

Context Statement

Social Context

In 2001, Ontario had a population of approximately 11,874,400. A critical issue in the provision of education programs and services is the diverse ethnocultural composition of Ontario's student population and the large number of children and youth from immigrant families. Through immigration, Ontario receives approximately 68% of Canada's newcomers. To overcome language and cultural barriers that could affect student achievement, English-language boards and schools (especially in urban areas) have to provide instruction in English and French as second languages.

On the other hand, French-language schools offer awareness and upgrading programs in French as well as a beginners' English program. Finally, all school boards provide community programs and services through partnerships between the school and the community.

Ontario is characterized by a range of boards, from large urban school boards that serve densely populated communities, to northern district school boards that serve small numbers of students spread over wide geographic areas. The school board system is made up of 60 English-language boards, 12 French-language boards, and 37 school authorities that are responsible for schools in small and remote communities.

Organization of the School System

Ontario has two types of publicly funded school boards: public boards, which enrol approximately 70% of the student population, and Catholic boards, which enrol the other 30% of the student population. Of the 5% of students enrolled in French-language school programs, about 80% are in Catholic schools.

In 1999–2000, Ontario had 1,427,358 students enrolled in 3,970 elementary schools and 704,268 students enrolled in 820 secondary schools. There were approximately 118,408 full-time teachers. The school program can extend from junior kindergarten (age 4) to the Ontario Academic Courses (OACs), usually taken in the final year of secondary school, which are designed to prepare students for postsecondary education and the workplace. Students who entered grade 9 in the fall of 1999 have been following the new curriculum developed for the four-year secondary program.

Mathematics Teaching

Ontario has developed new expectations-based curriculum and criterion-based assessment policies in every subject from grade 1 through grade 12. The mathematics expectations and achievement charts are included in *The Ontario Curriculum, Grades 1–8: Mathematics, 1997*; *The Ontario Curriculum, Grades 9 and 10: Mathematics, 1999*; and *The Ontario Curriculum, Grades 11 and 12: Mathematics, 2000*.

The mathematics courses from grades 1 to 8 are developed in five strands: number sense and numeration; measurement; geometry and spatial sense; patterning and algebra; and data management and probability. Teachers prepare student reports on at least two of these strands at each reporting period and report on each strand at least twice during the year.

The new curriculum for grades 9–12 mathematics courses was also developed in strands, but these strands vary from course to course. Expectations in some strands are intended to be addressed throughout the course, while other expectations may be the focus of work for only part of the course. Student achievement is reported as a percentage score at each reporting period.

The achievement charts for grades 9–10 and 11–12 require teachers to assess/evaluate/report on student achievement in four categories: knowledge and understanding; thinking, inquiry, and problem solving; communication; and application.

A requirement for graduation is that students earn three credits in mathematics, at least one of those in grade 11 or grade 12. Students in grade 9 may select courses of two types — academic or applied. In grade 10, it is possible for a student to then cross over and take courses of another type. In grade 11, destination-labelled courses are offered for mathematics as university, university/college, college, or workplace. Grade 12 destination-labelled mathematics courses are university, college, or workplace.

Mathematics Testing

Classroom teachers are responsible for classroom evaluation and promotion to the next grade level; Ontario does not conduct province-wide examinations for these purposes. The Education Quality and Accountability Office (EQAO) was established in 1995 to ensure greater accountability and to contribute to the enhancement of education in Ontario. The EQAO now conducts annual assessments for reading, writing, and mathematics in grades 3 and 6, for mathematics in grade 9, and for literacy in grade 10. Students must pass the grade 10 literacy test to obtain a graduation diploma. These provincial assessments are based on the expectations outlined in *The Ontario Curriculum*.

With respect to the mathematics program, Ontario has a history of involvement in international assessments, such as those conducted by the International Association for the Evaluation of Educational Achievement (IEA) and, more recently, the Organisation for Economic Co-operation and Development (OECD).

In the SAIP Mathematics III Assessment (2001), most 13-year-old students were enrolled in either grade 8 or grade 9 mathematics, both of which are mandatory core subjects in the new curriculum. However, the mathematics experiences of the 16-year-old students would have been more varied. Most of the 16-year-old students in the assessment would have been studying the old mathematics curriculum and taking a grade 11 course at one of the three possible levels of difficulty or would have taken no mathematics course since grade 10. Some of the 16-year-old students may have begun the new curriculum in September 1999.

Results for Ontario (English)

Mathematics Content

Ontario students from both age groups who responded in English performed as well as Canadian students as a whole at all levels of achievement.

In the 2001 assessment, more Ontario English-language 13-year-old students performed at levels 2 and 3 than in 1997. There were no significant changes in the performance of 16-year-old Ontario English-language students between the 1997 assessment and that of 2001.

