

PISA 2012 FAQ



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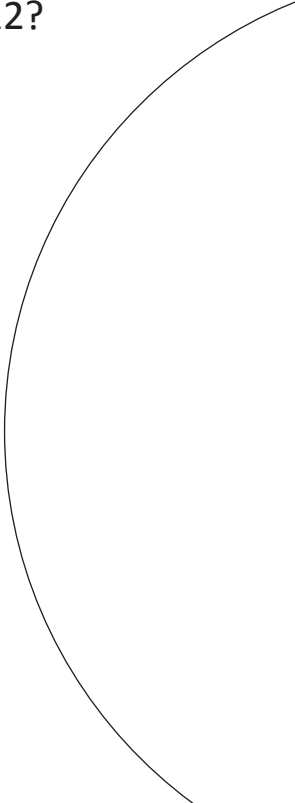


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Council of
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of Education,
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(Canada)

PISA 2012 FAQ

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What is PISA?

Launched in 1997 by the Organisation for Economic Co-operation and Development (OECD) and first administered in 2000, the Programme for International Student Assessment (PISA) is a triennial survey of the knowledge and skills of 15-year-olds near the end of their compulsory schooling. PISA draws on leading international expertise to develop valid comparisons across countries and cultures and provides education researchers, policy-makers, and the public with comprehensive international data in three core learning areas: mathematics, reading, and science.

To date, students representing more than 70 countries and economies have participated in the assessment.



What is PISA 2012?

PISA 2012 is the fifth iteration of the OECD assessment. In 2012, mathematics was the focus, but the assessment also included testing of reading, science, problem solving, and financial literacy. PISA 2012 evaluated approximately 510,000 students from 65 countries and economies. The assessment came in two formats: paper-and-pencil and computer-based. In addition, contextual questionnaires were administered to students and school principals to collect data on student, family, and school factors that can help explain differences in performance.

Why does Canada participate in PISA?

Canada's participation in PISA ensures that the performance of Canadian students in the core learning areas of mathematics, reading, and science can be measured against that of students in 65 other countries around the world.

The data collected by PISA not only provide a comparable measure of success but can also be further analyzed by policy-makers and researchers to help to identify the characteristics of high-performing education systems.



Who are the Canadian partners involved in PISA?

Employment and Social Development Canada (ESDC), Statistics Canada, and the 10 provincial ministries and departments of education, through the Council of Ministers of Education, Canada, are partners in administering PISA. The Canadian report was developed by CMEC and ESDC.

How much does PISA cost?

At the international level, PISA is funded by contributions to OECD from participating countries. In Canada, most of the direct costs for PISA are assumed by ESDC, while indirect costs are covered by the provinces through CMEC. For the three years of the latest cycle of PISA, the direct cost was approximately \$2.4 million per year.



How many students in Canada took part in PISA 2012?



In Canada, approximately 21,000 students from about 900 different schools in the 10 provinces took part in PISA 2012. The assessment was administered in English or in French according to the province's school system. The total number of students who participated in each province is outlined in the appendix to the PISA 2012 Canadian report. Currently, Yukon, Northwest Territories, and Nunavut do not participate in PISA, nor do Aboriginal students from band-operated schools.

Why is Canada's sample size so much larger than that of many other countries?



The smaller sample sizes used in many countries provide results that are valid at the national level only. In Canada, education policy is developed and implemented at the provincial and territorial level, so a larger sample is required to obtain statistically reliable results in each jurisdiction. In addition, Canada oversampled official-language minorities in seven provinces to learn more about the skills of that population.

What is the difference between the OECD report and the Canadian report?

The OECD PISA report focuses on the results for each country and economic region that has chosen to participate in the assessment. It also offers detailed quantitative and qualitative information on personal and school factors that influence a student's performance.

Canada releases its own companion report at the same time as the OECD

report to provide further information on student performance at the provincial level and show comparative results across and between Canadian provinces as well as other countries and economies. The Canadian report also provides performance results for English- and French-language systems and by gender.

What is the PISA assessment cycle?

PISA operates on a cycle that allows for comparison of results over time in all three core learning areas — reading, mathematics, and science. These data help participating countries and economies — and Canadian provinces — understand how the performance of their education systems may have

changed over time. Since 2000, each PISA assessment has had a major domain and two minor domains. The major domain (shown in green in the table below) has changed every three years.

2000	Reading	Math	Science
2003	Reading	Math	Science
2006	Reading	Math	Science
2009	Reading	Math	Science
2012	Reading	Math	Science
2015	Reading	Math	Science

As the table shows, in 2012, mathematics was the major domain for a second time, with reading and science as minor domains. Two developmental domains were added to PISA 2012: problem solving and financial literacy. Canada participated in the problem-solving component, but not financial literacy.

PISA 2015 will be the sixth round to be completed, and science will be its major domain. The 2015 assessment will likely be fully computer-based, and Canadian students are expected to be assessed in two additional developmental domains: collaborative problem solving and financial literacy.



