Education
Quality and
Accountability
Office

School Achievement Indicators Program (SAIP)

1999 Science Assessment

(13- and 16-year-old students)

Ontario Report

May 2000

The Education Quality and Accountability Office (EQAO) is an independent, arm's length agency established in June 1996 by the Government of Ontario to ensure greater accountability and to contribute to the enhancement of the quality of publicly funded education in Ontario.

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1999 SAIP Science Assessment: Ontario Report

(13- and 16-year-old students)

Background

- The School Achievement Indicators Program (SAIP) was initiated by the Council of Ministers of Education, Canada (CMEC) to provide a mechanism for reporting on levels of achievement attained by 13- and 16-year-old students across Canada.
- Tests are administered in April/May of each year according to the following schedule:

MATHEMATICS	READING AND WRITING	SCIENCE
1993	1994	1996
1997	1998	1999
2001		

- The SAIP results are reported for Canada as a whole and for individual provinces/territories. Due to the student sampling framework, it is not possible to provide reports at the school or school board levels. A paper copy of the CMEC public report can be requested from the EQAO's distribution centre by calling 1-888-327-7377. An electronic copy of the same report can be downloaded from the CMEC web site at www.cmec.ca/indexe.stm.
- The development team responsible for the 1999 SAIP Science Assessment included representatives from Saskatchewan, Ontario, Quebec, Newfoundland and Nova Scotia (French). The main task of the team was to improve the assessment materials that were used in 1996, taking into account data and comments from the earlier test administration. Only a limited amount of change in the test instruments was possible since an important principle of SAIP is to compare student achievement results over time. For the written component, some questions had minor changes, mostly to clarify language. For the practical tasks component, two tasks were modified to prompt students to demonstrate higher performance levels, one task was replaced because it had been released in the public report and some questions had minor changes, mostly to clarify language.
- The SAIP Science Assessment, administered in the spring of 1999, took two and a half hours to administer and consisted of two main parts. One randomly selected sample of students completed a written component, responding to a series of short-answer and multiple-choice questions; another student sample completed a practical tasks component in which they were asked to perform a task and then to answer questions related to the task and the data they had collected. Each student who participated in the assessment also completed an attitude and background survey. In addition, there was a teacher questionnaire to be filled out by the selected students' science teacher and a school questionnaire that was completed by the principal.

- SAIP uses five performance levels and reports the percentage of students attaining knowledge and skills at each level. The five levels are applied to both 13- and 16-year-old students. A student's performance in science is measured according to the five achievement levels. The following examples, descriptions of levels 1 and 5, are taken from the CMEC's public report.

  ### Written Assessment

  - At Level 1, a student can:
    - describe physical properties of objects
    - distinguish living things from non-living things and their respective environments
    - recognize that energy can appear in different forms
    - recognize that objects in the universe undergo change
    - demonstrate care and accuracy during scientific investigations
    - identify various technologies important to society
  - At Level 5, a student can:
    - relate properties of substances to their molecular structure
    - know that various factors can mutate DNA and that some mutations may be passed on to offspring
    - analyze uniform motion in two dimensions
    - evaluate evidence for the theory of plate tectonics
    - explain conditions used to evaluate scientific theories
    - show the influence of world views on science and technology

  ### Practical Tasks Assessment

  - At Level 1, a student can:
    - ask and identify relevant questions
    - carry out identified procedures
    - make relevant observations
  - At Level 5, a student can:
    - design appropriate experiments
    - evaluate the reliability and accuracy of data and explain its limitations
    - evaluate the effects of sources of error
    - identify factors that influence the acceptance or rejection of a body of evidence or a theory

- The 1999 Science Assessment was administered to a random sample of students drawn from all Canadian jurisdictions. Approximately 31 460 students from across the country took part in the assessment, including more than 4 800 from Ontario. The assessment was conducted both in English and in French, and steps were taken to ensure the results of the two language groups were comparable.
- National expectations were established for the 1999 SAIP Science Assessment, so that actual achievement results could be compared with expected results. To set these performance expectations, CMEC held three regional meetings with educators and non-educators in Western, Central and Atlantic Canada to decide what percentage of 13- and 16-year-old students should achieve at or above each of the performance levels. The resulting

information helped CMEC interpret how well Canadian students performed on the assessment. The results of the expectation-setting sessions are shown in the Appendix.

- Refer to the Appendix for further information about SAIP and the 1999 Science Assessment.
- This report provides selected results for Canada and for Ontario. The Ontario data should be interpreted in light of the following provincial contextual information.[1]

[1]The statistics in this report were taken from the CMEC's 1999 SAIP Science Assessment draft report (January 2000).

Social Context

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 and 12 French-language boards as well as 37 School Authorities, which are responsible for schools in small and remote communities. 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 primary and secondary immigration, Ontario receives approximately 68% of Canada's newcomers. To overcome language and cultural barriers that could affect student achievement, boards and schools, especially in urban areas, have to provide instruction in English- and French-as-a-second-language, as well as community outreach services.

Organization of 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 1998–1999, Ontario had 1 394 701 students enrolled in 3 946 elementary schools and 697 311 students enrolled in 805 secondary schools. There were approximately 117 452 full-time teachers. Seventy per cent of the boards offer French-language education. 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 post-secondary education and the workplace. Students entering Grade 9 in the fall of 1999 will graduate at the end of Grade 12.

Science Teaching

Ontario has developed new, expectations-based curricula in every subject from Grade 1 through Grade 12. The science expectations are included in the science and technology curriculum document for Grades 1–8 and the science curriculum documents for Grades 9–12. Earth and space science has not been a major part of Ontario science programs, other than a rarely offered geology program at the senior level.

Science from Grades 1–8 is presented in an integrated science and technology, activity-based curriculum that encourages the exploration of a variety of areas in science and technology.

The new science program in Grades 9–10 provides a broad overview of science, including the subdisciplines of biology, chemistry, earth and space science, and physics. Grade 9 is the first year in which science courses are offered either as an applied or academic course. Students are required to take science to the end of Grade 10 (i.e., two credits are required in science for graduation).

In Grades 11 and 12, science programs are delivered in the more specialized areas of chemistry, physics, biology, and earth and space science, and offered as university, college, university/college or workplace courses.

Most 13-year-old students in this assessment are enrolled in either Grade 9 science or Grade 8 science and technology, both of which are mandatory core subjects. The science experiences of 16-year-old students are extremely varied – from having no science since Grade 10 to having completed one or two specialized programs at the senior level.