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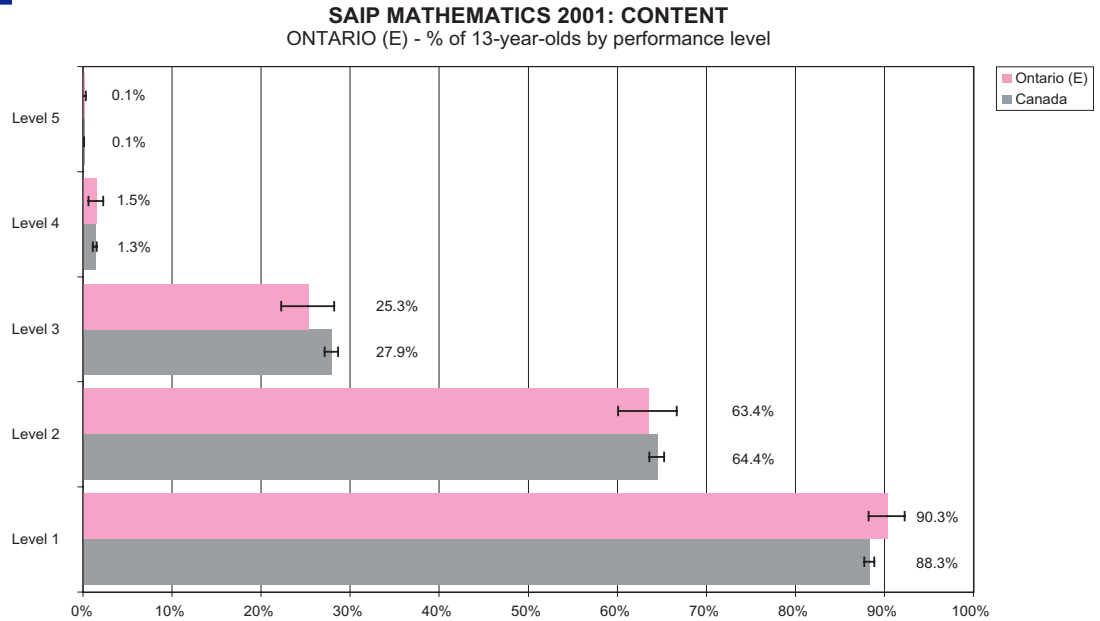
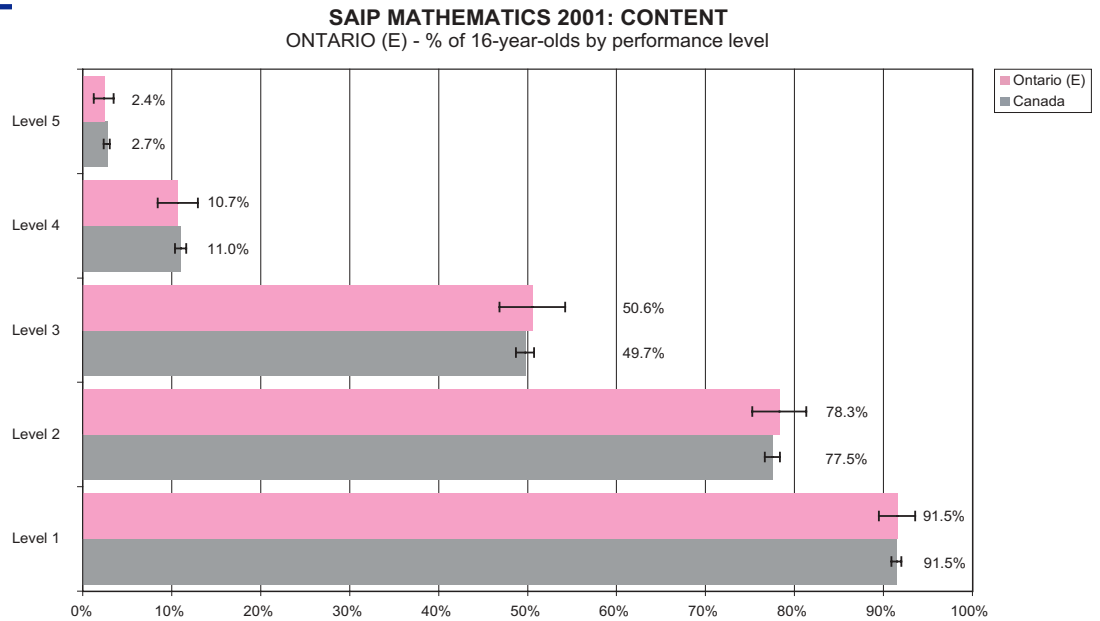


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Problem Solving

Ontario students from both age groups who responded in English performed as well as Canadian students as a whole at all levels of achievement.