How can student performance across countries, economies, and Canadian provinces be compared?

Education systems and school programs differ from one jurisdiction to another, so comparing results can be a complex task. PISA allows a variety of education systems to be compared according to a set of common benchmarks in reading, mathematics, and science. These benchmarks have been established through extensive consultations with participating OECD countries and with the guidance of statisticians, psychometricians, and other pedagogical experts from around the world. They

reflect in general terms what 15-year-old students are expected to know and be able to do in the three core learning areas in order to meet real-life challenges.

By agreeing to the common benchmarks developed by PISA to evaluate student achievement, Canadian provinces — as well as OECD countries and economies — are able to determine their performance in relation to other PISA participants, even if their approaches to education differ.

How can we compare average scores?

Because scores are based on samples of students from each country and province, we cannot say with certainty that these scores are the same as those that would have been obtained had all 15-year-olds been tested. A “confidence interval” is a range of scores within which the score for the population is likely to fall 95 per cent of the time, or 19 times out of 20.

When comparing two countries or two provinces, the two average scores cannot be said to differ if the confidence interval for the two average scores overlaps.

For example, countries performing at about the same level as Canada have a confidence interval for the average score that overlaps with Canada’s confidence interval.

In cases where the confidence intervals overlap only slightly, an additional test is usually conducted to determine whether there is a significant difference between the two populations.

How was mathematical literacy defined in PISA 2012?

OECD defined mathematical literacy as: “... 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 recognize the role that mathematics plays in the world and to make the well-founded judgments and decisions needed by constructive, engaged, and reflective citizens.”

PISA’s assessment of mathematical literacy focused not only on overall skills in mathematics but also on specific mathematics subdomains such as space and shape, change and relationships, quantity, and uncertainty.

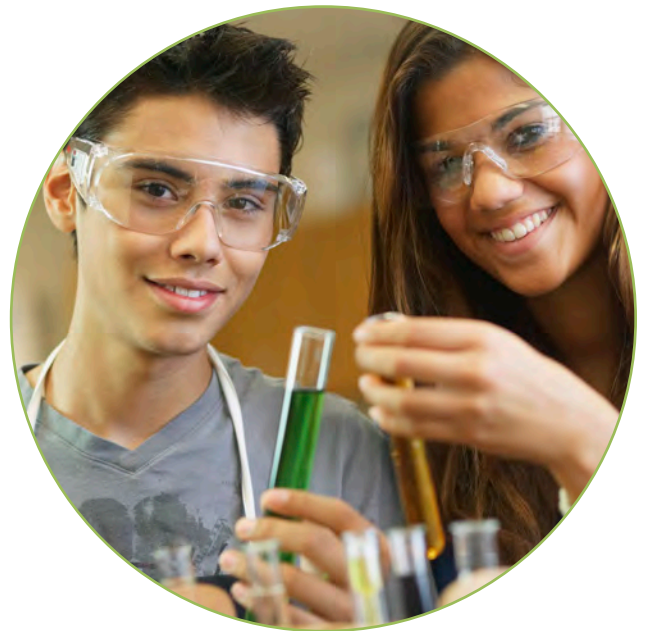


What were the levels of mathematics achievement in PISA 2012?

Mathematics achievement was divided into six levels, each representing a group of tasks of increasing difficulty, and with Level 6 being the highest and Level 1 the lowest. OECD considers Level 2 to be the baseline level of proficiency that is required to participate fully in society. A difference of one level is considered an important difference in student performance.

How were reading literacy and scientific literacy defined in PISA 2012?

In PISA 2012, reading literacy was defined as an individual's capacity to understand, use, reflect on, and engage with written texts in order to achieve one's goals, develop one's knowledge and potential, and participate in society. Scientific literacy was defined as an individual's capacity to use scientific knowledge, identify questions, and draw evidence-based conclusions in order to understand and make decisions about the natural world and the changes made to it through human activity.



Is the assessment fair to Canadian students?

Canada has actively participated in PISA to ensure that the uniqueness of our country's education systems is taken into account. Factors such as linguistic differences, rural and urban school locations, and cultural influences were all considered when developing the assessment. In addition, the universal framework for each subject incorporates an agreed-upon philosophy for all countries that is based upon the latest pedagogical research.

In the sense that Canadian students answer the same questions as students from every other country, it is very fair. The assessment is also unique in that it is not tied to the curriculum of any province or participating country or economy but is instead a fair measurement of students' abilities to use their learning skills to solve real-life situations.

How will the results from PISA be used?

The assessment results will be used by provincial education ministries/ departments and researchers to evaluate the quality of our education systems and inform policy development.

OECD plans to produce further thematic reports based on the PISA 2012 performance data and the results of the student and school questionnaires. CMEC and its federal partners will also conduct analyses of PISA data, and provinces will undertake analyses pertinent to their unique educational circumstances.