Science Testing

Classroom teachers are responsible for student 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 1996 to ensure greater accountability and to contribute to the enhancement of education in Ontario. In 1997 and 1998, EQAO conducted a test of all Grade 3 students in reading, writing and mathematics. In 1997, it conducted an assessment in mathematics for a random sample of Grade 6 students; in 1998, a similar assessment was administered to a random sample of Grade 9 students. In 1999, EQAO conducted a test of all Grade 3 and Grade 6 students in reading, writing and mathematics based on the new curriculum expectations. Province-wide testing of all Grade 3 and Grade 6 students in these subjects will take place every year. The Ministry of Education has also announced that, starting in the 2000–2001 school year, all Grade 9 students will be tested in mathematics and all Grade 10 students will take a test of reading and writing skills. Beginning in 2001–2002, all Grade 10 students will be required to successfully complete the Grade 10 Test of Reading and Writing Skills in order to obtain their high school diploma.

With respect to the science 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 the Organisation for Economic Co-operation and Development (OECD). In addition, over the past decade, Ontario has conducted provincial reviews in senior-division chemistry and physics programs.

Results for Canada

Achievement

- In the 1999 written component, nearly 75% of 13-year-old students reached Level 2 and above, and over 76% of 16-year-old students reached Level 3 and above.
- In 1999, a significantly higher percentage of both 13- and 16-year-old students reached levels 3, 4 and 5 in the written assessment than in 1996.
- In the written assessment, there were no significant differences in the distributions among the achievement levels of females and males at most levels. A slightly higher percentage of 16-year-old males reached Level 4 than females.
- In the written component, a slightly higher proportion of 13-year-old English-language students attained each of the levels, except for Level 3, than their French-speaking counterparts. Among the 16-year-olds, a significantly higher proportion of French-language students reached levels 1, 2 and 3; there were no significant differences at levels 4 and 5.
- In the practical tasks assessment, 90% of 13-year-old students reached Level 2 and nearly 76% of 16-year-old students reached Level 3.
- In 1999, a significantly higher percentage of both 13- and 16-year-old students reached all levels in the practical tasks assessment than in 1996.
- Generally, in the practical tasks assessment, there were no significant differences between males and females aged 16; however, there were significantly more 13-year-old females reaching levels 4 and 5 than males.
- In the practical tasks assessment, for the 13-year-old students, there was a significant difference in the proportion of English- and French-language students reaching levels 3, 4 and 5.
- In general, both age groups performed as expected in the practical tasks assessment but fell a bit short in the higher levels of the written assessment. Thirteen-year-old students met expectations at all levels except Level 4 in the written assessment. Sixteen-year-old students, for both the written and the practical tasks assessments, met the expectations of both educators and non-educators, except for Level 5 in the written assessment.

Other findings

- At the national level, for all students, a higher proportion of students who always or nearly always speak the language of the test at home reached Level 3 or higher.
- Forty per cent of 13-year-olds and 57% of 16-year-olds agreed or strongly agreed that you need natural ability to do well in science, but 96% of 13-year-olds and 97% of 16-year-olds agreed or strongly agreed that hard work is a factor in doing well in science.
- The median of the jurisdictional average science class sizes was 24 students, with 80% of teachers recording an average class size of 29 or fewer students. Reported class sizes varied from a low of 10 to as many as 40 students.

- Forty-three per cent of teachers reported that they met with their colleagues less than once a month for program planning. This may reflect the fact that in many cases they are the only science teacher in the school.
- Nearly 90% of teachers said that science is better thought of as a process instead of being primarily a body of knowledge and concepts, and 76% felt that high school students should be streamed by ability.
- Teachers used a wide variety of teaching strategies, but almost 80% of them rarely or never took their students outdoors or on field trips.
- Only 63% of teachers gave quite a lot or a great deal of weight to projects and laboratory exercises for their assessment of students.
- About half of the reporting teachers held a science degree, and nearly 30% did not have at minimum the equivalent of one year of teacher training.

Note: Refer to the Appendix for further information about the 1999 Science Assessment results and national expectations.

Results for Ontario

Achievement

- In the written assessment, Ontario (English) 13- and 16-year-old students performed as well as Canadian students overall.
- In 1999, the Ontario (English) 13-year-old students performed significantly better at Level 2 and above for the written assessment than they did in 1996. The 1999 performance of the 16-year-old students was significantly better at levels 3 and 4 than in 1996.
- Both Ontario (English) age groups met or exceeded Canadian expectations for the written assessment at levels 1, 2 and 3.
- In the practical tasks assessment, Ontario (English) 13- and 16-year-old students performed as well as Canadian students overall.
- The 1999 performance of both the 13-year-old and the 16-year-old English-language students in the practical tasks assessment was significantly better at levels 3, 4 and 5 than in 1996.
- For the practical tasks assessment, Ontario (English) 13-year-old students met or exceeded Canadian expectations at levels 2 and 5. Ontario (English) 16-year-old students met or exceeded all Canadian expectations.
- Ontario (French) results in the written assessment for both age groups were lower than for Canada overall.
- The 1999 performance of both the 13-year-old and the 16-year-old French-language students in the written assessment was significantly better at Level 3 than in 1996.
- Both Ontario (French) age groups did not meet Canadian expectations for the written assessment at any level.
- In the practical tasks assessment, Ontario (French) 13-year-old students performed as well as Canadian students overall. However, Ontario (French) 16-year-old students did not perform as well as the Canadian 16-year-olds at levels 3, 4 and 5.
- In 1999, the Ontario (French) 13-year-old students performed significantly better at all levels of the practical tasks assessment than they did in 1996. The 1999 performance of the 16-year-old students was significantly better at levels 3, 4 and 5 than in 1996.
- For the practical tasks assessment, Ontario (French) 13-year-old students met or exceeded Canadian expectations at levels 2 and 5.

Other findings for Ontario

- The vast majority of students (95% to 99%) of both sexes, languages and ages expected to pursue their studies after high school.
- Thirty-four per cent of 13-year-olds and 48% of 16-year-olds agreed or strongly agreed that you need natural ability to do well in science, but 78% of 13-year-olds and 79% of 16-year-olds agreed or strongly agreed that hard work is a factor in doing well in science.

