD average	2006		2009		2012		2015		2018	
	Average	Standard error	Average	Standard error	Average	Standard error	Average	Standard error	Average	Standard error
Canada	**534**	**(2.0)**	**529**	**(3.0)**	**525***	**(4.0)**	**528**	**(4.9)**	**518***	**(4.1)**
Newfoundland and Labrador	526	(2.5)	518	(4.0)	514*	(5.0)	506*	(5.5)	506*	(7.3)
Prince Edward Island	509	(2.7)	495*	(3.5)	490*	(4.4)	515	(7.0)	502	(9.5)
Nova Scotia	520	(2.5)	523	(3.7)	516	(4.6)	517	(6.3)	508	(5.8)
New Brunswick	506	(2.3)	501	(3.5)	507	(4.4)	506	(6.3)	492	(6.7)
Quebec	531	(4.2)	524	(4.1)	516*	(4.8)	537	(6.5)	522	(5.1)
Ontario	537	(4.2)	531	(4.2)	527	(5.6)	524	(6.0)	519*	(5.3)
Manitoba	523	(3.2)	506*	(4.7)	503*	(4.8)	499*	(6.5)	489*	(5.0)
Saskatchewan	517	(3.6)	513	(4.5)	516	(4.6)	496*	(5.5)	501*	(5.2)
Alberta	550	(3.8)	545	(5.0)	539	(5.8)	541	(6.0)	534*	(5.6)
British Columbia	539	(4.7)	535	(4.8)	544	(5.3)	539	(6.2)	517*	(6.4)
OECD average	**500**	**(0.5)**	**501**	**(2.6)**	**496**	**(3.5)**	**493**	**(4.5)**	**489***	**(3.5)**

* Statistically significant differences compared with PISA 2006.
Note: The linkage error is incorporated into the standard error for 2009, 2012, 2015, and 2018. Also, for some provinces, the standard errors from 2006 to 2009 and to 2012 differ from those in the previous PISA reports on trend results. These differences are due to the change of the method used by the OECD to compute the linkage error. The composition of the OECD countries varies from cycle to cycle.

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Table B.3.16b

Comparisons of performance, PISA 2015 and 2018: SCIENCE

Canada, provinces, and OECD average	2015		2018	
	Average	Standard error	Average	Standard error
Canada	**528**	**(2.1)**	**518***	**(2.6)**
Newfoundland and Labrador	506	(3.2)	506	(6.5)
Prince Edward Island	515	(5.4)	502	(9.0)
Nova Scotia	517	(4.5)	508	(4.9)
New Brunswick	506	(4.5)	492	(5.9)
Quebec	537	(4.7)	522*	(4.0)
Ontario	524	(3.9)	519	(4.3)
Manitoba	499	(4.7)	489	(4.0)
Saskatchewan	496	(3.1)	501	(4.1)
Alberta	541	(4.0)	534	(4.6)
British Columbia	539	(4.3)	517*	(5.6)
OECD average	**493**	**(0.4)**	**489**	**(2.7)**

* Statistically significant differences compared with PISA 2015.
Note: The linkage error is incorporated into the standard error for 2018. The composition of the OECD countries varies from cycle to cycle.

Table B.3.17

Proportion of students who performed below Level 2 and at Levels 5 and 6, in PISA 2012 and 2018: MATHEMATICS