In the 2001 assessment, more Ontario English-language 13-year-old students performed at levels 1, 2, 3, and 4 than in 1997. More 16-year-old Ontario English-language students achieved at levels 2, 3, and 4 than in the 1997 assessment.

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SAIP MATHEMATICS 2001: PROBLEM SOLVING
ONTARIO (E) - % of 13-year-olds by performance level

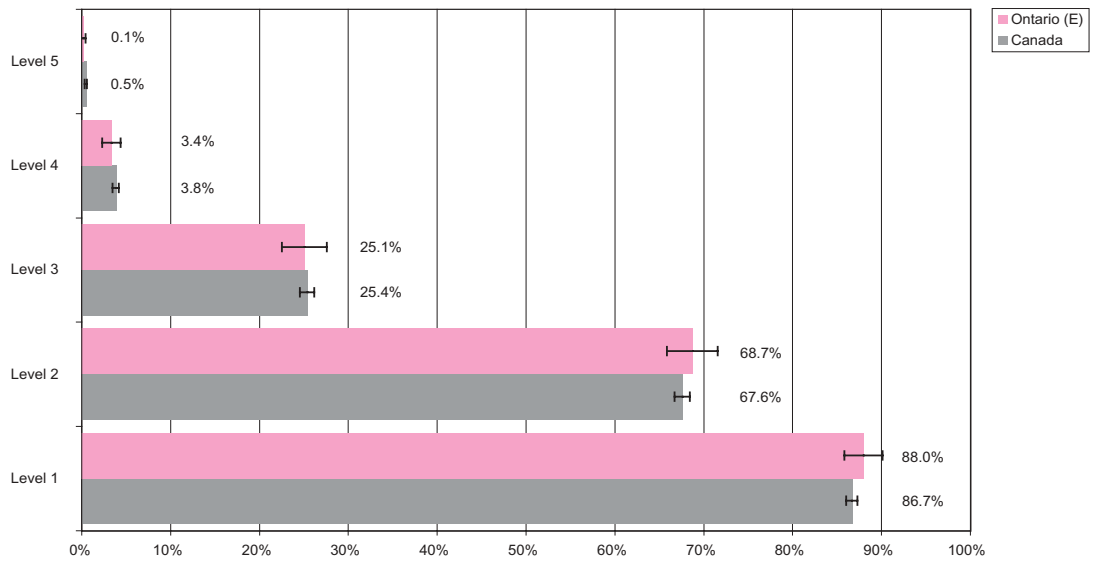
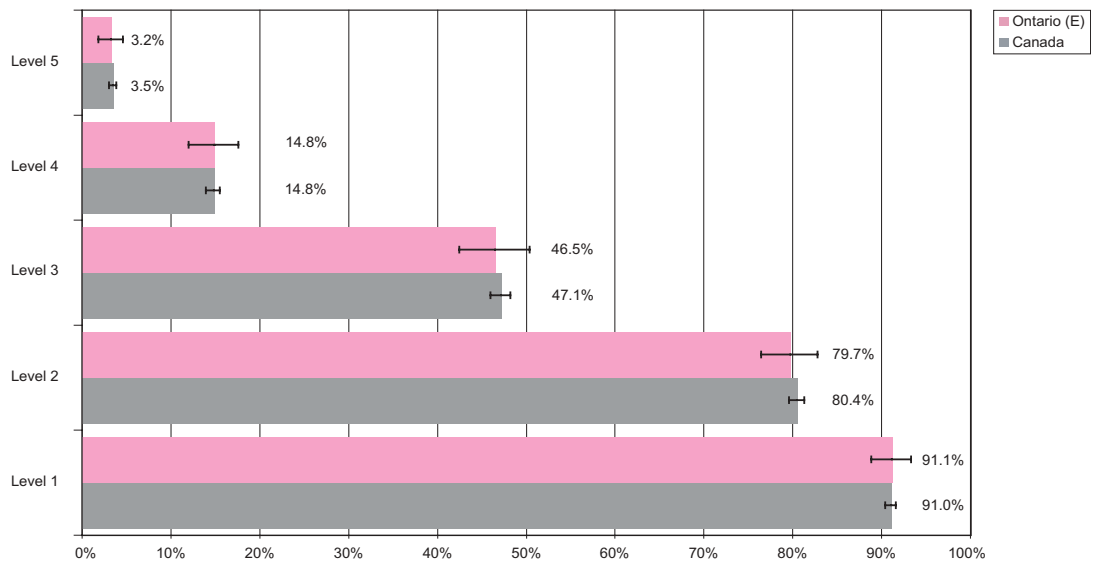


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SAIP MATHEMATICS 2001: PROBLEM SOLVING
ONTARIO (E) - % of 16-year-olds by performance level



Results for Ontario (French)

Mathematics Content

Ontario 13-year-old students who responded in French performed as well as Canadian students as a whole, except at level 2. Ontario 16-year-old students who responded in French performed as well as Canadian students as a whole at levels 1 and 2, but there were significant differences at the other levels of achievement.