- The average science class size in Ontario English-language middle schools was 26 students, with classes ranging from as small as one to as large as 44 students. The average science class size in Ontario English-language secondary schools was 26 students, with classes ranging from 3 to 36 students.
- In Ontario French-language middle schools, the average science class size was 25 students, with classes ranging from one to 36 students. In Ontario French-language secondary schools, the average science class size was 20 students, with classes ranging from 3 to 36 students.
- In Ontario, 90% of science teachers reported meeting with other teachers for program planning at least once a month.
- Almost 90% of Ontario teachers felt that science should be taught as a process rather than as a body of knowledge and concepts, and nearly 92% felt that high school students should be streamed by ability.
- Teachers reported using a wide variety of teaching strategies with over 55% reporting that their students do laboratory experiments at least a few times a week; nevertheless, over 75% of teachers reported that they rarely or never took their students on field trips or outdoors.
- Approximately 60% of the teachers who responded to the questionnaire reported holding a science degree, and over 82% had at least the equivalent of one year of teacher training.

Comparisons With Other Jurisdictions

The following charts indicate how the student achievement results of the provinces and territories compare with Canada overall. The charts show the proportions of 13-year-old students attaining achievement Level 2 and above, and the proportion of 16-year-olds attaining achievement Level 3 and above.

Provinces/Territories Compared with Canada Overall

(Percentage of 13-year-olds, Level 2 and Above; Percentage of 16-year-olds, Level 3 and Above)

Written Component		
HIGHER THAN CANADA	SAME AS CANADA	LOWER THAN CANADA
AGE 13		
Alberta 82.5% (±2.4)	British Columbia 76.1% (±2.9)	Manitoba (F) 61.2% (±3.7)
	Canada 73.3% (±0.8)	New Brunswick (F) 60.5% (±3.1)
	Manitoba (E) 72.8% (±3.0)	Newfoundland 68.0% (±2.6)
	New Brunswick (E) 69.4% (±3.2)	Nunavut 17.5% (±2.5)
	Nova Scotia (E) 69.5% (±3.3)	Northwest Territories 52.2% (±2.3)
	Ontario (E) 72.1% (±3.1)	Nova Scotia (F) 61.8%(±3.5)
	Prince Edward Island 74.3% (±2.9)	**Ontario (F) 57.2% (±3.3)**
	Quebec (E) 69.6% (±3.0)	
	Quebec (F) 72.8% (±2.8)	
	Saskatchewan 75.5% (±2.9)	
	Yukon 71.3% (±2.6)	
AGE 16		
Alberta 85.8% (±2.3)	British Columbia 75.8% (±3.2)	New Brunswick (F) 69.4% (±3.1)
Manitoba (E) 79.8% (±2.6)	Canada 76.1% (±0.8)	Northwest Territories 67.8% (±3.7)
Prince Edward Island 81.3% (±3.1)	Manitoba (F) 76.2% (±3.3)	Nunavut 23.8% (±6.2)
Quebec (F) 80.5% (±2.4)	New Brunswick (E) 72.6% (±3.3)	**Ontario (F) 60.1% (±4.0)**
	Newfoundland 72.7% (±2.8)	
	Nova Scotia (E) 74.6% (±2.4)	
	Nova Scotia (F) 73.8% (±7.6)	
	Ontario (E) 72.2% (±3.4)	
	Quebec (E) 76.7% (±2.7)	
	Saskatchewan 77.4% (±2.9)	
	Yukon 74.0% (±3.4)	

Note:

- The above groupings take sampling error and confidence intervals into account. (Refer to the Appendix for a description of sampling error, statistical significance and confidence intervals.) For each population, the percentage of students achieving Level 2 and above (13-year-olds) and Level 3 and above (16-year-olds) is shown together with the sampling error (in parentheses) for each statistic.
- Levels 2 and 3 are highlighted because, in designing SAIP, the program developers established the principle that most 13-year-olds would meet the criteria for Level 2 and that most 16-year-olds would meet the criteria for Level 3.
- "(E)" and "(F)" refer to English and French, respectively.
- The data for the written component and the practical tasks component for 13- and 16-year-olds, by level and by population, are presented in the Appendix.

Provinces/Territories Compared with Canada Overall

(Percentage of 13-year-olds, Level 2 and Above; Percentage of 16-year-olds, Level 3 and Above)

Practical Tasks Component		
HIGHER THAN CANADA	SAME AS CANADA	LOWER THAN CANADA
AGE 13		
	Canada 90.0% (±1.0)	
	Ontario (E) 86.8% (±2.5)	
	Ontario (F) 87.8% (±2.9)	
	Saskatchewan 88.6% ±(2.2)	
	Others 92.1% (±1.3)	
AGE 16		
	Canada 75.7% (±1.4)	**Ontario (F) 64.7% (±4.5)**
	Ontario (E) 72.2% (±3.6)	
	Quebec 78.7% (±2.8)	
	Saskatchewan 74.6% (±3.1)	
	Others 78.1% (±2.4)	

Note:

- The above groupings take sampling error and confidence intervals into account. (Refer to the Appendix for a description of sampling error, statistical significance and confidence intervals.) For each population, the percentage of students achieving Level 2 and above (13-year-olds) and Level 3 and above (16-year-olds) is shown together with the sampling error (in parentheses) for each statistic. Only those jurisdictions who sampled so as to have provincial results are represented in this table.
- Levels 2 and 3 are highlighted because, in designing SAIP, the program developers established the principle that most 13-year-olds would meet the criteria for Level 2 and that most 16-year-olds would meet the criteria for Level 3.
- "Others" refers to the results from those jurisdictions who participated only in the Canadian sample.
- "(E)" and "(F)" refer to English and French, respectively.
- The data for the written component and the practical tasks component for 13- and 16-year-olds, by level and by population, are presented in the Appendix.

Comparisons With Other Jurisdictions

The following charts indicate how the student achievement results for the provinces and territories (and Canada overall) compare with Ontario (English).[1] The groupings are derived from the proportions of 13- and 16-year-old students attaining achievement Level 2 and above and Level 3 and above, respectively, as shown in the Appendix.

Provinces/Territories Compared with Ontario (English)

(Percentage of 13-year-olds, Level 2 and Above; Percentage of 16-year-olds, Level 3 and Above)

