

Grade 9

Assessment Highlights

Knowledge & Employability

Mathematics

Alberta Provincial Achievement Testing

2017–2018

This document was written primarily for:

Students	
Teachers	✓ of KE Mathematics
Administrators	✓
Parents	
General Audience	
Others	

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The [Alberta Education website](http://education.alberta.ca) is found at education.alberta.ca.

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The 2018 Grade 9 Knowledge and Employability Mathematics Achievement Test

This report provides teachers, school administrators, and the public with an overview of the performance of students who wrote the 2018 Grade 9 Knowledge and Employability Mathematics Achievement Test. The examination statistics that are included in this document represent all writers: both French and English. If you would like to obtain English-only statistics or French-only statistics that apply to your school, please refer to your detailed reports, which are available on the Stakeholder File Exchange. This report complements the detailed school and jurisdiction reports.

How Many Students Wrote the Test?

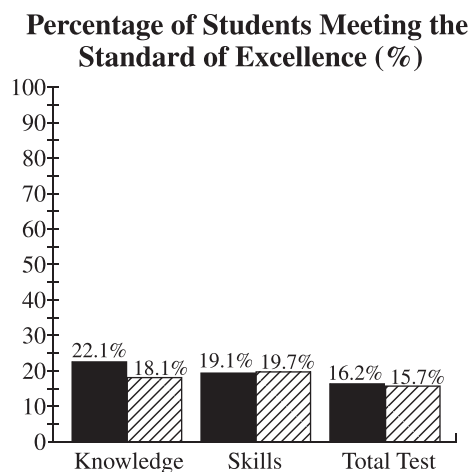
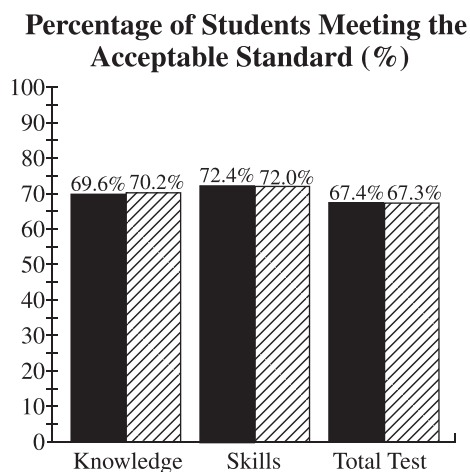
A total of 1 700 students wrote the 2018 Grade 9 Knowledge and Employability Mathematics Achievement Test.


What Was the Test Like?


The 2018 Grade 9 Knowledge and Employability Mathematics Achievement Test consisted of 46 multiple-choice and 4 numerical-response items based on four strands: Number; Patterns and Relations; Shape and Space; and Statistics and Probability.

How Well Did Students Do?

The percentages of students meeting the acceptable standard and the standard of excellence in 2018 compared with 2017 are shown in the graphs below. Out of a possible total score of 50, the provincial average on the test was 30.8 (61.6%).



 2018 Achievement Standards: The percentage of students in the province who met the acceptable standard and the standard of excellence on the 2018 Grade 9 Knowledge and Employability Mathematics Achievement Test (based on those who wrote).

 2017 Achievement Standards: The percentage of students in the province who met the acceptable standard and the standard of excellence on the 2017 Grade 9 Knowledge and Employability Mathematics Achievement Test (based on those who wrote).

2018 Test Blueprint and Student Achievement

In 2018, 67.4% of students who wrote the test achieved the acceptable standard on the Grade 9 Knowledge and Employability Mathematics Achievement Test, and 16.2% of students achieved the standard of excellence.

The blueprint below shows the reporting categories and test sections (curricular content areas) by which 2018 summary data are reported to schools and school authorities, and the provincial average of student achievement by both raw score and percentage.

Test Sections	Reporting Category		Provincial Student Achievement (Average Raw Score and Percentage)
	Knowledge	Skills	
Number <ul style="list-style-type: none"> • Number Concepts • Number Operations 			10.8/18 (60.0%)
Patterns and Relations <ul style="list-style-type: none"> • Patterns and Relationships • Variables and Equations 			2.9/5 (58.0%)
Shape and Space <ul style="list-style-type: none"> • Measurement • 3-D Objects and 2-D Shapes • Transformations 			11.3/19 (59.5%)
Statistics and Probability <ul style="list-style-type: none"> • Collecting and Analyzing Information 			5.8/8 (72.5%)
Provincial Student Achievement (Average Raw Score and Percentage)	11.4/19 (60.0%)	19.4/31 (62.6%)	Total Test Raw Score 30.8/50 (61.6%)

Commentary on 2018 Student Achievement

The following is a brief summary of the areas where most students experienced difficulties and demonstrated strengths on the 2018 Grade 9 Knowledge and Employability Mathematics Achievement Test. Sample questions are also provided to highlight some of these areas. These questions are no longer secured and will not be reused on future achievement tests.