In the 2001 assessment, fewer Ontario French-language 13-year-old students performed at level 1; otherwise, there were no significant changes between the 1997 and 2001 assessments. Similarly for 16-year-old Ontario French-language students, fewer performed at levels 1 and 3 than in the 1997 assessment.

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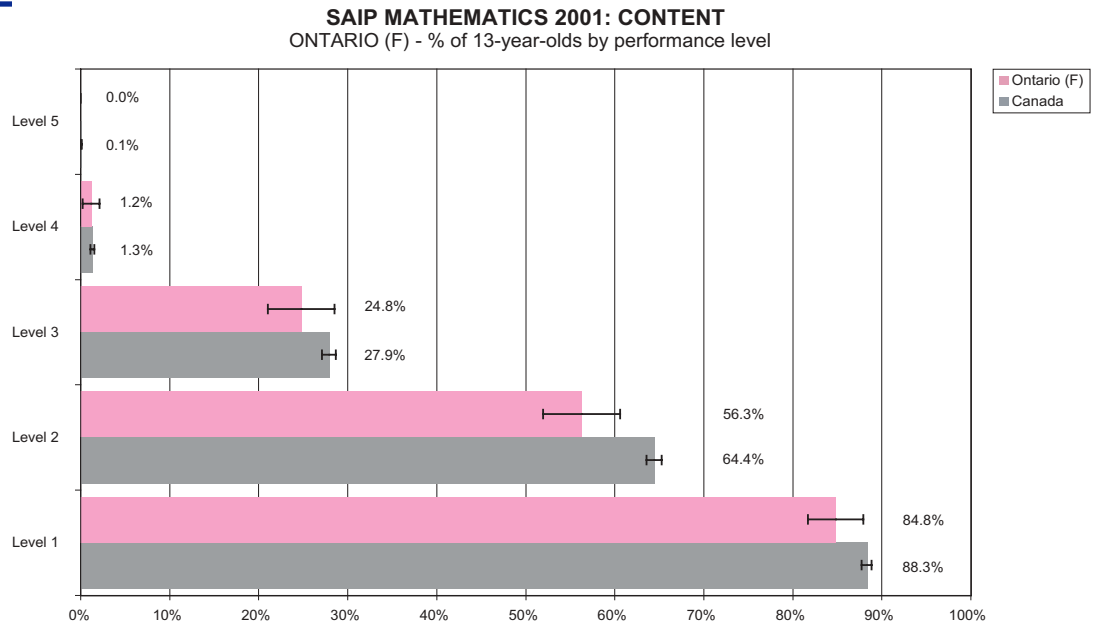
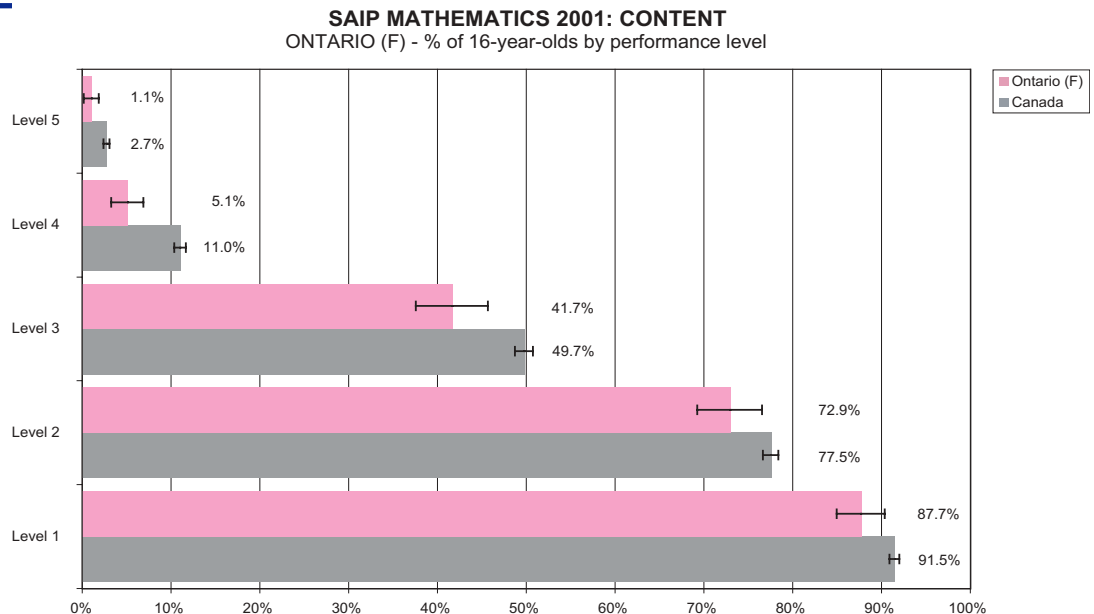