Written Component

HIGHER THAN ONTARIO (ENGLISH)	SAME AS ONTARIO (ENGLISH)	LOWER THAN ONTARIO (ENGLISH)
AGE 13		
Alberta 82.5% (±2.4)	British Columbia 76.1% (±2.9)	Manitoba (F) 61.2% (±3.7)
	Canada 73.3% (±0.8)	New Brunswick (F) 60.5% (±3.1)
	Manitoba (E) 72.8% (±3.0)	Northwest Territories 52.2% (±2.3)
	New Brunswick (E) 69.4% (±3.2)	Nova Scotia (F) 61.8%(±3.5)
	Newfoundland 68.0% (±2.6)	Nunavut 17.5% (±2.5)
	Nova Scotia (E) 69.5% (±3.3)	**Ontario (F) 57.2% (±3.3)**
	Ontario (E) 72.1% (±3.1)	
	Prince Edward Island 74.3% (±2.9)	
	Quebec (E) 69.6% (±3.0)	
	Quebec (F) 72.8% (±2.8)	
	Saskatchewan 75.5% (±2.9)	
	Yukon 71.3% (±2.6)	
AGE 16		
Alberta 85.8% (±2.3)	British Columbia 75.8% (±3.2)	Nunavut 23.8% (±6.2)
Manitoba (E) 79.8% (±2.6)	Canada 76.1% (±0.8)	**Ontario (F) 60.1% (±4.0)**
Prince Edward Island 81.3% (±3.1)	Manitoba (F) 76.2% (±3.3)	
Quebec (F) 80.5% (±2.4)	New Brunswick (E) 72.6% (±3.3)	
	New Brunswick (F) 69.4% (±3.1)	
	Newfoundland 72.7% (±2.8)	
	Northwest Territories 67.8% (±3.7)	
	Nova Scotia (E) 74.6% (±2.4)	
	Nova Scotia (F) 73.8% (±7.6)	
	Ontario (E) 72.2% (±3.4)	
	Quebec (E) 76.7% (±2.7)	
	Saskatchewan 77.4% (±2.9)	
	Yukon 74.0% (±3.4)	

[1] In the absence of data for Ontario overall, we have used the results for Ontario (English) for comparison purposes. Because of the relative sizes of the English and French populations, statistics for Ontario overall would have been virtually identical to the statistics for Ontario (English).

Note:

- The above groupings take sampling error and confidence intervals into account.
- Levels 2 and 3 are highlighted because, in designing SAIP, the program developers established the principle that most 13-year-olds would meet the criteria for Level 2 and most 16-year-olds would meet the criteria for Level 3.
- "(E)" and "(F)" refer to English and French, respectively.
- The data for the written component and the practical tasks component for 13- and 16-year-olds, by level and by population, are presented in the Appendix.

Provinces/Territories Compared with Ontario (English)

(Percentage of 13-year-olds, Level 2 and Above; Percentage of 16-year-olds, Level 3 and Above)

Practical Tasks Component		
HIGHER THAN ONTARIO (ENGLISH)	SAME AS ONTARIO (ENGLISH)	LOWER THAN ONTARIO (ENGLISH)
AGE 13		
Others 92.1% (±1.3)	Canada 90.0% (±1.0)	
	Ontario (E) 86.8% (±2.5)	
	Ontario (F) 87.8% (±2.9)	
	Saskatchewan 88.6% ±(2.2)	
AGE 16		
Quebec 78.7% (±2.8)	Canada 75.7% (±1.4)	
	Ontario (E) 72.2% (±3.6)	
	Ontario (F) 64.7% (±4.5)	
	Saskatchewan 74.6% (±3.1)	
	Others 78.1% (±2.4)	

Note:

- The above groupings take sampling error and confidence intervals into account. (Refer to the Appendix for a description of sampling error, statistical significance and confidence intervals.) For each population, the percentage of students achieving Level 2 and above (13-year-olds) and Level 3 and above (16-year-olds) is shown together with the sampling error (in parentheses) for each statistic. Only those jurisdictions who sampled so as to have provincial results are represented in this table.
- Levels 2 and 3 are highlighted because, in designing SAIP, the program developers established the principle that most 13-year-olds would meet the criteria for Level 2 and most 16-year-olds would meet the criteria for Level 3.
- "Others" refers to the data gathered from those jurisdictions who participated only in the Canadian sample.
- "(E)" and "(F)" refer to English and French, respectively.
- The data for the written component and the practical tasks component for 13- and 16-year-olds, by level and by population, are presented in the Appendix.

Appendix

Questions and Answers

Data Tables

Questions and Answers

Q. What is the School Achievement Indicators Program?

A. The provinces and territories, through the Council of Ministers of Education, Canada (CMEC), have established the School Achievement Indicators Program (SAIP) to assess the performance of 13- and 16-year-old students in mathematics, reading and writing, and science. The information collected through the SAIP assessments can be used by each province to assist in setting educational priorities and in planning program improvements.

Q. Why are 13- and 16-year-olds tested?

A. Age 13 is a transition point between elementary and secondary school programs, and age 16 is the last year of compulsory schooling in most provinces. By administering the same assessment to 13- and 16-year-olds, it is possible to study the differences in student performance between the two age groups.

Q. What is the SAIP testing schedule?

A. The assessments are conducted in the spring of the year according to the following schedule.

MATHEMATICS	READING AND WRITING	SCIENCE
1993	1994	1996
1997	1998	1999
2001		

Q. Why are the results reported by level rather than by per cent correct?

A. The SAIP assessments are designed to provide a description of the knowledge and skills demonstrated by 13- and 16-year-old students in each province and territory and for Canada as a whole. The use of five performance levels allows us to report the percentage of students attaining knowledge and skills at each level, and this provides useful information for evaluating the effectiveness of our mathematics, reading and writing, and science programs.

The use of performance levels as opposed to per cent correct was a decision made at the outset of the SAIP assessments, and in order to compare achievement over time, this approach must be used in the second round of testing.

The five levels of performance, applied to both 13- and 16-year-old students, describe students' abilities to understand and use scientific concepts and procedures. The complexity and level of difficulty of the performance criteria increases as the levels progress. Criteria for the five levels of performance were established separately for the written and practical tasks components of the assessment. A summary of the criteria for both components of the assessment are found in the CMEC public report.

Q. How are the SAIP results reported?

A. The results are reported for Canada as a whole and for individual provinces and territories. It was never the intent of SAIP to provide information at the school or school board level; the sampling framework was not designed for reporting at these levels.

Q. Who developed the 1999 SAIP Science Assessment?

A. The SAIP Science Assessment was developed by representatives of a consortium of volunteer provinces: Saskatchewan, Ontario, Quebec, Newfoundland and Labrador, and Nova Scotia (French) in consultation with all of the provinces and territories.

Q. Was the assessment fair to students across Canada?

A. School programs differ to some extent from one part of the country to another. Making comparisons of results from these various programs is a complex task. However, young Canadians in different provinces and territories are taught many similar skills in mathematics, reading and writing, and science.

Every effort was made to ensure the assessment was fair to students across the country. The SAIP science development team was comprised of members from Western, Central and Atlantic Canada. As the assessment framework and materials were developed, each ministry of education/agency reviewed the draft material for curriculum appropriateness; field tests and bias reviews were conducted in all jurisdictions; and the comments of classroom teachers, who were involved in field testing, helped to ensure the materials were as fair as possible for all Canadian students.

