

Measuring Up: Canadian Results of the OECD PISA 2025 Study

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

Highlights



cmec

Canada 

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Canadian results in science in international context

Canada has maintained a strong level of performance in science, with 84 percent of Canadian 15-year-old participants in PISA reaching the baseline level of science proficiency required to participate meaningfully in modern society (Level 2), compared to an average of 74 percent of students across OECD countries. Inversely, 16 percent of Canadian students did not reach Level 2 in science, compared to 26 percent on average in OECD countries. Only three countries and three economies had both a higher percentage of students performing at or above Level 2 and a lower percentage of students performing below Level 2 in science compared to Canada. At the higher end of the PISA science scale, 11 percent of Canadian students attained the highest levels of proficiency (Levels 5 and 6), compared to 7 percent across OECD countries.

Canadian students achieved an average score of 510 in science, which is 28 points above the OECD average. Canada was outperformed by only four countries (Singapore, Japan, Estonia, and Korea) and three economies (B-S-J-Z (China), Macao (China), and Chinese Taipei). Students in Canada overall performed as well as students in the United Kingdom, New Zealand, Australia, and the United States.

Canadian students also achieved strong results in each of the three science competency subscales reported on by PISA, as well as in the environmental science subscale. Indeed, Canadian averages were above the OECD averages across all the science subscales (see the box “What is PISA?” for definitions of the subscales).

Provincial results in science

Across the provinces, the percentage of students at or above the baseline level of proficiency in science ranged from 73 percent in New Brunswick to 85 percent in Quebec and Alberta. At the higher end of the PISA science proficiency scale, 14 percent of students in Alberta performed at Level 5 or above.

With respect to average scores, seven provinces performed above the OECD average in science. Students in Quebec, Ontario, Alberta, and British Columbia achieved average scores that were at the Canadian average. Students in the other six provinces (Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick, Manitoba, and Saskatchewan) had average scores that were below the Canadian average. There was also variation across the provinces on the science subscales: students in Alberta scored above the Canadian average on the explain phenomena scientifically subscale, and at the Canadian average on the other three subscales. Students in Ontario scored higher than the Canadian average on the research, evaluate, and use scientific information for decision-making and action subscale and on the environmental science subscale, and at the Canadian average on the other two subscales. Students in all other provinces scored at or below the Canadian average on all the subscales.

Equity in Canada

The gap that exists between students with the highest and lowest average scores is a valuable indicator of equity in education outcomes. For Canada overall, those in the highest decile scored an average of 258 points higher in science than those in the lowest decile, which is similar to the average gap in OECD countries (258 points). At the provincial level, the smallest gaps (i.e., most equity) were in Quebec, Saskatchewan, and Manitoba, while the largest gaps (i.e., least equity) were observed in Alberta and British Columbia.

What is PISA?

The Programme for International Student Assessment (PISA) was initiated by the member countries of the Organisation for Economic Co-operation and Development (OECD) to measure the skills and knowledge of 15-year-old students. Data gathered through PISA allow for a thorough comparative analysis of the performance of students near the end of their compulsory education. In addition to student performance data, the contextual data collected as part of the assessment provide insight into the ways in which achievement varies across different social and economic groups, both within and among countries. As a result, PISA provides policy-oriented international indicators to shed light on a range of factors that contribute to successful students, schools, education systems, and learning environments. 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).

The assessment has been conducted every three years since 2000 (due to the global pandemic, the cycle scheduled for 2021 was delayed by a year). PISA assesses proficiency in science, reading, and mathematics, and provides a more detailed look at one of those domains in the years when it is the major focus. The major focus of PISA 2025 was science, while reading and mathematics were tested as minor domains, with learning in the digital world as an innovative domain. As part of the assessment, students and their school principals completed questionnaires that are designed to provide contextual information to aid in the interpretation of the performance results.