CHART ON(F)2



Problem Solving

Ontario 13-year-old students who responded in French performed as well as Canadian students as a whole. For Ontario 16-year-old students who responded in French, there were significant differences at all levels of achievement except level 5.

In the 2001 assessment, more Ontario French-language 13-year-old students performed at levels 1, 2, and 3 than in the 1997 assessment. For 16-year-old Ontario French-language students, more performed at levels 3 and 5, with fewer at level 1 than in the 1997 assessment.

CHART ON(F)3

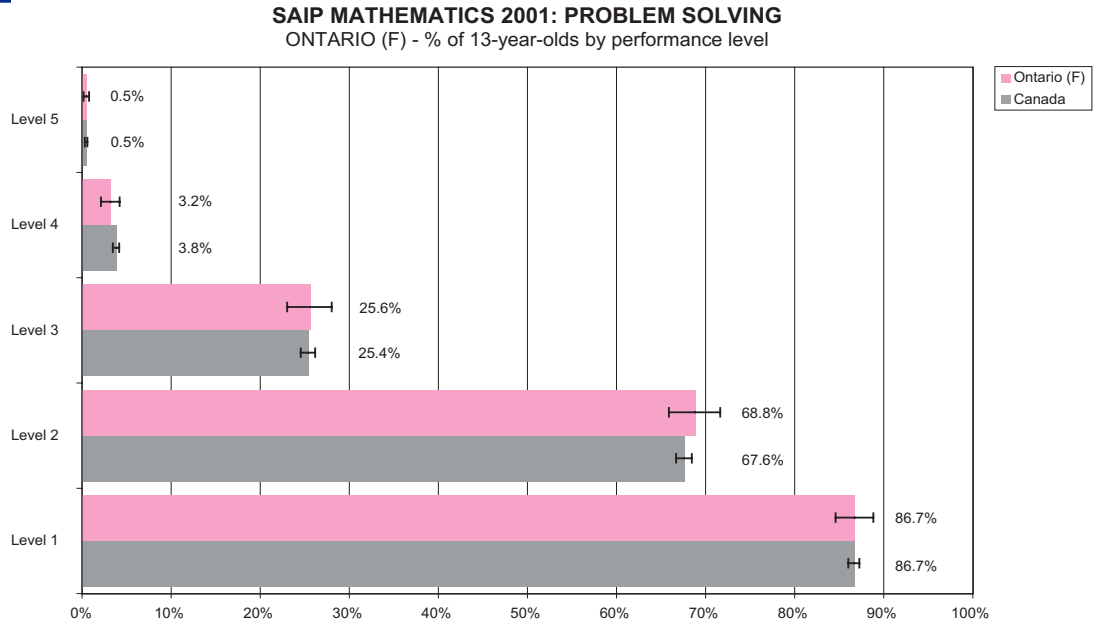
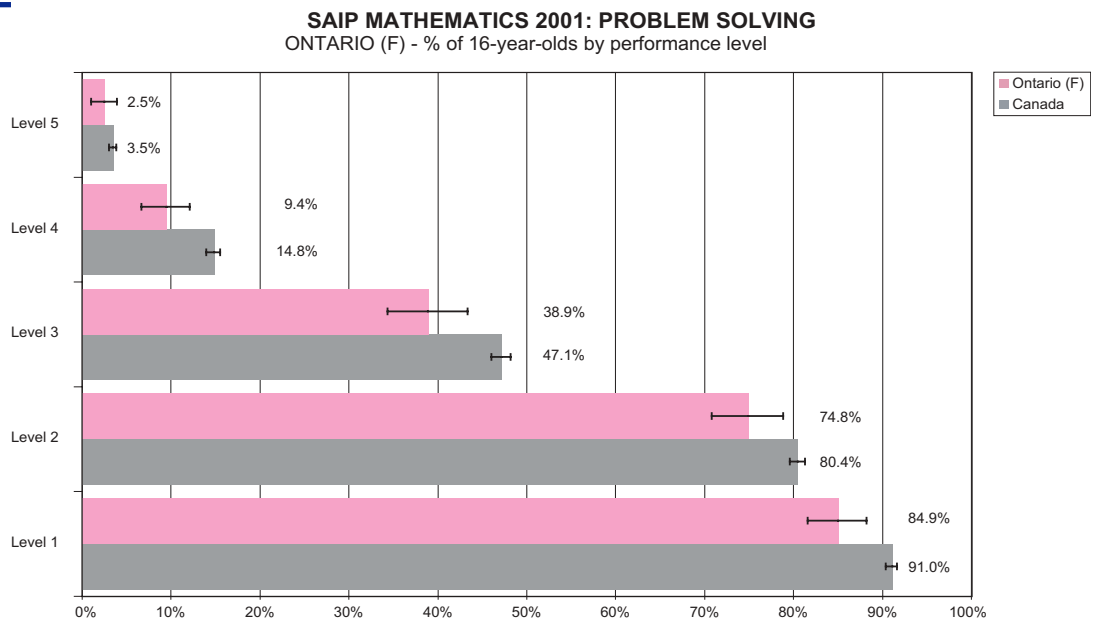