Q. What did the assessment look like?

A. Canadian 13- and 16-year-old students from all provinces and territories were tested on their ability in science.

The written component of the assessment was made up of a series of short answer and multiple choice questions.

The practical tasks component was comprised of tasks that the students were to perform before answering questions related to the tasks and the data they had collected.

Each student who participated in the assessment also completed a survey asking for demographic information and data about student attitudes towards science. There was also a similar teacher survey to be filled out by the selected students' science teachers and a school survey that was filled out by the principals of the sampled schools.

Each randomly selected student participating in the assessment completed either the written or the "hands-on" practical tasks component. The students had up to 2½ hours to complete either component of the assessment.

Q. Did all provinces and territories participate in all aspects of the 1999 Science Assessment?

A. All provinces and territories contributed randomly selected students to a national sample for both the written and practical tasks components of the assessment. Every province/territory included sufficient numbers of students to obtain provincial data (over-sampled) in the written component. Some provinces over-sampled for the practical tasks component.

Q. Who wrote the SAIP Science Assessment?

A. During the spring of 1999, a random sample of more than 16 100 13-year-olds and nearly 15 300 16-year-old Canadian students from all provinces and territories were tested. Age was as of August 31, 1998. About 23 000 students completed the assessments in English, and 8 400 completed them in French. In Ontario, the following numbers of students wrote the test.

	13-YEAR-OLDS		16-YEAR-OLDS	
	ENGLISH	FRENCH	ENGLISH	FRENCH
Written	779	760	650	529
Practical tasks	704	444	579	402

Total Number of Ontario Students: 4 847

Q. Were any students exempted from the test?

A. The principal could exempt a student if it was not possible for that student to respond to the assessment instruments, or if participation would be in any way detrimental to the student. If the principal exempted a student because the school designated the student's ability at Below Level 1, the student's performance was counted in the Below Level 1 category. Accommodations for students with special needs (e.g., blind students) were permitted, such as having someone read the questions or record the answers, and providing booklets in Braille. If accommodations were not available, these students were exempted.

Q. How were students assigned to particular performance levels?

A. Performance level attribution was different for each component of the assessment.

For the written component of the assessment, multiple choice and open-ended questions were grouped within the booklet in sections corresponding to specific levels of performance. Scoring for the multiple choice responses was accomplished electronically following manual data entry. The performance level of the student was assigned by the computer, which took into consideration both the multiple choice score and the student's performance on the open-ended questions.

For the practical tasks component of the assessment, experienced science teachers, specially trained for the task, compared student responses to examples chosen from actual student papers. A code was attributed to each question based on the scoring guide and the exemplars. The performance level of the student was determined using an algorithm based on the number of correct responses given by the student at each level.

Q. Is it possible to compare Ontario English and French results?

A. Steps were taken to support the comparability of the assessments in English and in French. The questions and tasks were developed by one team, which contributed to comparability in the two official languages. In addition, a stringent monitoring process was established during the marking to ensure the scoring standards were applied uniformly in both languages. However, one must always use caution when comparing the results of tests conducted in different languages, since there may be subtle language differences in the assessment materials.

Q. What is meant by "statistical significance" and "confidence intervals"?

A. Just like in a poll, the SAIP science results are estimates of how the province/territory or country would perform if all 13- and 16-year-old students completed the assessment. This means that every result has a published margin of error which we have taken into account when we say provinces'/territories' results are higher, lower or the same as the results for Canada or Ontario (English).

In the SAIP Science Assessment, the percentages calculated were based on samples of students, and therefore are only estimates of the actual achievement students would have demonstrated had they all taken the assessment. Because an estimate is rarely exact, it is common practice to provide a range of percentages within which the actual achievement results might fall. This range of percentages is called a confidence interval and represents the high- and low-end points between which the actual achievement results should fall 95% of the time. The high- and low-end points are calculated by multiplying the standard error of measurement for each statistic by 1.96. These statistics, sampling errors in the CMEC SAIP Science Assessment, are presented alongside achievement scores.

One can be confident that the actual achievement level of students would fall somewhere within the established range 19 times out of 20 if the assessment were repeated with a different sample of students. In the CMEC public report's charts, confidence intervals are represented by this symbol, ⊢. If the confidence intervals overlap, the differences are not different in terms of statistical significance.

Where the term "statistical significance" is used, it means that any differences are probably "real" differences and not due to chance.

Q. Does SAIP establish expectations for student performance?

A. In designing SAIP, the developers established the principle that most 13-year-olds would meet the criteria for Level 2, and that most 16-year-olds would meet the criteria for Level 3.

For the first assessments of mathematics and reading and writing, the provinces/territories did not establish national expectations for student performance. As a result, following those assessments, it was not possible to say whether student performance was good enough. As a result, the ministers of education decided that for the 1996 Science Assessment and for all subsequent assessments, national performance expectations would be set.

The national expectations for the 1999 SAIP Science Assessment, expressed as the percentage of 13- and 16-year-olds that should attain each performance level or above, are listed below.

Written Component					
	LEVEL 1 AND ABOVE	LEVEL 2 AND ABOVE	LEVEL 3 AND ABOVE	LEVEL 4 AND ABOVE	LEVEL 5
Age 13	85.0%	70.0%	40.0%	10.0%	2.5%
Age 16	95.0%	85.0%	70.0%	35.0%	10.0%

Practical Tasks Component					
	LEVEL 1 AND ABOVE	LEVEL 2 AND ABOVE	LEVEL 3 AND ABOVE	LEVEL 4 AND ABOVE	LEVEL 5
Age 13	95.0%	85.0%	50.0%	15.0%	5.0%
Age 16	95.0%	92.5%	75.0%	40.0%	20.0%

Q. What process was used to establish national expectations in science?

A. CMEC convened an 85-member panel of Canadian educators and non-educators, each of whom attended one of three expectation-setting sessions held in Western, Central and Atlantic Canada during September and October 1999. The panel consisted of classroom science teachers, curriculum specialists, parents, students, university academics, business and industry representatives, community leaders and members of national organizations with an interest in science.

The panel reviewed all assessment procedures, materials and actual student results to make decisions about the percentage of 13- and 16-year-old students that should achieve or surpass each of the five performance levels for both the written and practical tasks components of the assessment. The SAIP science public report provides further details about the national expectation-setting process.

Q. Can the results of the 1999 SAIP Science Assessment be compared to the results from 1996?

A. Although the 1999 SAIP Science Assessment was administered somewhat differently than the 1996 assessment, measures were taken to assure the comparability of some portions of the assessment.