Eighty-three countries and eight economies participated in PISA 2025. Typically, between 5,250 and 7,950 15-year-old students from at least 150 schools were tested in each country/economy. In Canada, approximately 24,600 students from close to 900 schools participated across the 10 provinces. The large Canadian sample was required to produce reliable estimates representative of each province and for both French- and English-language school systems in Prince Edward Island, Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan, Alberta, and British Columbia. The assessment was administered in English and in French, depending on the school system in which students were enrolled.

For the science, reading, and mathematics assessment, multistage adaptive test designs were used. The multistage adaptive test design was first implemented for reading in PISA 2018, for mathematics in PISA 2022, and for science in PISA 2025. The distinction between the coverage of the major domain and the two minor domains has been less prominent in the last three PISA cycles than in previous administrations. As in 2018 and 2022, the test design in 2025 provided full coverage of the constructs for all three domains, with approximately one-half of the total testing time dedicated to the major domain.

In PISA 2025, the science domain consists of four subscales: three science competency subscales and one environmental science subscale.

The science competency subscales consist of the following competencies:

- *explain phenomena scientifically* (produce and evaluate explanations and solutions for a range of natural and technological phenomena and problems);
- *construct and evaluate designs for scientific inquiry, and interpret scientific data and evidence critically* (construct and evaluate scientific investigations as well as ways of addressing questions scientifically and of interpreting data); and

- *research, evaluate, and use scientific information for decision-making and action* (research and evaluate scientific claims and arguments in a variety of representations and draw appropriate conclusions).

The environmental science subscale consists of the following competencies:

- explain the impact of human interactions with Earth’s systems;
- make informed decisions to act, based on evaluation of diverse sources of evidence and application of creative and systems thinking, to regenerate and sustain the environment; and
- demonstrate respect for diverse perspectives as well as hope in seeking solutions to socioecological crises.

Results in reading and mathematics

In reading, 78 percent of Canadian students and 69 percent of students in OECD countries performed at or above Level 2, the baseline level of proficiency. In contrast, 22 percent of Canadian students did not reach the baseline level in reading, compared to an average of 31 percent across OECD countries. At the higher end of the scale, 9 percent of students in Canada overall performed at Level 5 or above, compared to an average of 6 percent across OECD countries.

In mathematics, 74 percent of Canadian students and 65 percent of students in OECD countries performed at or above Level 2. In contrast, 26 percent of Canadian students did not reach the baseline level in mathematics, compared to 35 percent of students on average across the OECD. At the higher end of the mathematics achievement scale, 11 percent of Canadian students performed at Level 5 or above, compared to an OECD average of 8 percent.

On average, students in Canada overall performed well in reading and mathematics. Canadian students had an average score of 490 in reading and 485 in mathematics, well above the respective OECD averages of 461 and 463. Among the 90 other countries and economies that participated in PISA 2025, six countries and three economies had scores above the Canadian average in reading, while five countries and four economies had scores above the Canadian average in mathematics.

The following table compares the average scores in the provinces with those in Canada overall for reading and mathematics.

Comparison of Canadian and provincial average scores in reading and mathematics		
Above* the Canadian average	At the Canadian average	Below* the Canadian average
Reading		
	Nova Scotia, Ontario, Saskatchewan, Alberta, British Columbia	Newfoundland and Labrador, Prince Edward Island, New Brunswick, Quebec, Manitoba
Mathematics		
Quebec	Ontario, Alberta, British Columbia	Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick, Manitoba, Saskatchewan

* Denotes significant difference

Note: Results for Canada and most provinces (except Prince Edward Island, New Brunswick, and Saskatchewan) should be treated with caution because one or more PISA technical standards were not met (see Appendix A of *Measuring Up: Canadian Results of the OECD PISA 2025 Study* for further details).

Achievement in science by language of the school system

In Canada overall, there was no significant difference between French- and English-language school systems in the percentage of students achieving below Level 2 or at Level 2 or above in science. However, English-language school systems had a greater percentage of students attaining the highest levels of performance (Levels 5 and 6) in comparison to their French-language counterparts.