CHART ON(F)4



Context Statement

Social Context

For some years now, Quebec has been modernizing its education system in order to meet the requirements of today's society. The current education reform is the result of a democratic process. The Estates General on Education, initiated in 1995, were structured to involve people throughout Quebec in consultations on the problems in the education system, on the measures needed to remedy these problems, and on medium- and long-term adjustments required to ensure that the system adapts to the socioeconomic and sociocultural changes that are emerging at the dawn of the 21st century.

Quebec's population of over 7 million is concentrated in the south of the province, mostly in its largest city, Montreal, and its capital, Quebec. The official language of Quebec is French. Francophones account for 80% of Quebec's total population. Anglophones make up about 9% and have access to a system of English educational institutions from preschool to university. There are 11 Native peoples in Quebec: 8 under federal jurisdiction and 3 under the jurisdiction of the Quebec Ministry of Education. Funding for education is provided by both levels of government.

In addition, an increase in immigration, especially in the Greater Montreal area, has resulted in a massive inflow of students whose mother tongue is neither French nor English. These students attend French schools. Fully aware of the needs of this new client group, schools have implemented special measures, including initiation and francization programs and welcoming classes.

Organization of the School System

Quebec has four levels of education: elementary, secondary, college, and university. Children are admitted to elementary school at 6 years of age, and school attendance is compulsory until the age of 16. The official language of instruction at the elementary and secondary levels is French. Education in English is available mainly to students whose father or mother pursued elementary studies in English in Canada. Approximately 10% of Quebec students are educated in English.

Elementary school is usually preceded by one year of full-time kindergarten for five-year-olds. Almost all five-year-olds attend kindergarten, even though it is not compulsory. Some children from underprivileged backgrounds may have access to half-day kindergarten from the age of 4.

Elementary school lasts six years. The school year is made up of 180 days of classroom teaching. A normal school week consists of five full days and 23.5 hours of teaching. Students who experience learning difficulties or who have behavioural problems or minor disabilities are integrated into regular classrooms. Those with more significant problems attend special classes with fewer students.

Secondary school lasts five years and is divided into two levels. The school week is made up of five days and must include a minimum of 25 hours of educational activities. The first level or "cycle" (years 1 to 3) focuses on basic education. In the second cycle (years 4 and 5), students continue their general education, but also take optional courses to explore other avenues of learning before going on to college. In year 4, students can also undertake a two- or three-year vocational course of studies to prepare for a trade. Requirements for the secondary and vocational school diplomas are set in the basic school regulation.

At age 13, most students are in the second year of secondary school. At age 16, most are completing the fifth year of secondary school; some are starting their college studies.

In 2000–01, a total of 1,015,356 students were registered in Quebec's 2,892 public and private elementary and secondary schools, run by 72 schools boards, and 338 private schools.

Mathematics Teaching

In Quebec, mathematics is a compulsory subject from the beginning of elementary school to the fourth year of secondary school inclusive. In the second cycle of secondary school (starting in year 4), students can choose to enrol in one of three mathematics streams: basic, intermediate, or advanced, the latter being a prerequisite for college-level scientific courses. Mathematics has been a prerequisite for college admission since September 1996.

The Ministry of Education determines curriculum content in close collaboration with groups of experts in the various subjects, curriculum developers, teachers, and school board consultants. The mathematics curriculum is designed to provide all students with both knowledge and know-how, including mastery of content, application, and problem solving, while promoting the development of cross-curricular skills, such as linking concepts, communicating, managing a problem, and reasoning.