For the written component, some questions had minor changes, mostly to clarify language. For the practical tasks component, two tasks were modified to prompt students to demonstrate higher performance levels, one task was replaced because it had been released in the public report and some questions had minor changes, mostly to clarify language.

The differences in the distribution of the achievement levels between 1996 and 1999 may be due to differences in the scoring process for the practical tasks assessment from 1996 to 1999. Higher scores may also reflect a greater emphasis on the application of science skills in the classroom.

Q. How can I obtain a copy of the CMEC public report?

A. The report can be downloaded from the CMEC web site at www.cmec.ca/indexe.stm or a hard copy can be requested from EQAO's distribution centre by calling 1-888-327-7377.

SAIP 1999 – Written Component

(Percentage of 13-year-olds by Performance Level and by Population)

PROVINCE/TERRITORY	BELOW 1	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5
British Columbia	8.9 *(2.0)*	14.9 *(2.4)* 91.1 *(2.0)*	18.2 *(2.6)* 76.1 *(2.9)*	47.5 *(3.4)* 57.9 *(3.4)*	9.1 *(2.0)* 10.4 *(2.1)*	1.3 *(0.8)* 1.3 *(0.8)*
Alberta	9.3 *(1.8)*	8.2 *(1.7)* 90.7 *(1.8)*	17.6 *(2.4)* 82.5 *(2.4)*	50.2 *(3.2)* 64.9 *(3.0)*	12.0 *(2.1)* 14.7 *(2.3)*	2.7 *(1.0)* 2.7 *(1.0)*
Saskatchewan	9.2 *(1.9)*	15.3 *(2.4)* 90.8 *(1.9)*	23.4 *(2.8)* 75.5 *(2.9)*	44.3 *(3.3)* 52.1 *(3.3)*	6.7 *(1.7)* 7.8 *(1.8)*	1.2 *(0.7)* 1.2 *(0.7)*
Manitoba (E)	13.4 *(2.3)*	13.9 *(2.4)* 86.6 *(2.3)*	19.1 *(2.7)* 72.8 *(3.0)*	45.2 *(3.4)* 53.7 *(3.4)*	8.0 *(1.9)* 8.5 *(1.9)*	0.5 *(0.5)* 0.5 *(0.5)*
Manitoba (F)	29.3 *(3.5)*	9.5 *(2.2)* 70.7 *(3.5)*	20.9 *(3.1)* 61.2 *(3.7)*	37.7 *(3.7)* 40.3 *(3.7)*	2.4 *(1.2)* 2.6 *(1.2)*	0.2 *(0.4)* 0.2 *(0.4)*
Ontario (E)	**11.6 *(2.2)***	**16.3 *(2.6)*** **88.4 *(2.2)***	**23.7 *(3.0)*** **72.1 *(3.1)***	**41.1 *(3.5)*** **48.4 *(3.5)***	**6.8 *(1.8)*** **7.3 *(1.8)***	**0.5 *(0.5)*** **0.5 *(0.5)***
Ontario (F)	**25.3 *(2.9)***	**17.5 *(2.5)*** **74.7 *(2.9)***	**21.8 *(2.7)*** **57.2 *(3.3)***	**32.0 *(3.1)*** **35.4 *(3.2)***	**3.4 *(1.2)*** **3.4 *(1.2)***	**0.0 *(0.0)*** **0.0 *(0.0)***
Quebec (E)	14.1 *(2.3)*	16.2 *(2.4)* 85.9 *(2.3)*	19.1 *(2.6)* 69.6 *(3.0)*	42.4 *(3.2)* 50.5 *(3.3)*	7.3 *(1.7)* 8.1 *(1.8)*	0.8 *(0.6)* 0.8 *(0.6)*
Quebec (F)	13.5 *(2.1)*	13.7 *(2.1)* 86.5 *(2.1)*	15.4 *(2.3)* 72.8 *(2.8)*	49.7 *(3.1)* 57.3 *(3.1)*	7.3 *(1.6)* 7.6 *(1.7)*	0.3 *(0.3)* 0.3 *(0.3)*
New Brunswick (E)	10.3 *(2.1)*	20.3 *(2.8)* 89.7 *(2.1)*	19.7 *(2.8)* 69.4 *(3.2)*	44.1 *(3.5)* 49.7 *(3.5)*	5.4 *(1.6)* 5.5 *(1.6)*	0.1 *(0.2)* 0.1 *(0.2)*
New Brunswick (F)	22.5 *(2.6)*	17.0 *(2.4)* 77.5 *(2.6)*	22.0 *(2.6)* 60.5 *(3.1)*	34.2 *(3.0)* 38.5 *(3.1)*	3.9 *(1.2)* 4.3 *(1.3)*	0.4 *(0.4)* 0.4 *(0.4)*
Nova Scotia (E)	10.5 *(2.2)*	19.9 *(2.9)* 89.5 *(2.2)*	21.3 *(3.0)* 69.5 *(3.3)*	41.0 *(3.6)* 48.2 *(3.6)*	7.1 *(1.9)* 7.2 *(1.9)*	0.1 *(0.3)* 0.1 *(0.3)*
Nova Scotia (F)	25.0 *(3.1)*	13.2 *(2.4)* 75.0 *(3.1)*	21.6 *(2.9)* 61.8 *(3.5)*	36.3 *(3.4)* 40.2 *(3.5)*	3.9 *(1.4)* 3.9 *(1.4)*	0.0 *(0.0)* 0.0 *(0.0)*
Prince Edward Island	9.8 *(2.0)*	15.9 *(2.4)* 90.2 *(2.0)*	21.4 *(2.7)* 74.3 *(2.9)*	45.6 *(3.3)* 52.9 *(3.3)*	7.2 *(1.7)* 7.3 *(1.7)*	0.2 *(0.3)* 0.2 *(0.3)*
Newfoundland	16.4 *(2.1)*	15.5 *(2.0)* 83.6 *(2.1)*	21.1 *(2.3)* 68.0 *(2.6)*	41.7 *(2.7)* 46.9 *(2.8)*	4.5 *(1.2)* 5.2 *(1.2)*	0.7 *(0.5)* 0.7 *(0.5)*
Nunavut	71.0 *(2.9)*	11.5 *(2.1)* 29.0 *(2.9)*	5.4 *(1.5)* 17.5 *(2.5)*	10.3 *(2.0)* 12.1 *(2.1)*	0.9 *(0.6)* 1.8 *(0.9)*	0.9 *(0.6)* 0.9 *(0.6)*
Northwest Territories	32.6 *(2.2)*	15.2 *(1.7)* 67.4 *(2.2)*	16.2 *(1.7)* 52.2 *(2.3)*	32.4 *(2.2)* 36.0 *(2.2)*	3.2 *(0.8)* 3.6 *(0.9)*	0.4 *(0.3)* 0.4 *(0.3)*
Yukon	17.1 *(2.2)*	11.6 *(1.9)* 82.9 *(2.2)*	16.2 *(2.2)* 71.3 *(2.6)*	45.3 *(2.9)* 55.0 *(2.9)*	8.3 *(1.6)* 9.8 *(1.7)*	1.5 *(0.7)* 1.5 *(0.7)*
Canada	**11.9 *(0.6)***	**14.7 *(0.6)*** **88.1 *(0.6)***	**20.0 *(0.7)*** **73.3 *(0.8)***	**44.9 *(0.9)*** **53.3 *(0.9)***	**7.7 *(0.5)*** **8.5 *(0.5)***	**0.8 *(0.2)*** **0.8 *(0.2)***