Canada and provinces	Below Level 2						Levels 5 and 6					
	2012		2018		Difference 2012–2018		2012		2018		Difference 2012–2018	
	%	Standard error	%	Standard error	Difference	Standard error	%	Standard error	%	Standard error	Difference	Standard error
Canada	13.8	(0.5)	16.3	(0.7)	2.4	(1.3)	16.4	(0.6)	15.3	(0.7)	-1.1	(1.4)
Newfoundland and Labrador	21.3	(2.0)	21.1	(2.3)	-0.2	(3.2)	9.4	(1.0)	8.6	(2.1)	-0.8	(2.6)
Prince Edward Island	24.7	(1.3)	23.7	(3.9)	-0.9	(4.2)	6.5	(0.9)	9.1	(2.9)	2.6	(3.2)
Nova Scotia	17.7	(1.5)	20.3	(2.2)	2.6	(2.8)	9.0	(1.3)	10.3	(1.6)	1.3	(2.3)
New Brunswick	16.3	(1.2)	22.3	(2.0)	6.0*	(2.5)	10.1	(1.2)	10.3	(1.7)	0.2	(2.4)
Quebec	11.2	(1.0)	11.7	(1.1)	0.5	(1.8)	22.4	(1.3)	21.1	(1.3)	-1.3	(2.1)
Ontario	13.8	(1.1)	15.8	(1.2)	2.0	(1.9)	15.1	(1.4)	15.4	(1.5)	0.4	(2.3)
Manitoba	21.2	(1.5)	24.8	(1.6)	3.6	(2.3)	10.3	(1.0)	7.6	(1.0)	-2.7	(1.8)
Saskatchewan	15.3	(1.1)	21.6	(2.1)	6.3*	(2.5)	12.2	(1.2)	6.6	(0.9)	-5.6*	(1.8)
Alberta	15.1	(1.5)	16.2	(2.0)	1.0	(2.7)	16.9	(1.5)	14.8	(1.6)	-2.1	(2.4)
British Columbia	12.3	(1.3)	18.8	(1.8)	6.5*	(2.4)	16.5	(1.6)	13.6	(1.7)	-2.9	(2.5)

* Significant difference within Canada or province.

Table B.3.18

Proportion of students who performed below Level 2 and at Levels 5 and 6, in PISA 2015 and 2018: SCIENCE

Canada and provinces	Below Level 2						Levels 5 and 6					
	2015		2018		Difference 2015–2018		2015		2018		Difference 2015–2018	
	%	Standard error	%	Standard error	Difference	Standard error	%	Standard error	%	Standard error	Difference	Standard error
Canada	11.1	(0.5)	13.4	(0.5)	2.3*	(0.8)	12.4	(0.6)	11.3	(0.6)	-1.0	(0.9)
Newfoundland and Labrador	15.5	(1.3)	15.4	(2.2)	0.0	(2.6)	7.8	(1.0)	9.2	(1.4)	1.4	(1.7)
Prince Edward Island	11.3	(2.1)	18.8	(2.5)	7.5*	(3.3)	8.7	(2.0)	8.3	(2.5)	-0.4	(3.2)
Nova Scotia	12.8	(1.5)	15.4	(1.6)	2.6	(2.2)	9.8	(1.2)	9.3	(1.1)	-0.5	(1.6)
New Brunswick	15.6	(1.9)	19.4	(1.8)	3.8	(2.7)	8.1	(1.1)	7.0	(1.3)	-1.0	(1.8)
Quebec	8.5	(1.1)	11.7	(1.1)	3.3*	(1.5)	12.8	(1.5)	10.4	(0.9)	-2.4	(1.8)
Ontario	12.3	(1.0)	12.9	(1.1)	0.7	(1.5)	12.1	(1.1)	11.5	(1.0)	-0.6	(1.5)
Manitoba	17.4	(1.7)	20.7	(1.5)	3.2	(2.3)	7.1	(1.1)	6.4	(0.6)	-0.7	(1.3)
Saskatchewan	16.7	(1.4)	16.0	(1.4)	-0.7	(2.0)	6.2	(0.7)	6.9	(0.9)	0.8	(1.2)
Alberta	8.6	(1.0)	11.0	(1.2)	2.4	(1.6)	15.9	(1.4)	14.9	(1.6)	-0.9	(2.1)
British Columbia	8.7	(1.2)	15.5	(1.6)	6.8*	(2.0)	14.7	(1.5)	12.9	(1.4)	-1.8	(2.0)

* Significant difference within Canada or province.