MATHEMATICS – SECONDARY

<i>First Cycle</i>	<i>Recommended Time</i>
Mathematics 116	150 hours/year
Mathematics 216	150 hours/year
Mathematics 314	100 hours/year

MATHEMATICS – SECONDARY

<i>Second Cycle, Basic Stream</i>	<i>Recommended Time</i>
Mathematics 416	150 hours/year
Mathematics 514	100 hours/year

MATHEMATICS – SECONDARY

<i>Second Cycle, Intermediate Stream</i>	<i>Recommended Time</i>
Mathematics 426	150 hours/year
Mathematics 526	150 hours/year

MATHEMATICS – SECONDARY

<i>Second Cycle, Advanced Stream</i>	<i>Recommended Time</i>
Mathematics 436	150 hours/year
Mathematics 536	150 hours/year

Mathematics Testing

Schools assess students' progress in mathematics regularly throughout their secondary studies, using ministry- or locally developed tests. Ministry tests are mixed (i.e., they include multiple-choice, short-answer, and essay-type questions). Students may use a scientific or graphing calculator during tests.

As for other subjects, the pass mark is 60%. School-based assessments make up one-half of the final mark, and the student's mark on the uniform examination set by the Ministry of Education, the other half.

Results for Quebec (English)

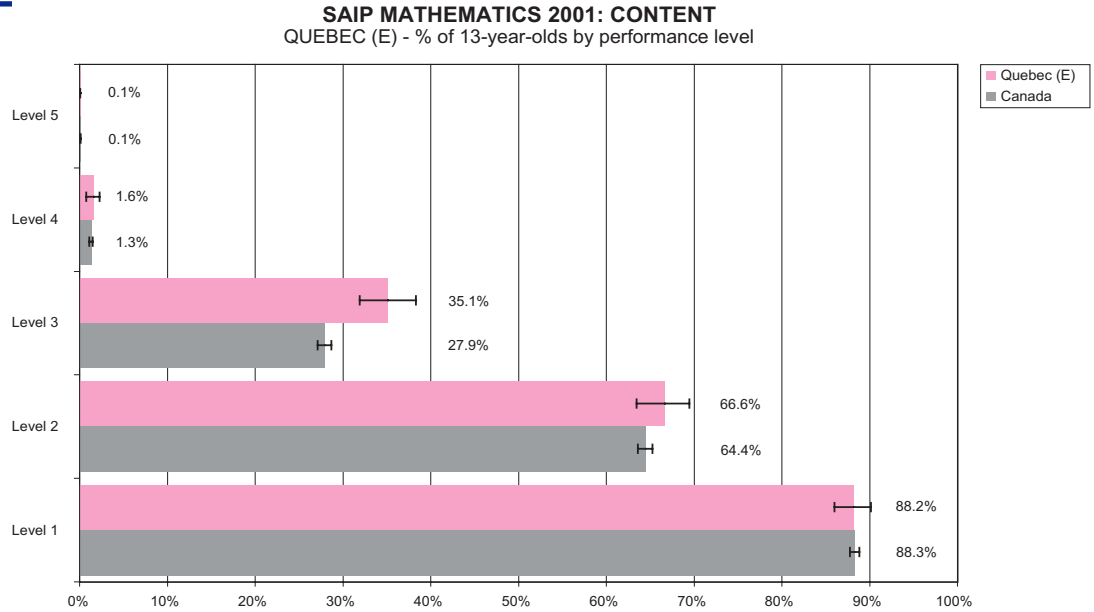
NOTE: Only 13-year-old Quebec students took part in the 2001 assessment.

Mathematics Content

Quebec 13-year-old students who responded to the assessment in English performed better than Canada as a whole at level 3. At other levels they performed as well as the Canadian average.

In the 2001 assessment, fewer of these students reached level 3 than in 1997. Otherwise, there were no significant changes.