Note:

- For each population, the first line shows the percentages of students by highest level achieved, the second line shows cumulative percentages of students at or above each level and the confidence intervals (±1.96 times the standard errors) for the percentages are shown between parentheses. First-line totals may not always match second-line percentages due to prior rounding of numbers to the nearest decimal point. Results are weighted so as to correctly represent each population.

SAIP 1999 – Written Component

(Percentage of 16-year-olds by Performance Level and by Population)

PROVINCE/TERRITORY	BELOW 1	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5
British Columbia	6.8 *(1.9)*	5.6 *(1.7)* 93.2 *(1.9)*	11.7 *(2.4)* 87.6 *(2.5)*	46.3 *(3.7)* 75.8 *(3.2)*	25.6 *(3.3)* 29.5 *(3.4)*	3.9 *(1.4)* 3.9 *(1.4)*
Alberta	3.1 *(1.1)*	3.6 *(1.2)* 96.9 *(1.1)*	7.5 *(1.7)* 93.3 *(1.6)*	36.0 *(3.1)* 85.8 *(2.3)*	38.0 *(3.1)* 49.8 *(3.2)*	11.8 *(2.1)* 11.8 *(2.1)*
Saskatchewan	5.7 *(1.6)*	6.5 *(1.7)* 94.3 *(1.6)*	10.4 *(2.1)* 87.8 *(2.2)*	48.7 *(3.4)* 77.4 *(2.9)*	23.9 *(2.9)* 28.8 *(3.1)*	4.9 *(1.5)* 4.9 *(1.5)*
Manitoba (E)	4.8 *(1.4)*	4.9 *(1.4)* 95.2 *(1.4)*	10.4 *(2.0)* 90.2 *(1.9)*	44.3 *(3.3)* 79.8 *(2.6)*	29.1 *(3.0)* 35.5 *(3.1)*	6.4 *(1.6)* 6.4 *(1.6)*
Manitoba (F)	7.5 *(2.0)*	3.1 *(1.3)* 92.5 *(2.0)*	13.2 *(2.6)* 89.4 *(2.4)*	54.3 *(3.8)* 76.2 *(3.3)*	19.2 *(3.0)* 21.9 *(3.2)*	2.6 *(1.2)* 2.6 *(1.2)*
Ontario (E)	**7.5 *(2.0)***	**7.7 *(2.0)*** **92.5 *(2.0)***	**12.6 *(2.6)*** **84.8 *(2.8)***	**44.2 *(3.8)*** **72.2 *(3.4)***	**23.1 *(3.2)*** **28.0 *(3.5)***	**4.9 *(1.7)*** **4.9 *(1.7)***
Ontario (F)	**13.4 *(2.8)***	**10.6 *(2.5)*** **86.6 *(2.8)***	**15.9 *(3.0)*** **76.0 *(3.5)***	**42.0 *(4.0)*** **60.1 *(4.0)***	**15.5 *(2.9)*** **18.1 *(3.1)***	**2.6 *(1.3)*** **2.6 *(1.3)***
Quebec (E)	7.3 *(1.7)*	6.4 *(1.6)* 92.7 *(1.7)*	9.6 *(1.9)* 86.3 *(2.2)*	44.3 *(3.2)* 76.7 *(2.7)*	25.4 *(2.8)* 32.4 *(3.0)*	7.0 *(1.6)* 7.0 *(1.6)*
Quebec (F)	4.4 *(1.3)*	4.9 *(1.3)* 95.6 *(1.3)*	10.1 *(1.9)* 90.6 *(1.8)*	47.7 *(3.1)* 80.5 *(2.4)*	27.1 *(2.7)* 32.8 *(2.9)*	5.7 *(1.4)* 5.7 *(1.4)*
New Brunswick (E)	9.1 *(2.2)*	7.2 *(1.9)* 90.9 *(2.2)*	11.1 *(2.4)* 83.7 *(2.8)*	44.4 *(3.7)* 72.6 *(3.3)*	24.7 *(3.2)* 28.3 *(3.4)*	3.5 *(1.4)* 3.5 *(1.4)*
New Brunswick (F)	10.3 *(2.0)*	9.1 *(1.9)* 89.7 *(2.0)*	11.3 *(2.1)* 80.6 *(2.6)*	50.0 *(3.3)* 69.4 *(3.1)*	16.8 *(2.5)* 19.4 *(2.6)*	2.6 *(1.1)* 2.6 *(1.1)*
Nova Scotia (E)	7.2 *(1.5)*	6.2 *(1.4)* 92.8 *(1.5)*	12.0 *(1.8)* 86.5 *(1.9)*	45.1 *(2.8)* 74.6 *(2.4)*	25.7 *(2.5)* 29.5 *(2.6)*	3.8 *(1.1)* 3.8 *(1.1)*
Nova Scotia (F)	10.7 *(5.3)*	6.0 *(4.1)* 89.3 *(5.3)*	9.5 *(5.1)* 83.3 *(6.4)*	35.7 *(8.3)* 73.8 *(7.6)*	35.7 *(8.3)* 38.1 *(8.4)*	2.4 *(2.6)* 2.4 *(2.6)*
Prince Edward Island	4.1 *(1.6)*	3.9 *(1.5)* 95.9 *(1.6)*	10.8 *(2.4)* 92.0 *(2.1)*	45.4 *(3.9)* 81.3 *(3.1)*	29.2 *(3.6)* 35.9 *(3.8)*	6.7 *(2.0)* 6.7 *(2.0)*
Newfoundland	10.6 *(1.9)*	7.3 *(1.6)* 89.4 *(1.9)*	9.4 *(1.8)* 82.0 *(2.4)*	42.3 *(3.1)* 72.7 *(2.8)*	24.7 *(2.7)* 30.4 *(2.9)*	5.6 *(1.4)* 5.6 *(1.4)*
Nunavut	48.4 *(7.2)*	18.3 *(5.6)* 51.6 *(7.2)*	9.5 *(4.2)* 33.3 *(6.8)*	16.7 *(5.4)* 23.8 *(6.2)*	5.6 *(3.3)* 7.1 *(3.7)*	1.6 *(1.8)* 1.6 *(1.8)*
Northwest Territories	11.5 *(2.5)*	8.7 *(2.2)* 88.5 *(2.5)*	12.1 *(2.6)* 79.9 *(3.1)*	38.4 *(3.8)* 67.8 *(3.7)*	25.4 *(3.4)* 29.4 *(3.6)*	4.0 *(1.5)* 4.0 *(1.5)*
Yukon	9.1 *(2.2)*	4.7 *(1.7)* 90.9 *(2.2)*	12.2 *(2.6)* 86.2 *(2.7)*	35.8 *(3.7)* 74.0 *(3.4)*	30.7 *(3.6)* 38.2 *(3.8)*	7.5 *(2.1)* 7.5 *(2.1)*
Canada	**6.4 *(0.4)***	**6.3 *(0.4)*** **93.6 *(0.4)***	**11.2 *(0.6)*** **87.3 *(0.6)***	**44.5 *(0.9)*** **76.1 *(0.8)***	**26.0 *(0.8)*** **31.6 *(0.8)***	**5.6 *(0.4)*** **5.6 *(0.4)***