Canadian students in English-language school systems achieved higher average scores in science (512) than their peers in French-language systems (504). Students in majority-language school systems in Canada overall achieved average scores in science that were 31 points higher than those of their counterparts in minority-language school systems.

At the provincial level, in English-language systems, students in Quebec, Ontario, Alberta, and British Columbia scored at the Canadian English average, while the scores of students in the other six provinces were below the Canadian English average. In French-language schools, Quebec students scored above the Canadian French average, and British Columbia students scored at the Canadian French average. The scores for students in the remaining seven provinces for which reliable data are available were below the Canadian average for francophone school systems.

Achievement in science by gender

A comparable percentage of boys and girls performed at Level 2 or higher in science in Canada as a whole and in all the provinces. However, a higher percentage of boys than girls were high performers in science (Levels 5 and 6) in Canada overall, as well as in Ontario. There was no significant difference between the percentage of boys and girls performing at the highest levels of proficiency in the other seven provinces for which data are available.

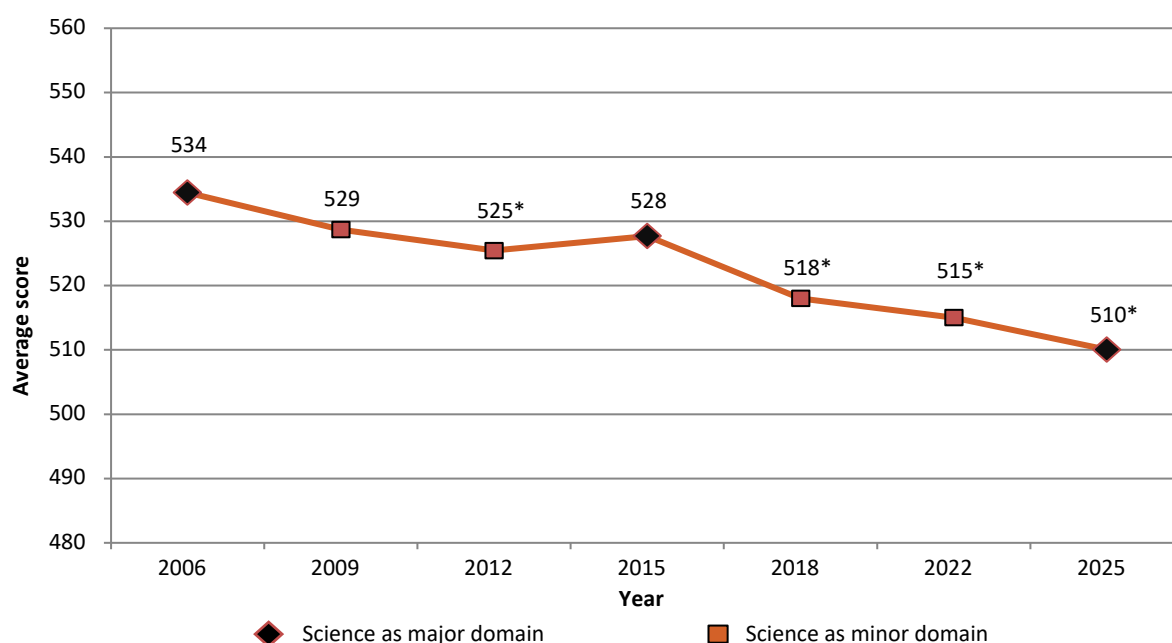
With respect to average scores in science, boys outperformed girls by 5 points at the pan-Canadian level, while girls outperformed boys on average in the OECD by 1 point. Gender gaps in science proficiency were reported in more than half of the countries and economies participating in PISA 2025.

At the provincial level, boys in Alberta scored above the Canadian average for boys in science. In Quebec, Ontario, and British Columbia, both male and female students scored at the respective Canadian averages. In addition, in Saskatchewan and Alberta, girls scored at the Canadian average for girls. In all other provinces, both girls and boys scored below the respective Canadian averages.