CHART QC(E)1

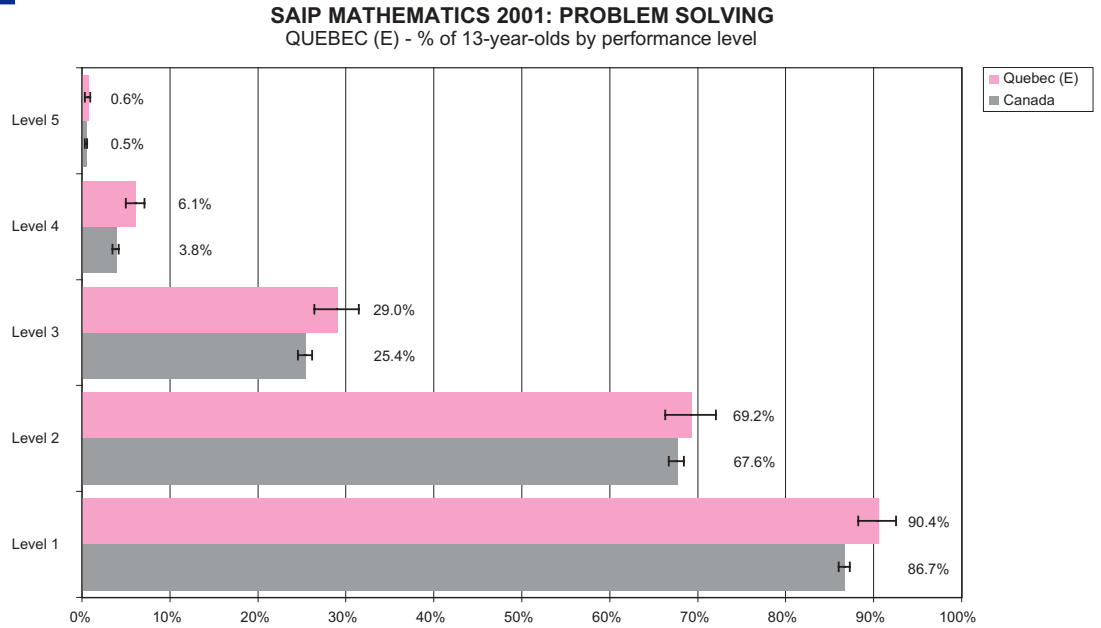


Problem Solving

Quebec 13-year-old students who responded to the assessment in English performed as well as or better than Canada as a whole. At levels 1 and 4 they performed better than the Canadian average.

Since the 1997 assessment, the performance of Quebec English-language students has improved significantly at levels 1, 2, 3, and 4.

CHART QC(E)2



Results for Quebec (French)

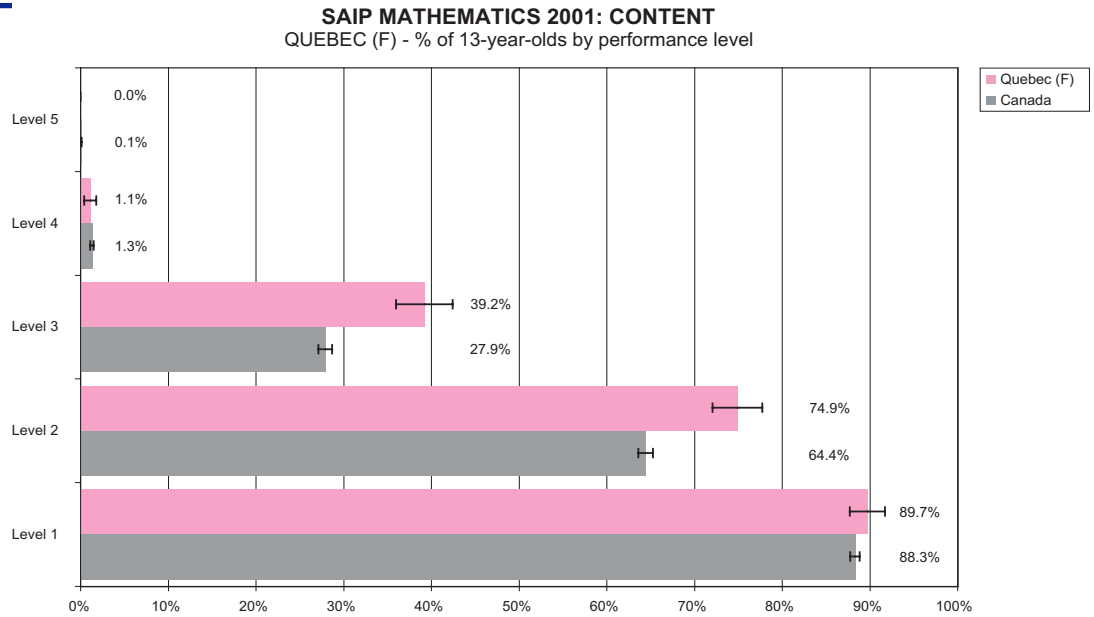
NOTE: Only 13-year-old Quebec students took part in the 2001 assessment.

Mathematics Content

Quebec 13-year-old students who responded to the assessment in French performed better than Canada as a whole at levels 2 and 3. At other levels they performed as well as the Canadian average.

In the 2001 assessment, slightly fewer of these students achieved at level 3 than in 1997, with no significant changes at the other levels.

CHART QC(F)1



Problem Solving

Quebec 13-year-old students who responded to the assessment in French performed as well as Canada as a whole at all levels.

The performance of these Quebec French-language students has not changed significantly since 1997.

CHART QC(F)2