Note:

- For each population, the first line shows the percentages of students by highest level achieved, the second line shows cumulative percentages of students at or above each level and the confidence intervals (±1.96 times the standard errors) for the percentages are shown between parentheses. First-line totals may not always match second-line percentages due to prior rounding of numbers to the nearest decimal point. Results are weighted so as to correctly represent each population.

SAIP 1999 – Practical Tasks Component

(Percentage of 13-year-olds by Performance Level and by Population)

PROVINCE/TERRITORY	BELOW 1	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5
Saskatchewan	4.0 *(1.4)*	7.4 *(1.8)* 96.0 *(1.4)*	41.8 *(3.4)* 88.6 *(2.2)*	37.8 *(3.3)* 46.7 *(3.4)*	5.2 *(1.5)* 9.0 *(2.0)*	3.8 *(1.3)* 3.8 *(1.3)*
Ontario (E)	**3.8 *(1.4)***	**9.4 *(2.2)*** **96.2 *(1.4)***	**43.8 *(3.7)*** **86.8 *(2.5)***	**31.8 *(3.4)*** **43.0 *(3.7)***	**5.4 *(1.7)*** **11.2 *(2.3)***	**5.8 *(1.7)*** **5.8 *(1.7)***
Ontario (F)	**5.2 *(2.0)***	**7.0 *(2.3)*** **94.8 *(2.0)***	**44.1 *(4.4)*** **87.8 *(2.9)***	**31.1 *(4.1)*** **43.7 *(4.4)***	**8.1 *(2.4)*** **12.6 *(3.0)***	**4.5 *(1.9)*** **4.5 *(1.9)***
Others	3.2 *(0.8)*	4.4 *(1.0)* 96.5 *(0.9)*	40.5 *(2.4)* 92.1 *(1.3)*	37.4 *(2.3)* 51.6 *(2.4)*	7.9 *(1.3)* 14.2 *(1.7)*	6.3 *(1.2)* 6.3 *(1.2)*
Canada	**3.7 *(0.6)***	**6.3 *(0.8)*** **96.3 *(0.6)***	**41.7 *(1.6)*** **90.0 *(1.0)***	**35.4 *(1.6)*** **48.3 *(1.6)***	**6.9 *(0.8)*** **13.0 *(1.1)***	**6.0 *(0.8)*** **6.0 *(0.8)***

SAIP 1999 – Practical Tasks Component

(Percentage of 16-year-olds by Performance Level and by Population)

PROVINCE/TERRITORY	BELOW 1	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5
Saskatchewan	1.6 *(0.9)*	2.5 *(1.1)* 98.4 *(0.9)*	21.4 *(2.9)* 96.0 *(1.4)*	39.5 *(3.5)* 74.6 *(3.1)*	17.3 *(2.7)* 35.1 *(3.4)*	17.7 *(2.7)* 17.7 *(2.7)*
Ontario (E)	**3.1 *(1.4)***	**2.6 *(1.3)*** **96.9 *(1.4)***	**22.1 *(3.4)*** **94.3 *(1.9)***	**32.8 *(3.8)*** **72.2 *(3.6)***	**18.8 *(3.2)*** **39.4 *(4.0)***	**20.6 *(3.3)*** **20.6 *(3.3)***
Ontario (F)	**3.0 *(1.6)***	**2.7 *(1.5)*** **97.0 *(1.6)***	**29.6 *(4.3)*** **94.3 *(2.2)***	**35.3 *(4.5)*** **64.7 *(4.5)***	**15.4 *(3.4)*** **29.4 *(4.3)***	**13.9 *(3.3)*** **13.9 *(3.3)***
Quebec	1.7 *(0.9)*	1.0 *(0.7)* 98.3 *(0.9)*	18.5 *(2.7)* 97.3 *(1.1)*	36.8 *(3.3)* 78.7 *(2.8)*	23.7 *(2.9)* 41.9 *(3.4)*	18.2 *(2.6)* 18.2 *(2.6)*
Others	2.7 *(0.9)*	1.2 *(0.6)* 97.2 *(1.0)*	17.8 *(2.2)* 96.0 *(1.1)*	33.7 *(2.7)* 78.1 *(2.4)*	21.2 *(2.4)* 44.5 *(2.9)*	23.3 *(2.4)* 23.3 *(2.4)*
Canada	**2.6 *(0.5)***	**1.8 *(0.4)*** **97.4 *(0.5)***	**19.9 *(1.3)*** **95.6 *(0.7)***	**34.4 *(1.5)*** **75.7 *(1.4)***	**20.7 *(1.3)*** **41.4 *(1.6)***	**20.7 *(1.3)*** **20.7 *(1.3)***

Note:

- For each population, the first line shows the percentages of students by highest level achieved, the second line shows cumulative percentages of students at or above each level, and the confidence intervals (±1.96 times the standard errors) for the percentages are shown between parentheses. First-line totals may not always match second-line percentages due to prior rounding of numbers to the nearest decimal point Results are weighted so as to correctly represent each population.
- "Others" refers to the data gathered from those jurisdictions who participated only in the Canadian sample.