Changes in science performance over time

PISA 2025 constitutes the seventh assessment of science since 2006, when science was first the major domain. In Canada, as well as on average across the OECD, science performance declined between 2006 and 2025. At the provincial level, science scores decreased in all provinces over the same period. Between 2015, the last time science was the major domain, and 2025, a decline in science scores was observed in Canada, in seven provinces, and on average across the OECD. It should be noted that PISA 2025 is the first PISA assessment administered in schools since the end of the COVID-19 global pandemic. Although science scores have declined over the longer term, scores remained stable between 2018 and 2025 in Canada overall, in six provinces, and on average in the OECD. Furthermore, between 2022 and 2025, science scores remained stable in Canada overall, in all provinces, and on average in the OECD.

Average science scores in Canada over time, 2006–2025



* Significant difference compared with baseline (2006)

Note: Results for Canada for PISA 2022 and 2025 should be treated with caution because one or more PISA technical standards were not met (see Appendix A of *Measuring Up: Canadian Results of the OECD PISA 2025 Study* for further details).

Since 2015, the percentage of low-performing students in science (below Level 2) increased at the pan-Canadian level, on average in the OECD, and in all provinces except Manitoba and Saskatchewan. At the other end of the scale, there was no significant difference between 2015 and 2025 in Canada overall in the percentage of students reaching the highest levels in science (Levels 5 and 6). The same was also true in all provinces except New Brunswick and Quebec, where the percentage of students reaching the highest levels in science decreased.

Changes in reading and mathematics performance over time

Average reading scores in Canada overall declined by 17 points between 2022 and 2025, and by 30 points between 2018 (the last time reading was the major domain) and 2025. These decreases are comparable to those observed on average across OECD countries (15 points and 26 points, respectively). With regard to proficiency levels, the percentage of low-performing students (below Level 2) in reading increased in Canada overall (from 18 to 22 percent) and in Prince Edward Island, New Brunswick, Ontario, and Alberta between 2022 and 2025. At the same time, the percentage of top-performing (Level 5 or above) students declined in Canada overall as well as in Quebec, Ontario, and Alberta.

Average scores in mathematics declined between 2022 and 2025 in Canada overall (by 12 points) and, similarly, on average across the OECD (by 9 points). These decreases are part of a longer-term trend in mathematics since 2012, the last time mathematics was the major domain prior to 2022. At the provincial level, average scores remained stable in the majority of provinces between 2022 and 2025, but declined in Prince Edward Island, New Brunswick, Quebec, and Ontario. With respect to proficiency levels, between 2022 and 2025, the percentage of low-performing students in mathematics increased in Canada overall and in four provinces (Prince Edward Island, New Brunswick, Quebec, and Ontario). Over the same time period, the percentage of top-performing students remained stable in Canada overall and in all provinces.

Looking forward

The results of PISA 2025 reveal that Canada continues to perform at a strong level in science. Approximately five out of six students in Canada attained the baseline level of science proficiency required to take advantage of further learning opportunities and to participate meaningfully in modern society. Yet, in spite of these results, declining science scores in Canada overall and all provinces since PISA 2006 suggest that there is cause for concern. For numerous students, science continues to present a challenge; notably, one in six Canadian students performed at the lowest levels of proficiency (below Level 2). In Canada overall, a gender gap favouring boys was observed in science, and differences in performance with respect to language of the school system also continue to exist.

Although the performance of Canadian students has declined in all three domains since the last time each was the major focus of PISA (2015 for science, 2018 for reading, and 2022 for mathematics), these declines are similar to those observed on average across OECD countries. Despite declining results, Canada continues to perform well in a global context and remains among the top-performing countries and economies in all three domains.

Further analysis of the information collected through PISA will help provide a fuller understanding of the extent to which other important contextual 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.

The next PISA assessment is planned for 2029, with reading as the major domain, and media and artificial intelligence literacy as the innovative domain.

Further Canadian results are available in the report *Measuring Up: Canadian Results of the OECD PISA 2025 Study — The Performance of Canadian 15-Year-Olds in Science, Reading, and Mathematics*.

This publication is available electronically without charge, at www.cmec.ca.