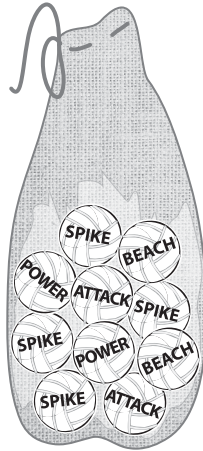
Students demonstrated relative strength by being able to:

- examine and interpret information to identify a transformation;
- identify a given set of integers positioned on a number line;
- convert a percentage to solve an everyday problem;
- use measurement concepts to solve a problem in an everyday context;
- examine data to identify the most likely occurrence of a given event.

For **multiple-choice question 33**, students had to examine data to identify the most likely to occur of four given events. Approximately 88.5% of students who met the acceptable standard and 98.6% of students who met the standard of excellence answered this question correctly.

Use the following illustration to answer question 33.

A student takes 2 volleyballs at random out of the bag shown below.



33. If the first ball taken from the bag is labelled BEACH, then it is **most likely** that the second ball will be labelled
- A. SPIKE
 - B. BEACH
 - C. POWER
 - D. ATTACK

82.2% of the students chose A (correct answer)

5.9% of the students chose B

6.4% of the students chose C

5.3% of the students chose D

Students experienced relative difficulty with:

- applying arithmetic operations to solve an everyday problem involving fractions;
- identifying a composite number;
- extending an everyday pattern to draw a conclusion;
- identifying a number sentence based on information related to an everyday context;
- determining the volume of a given shape.

For **multiple-choice question 11**, students had to apply arithmetic operations to solve an everyday problem involving fractions. Approximately 31.2% of students who met the acceptable standard and 72.4% of students who met the standard of excellence answered this question correctly.

11. If Jill needs $\frac{3}{4}$ cup of sugar to make 24 cookies, then how many cups of sugar does she need to make 48 cookies?
- A. $1\frac{1}{4}$ cups
- B. $1\frac{3}{8}$ cups
- C. $1\frac{1}{2}$ cups
- D. $1\frac{3}{4}$ cups

12.0% of the students chose A

28.2% of the students chose B

32.6% of the students chose C (correct answer)

26.9% of the students chose D

Provincial Achievement Testing Program Support Documents

The Alberta Education website contains several documents that provide valuable information about various aspects of the Provincial Achievement Test program. To access these documents, go to the [Alberta Education website](#). Click on one of the specific links to access the following documents.

Achievement Testing Program General Information Bulletin

The [General Information Bulletin](#) is a compilation of several documents produced by Alberta Education and is intended to provide superintendents, principals, and teachers with easy access to information about all aspects of the Provincial Achievement Test program. Sections in the bulletin contain information pertaining to schedules and significant dates; security and test rules; test administration directives, guidelines, and procedures; calculator and computer policies; test accommodations; test marking and results; field testing; resources and web documents; forms and samples; and Provincial Assessment Sector contacts.

Subject Bulletins

At the beginning of each school year, subject bulletins are posted on the Alberta Education website for all Provincial Achievement Test subjects for grades 6 and 9. Each bulletin provides descriptions of assessment standards, test design and blueprinting, and scoring guides (where applicable) as well as suggestions for preparing students to write the tests and information about how teachers can participate in test development activities.

Examples of the Standards for Students' Writing

For Provincial Achievement Tests in grades 6 and 9 English Language Arts and Français/French Language Arts, writing samples are designed for teachers and students to enhance students' writing and to assess this writing relative to the standards inherent in the scoring guides. The exemplars documents contain sample responses with scoring rationales that relate student work to the scoring categories and scoring criteria.

Previous Achievement Tests and Answer Keys

All January Provincial Achievement Tests (parts A and B) for Grade 9 semestered students are secured and must be returned to Alberta Education. All May/June Provincial Achievement Tests are secured except Part A of grades 6 and 9 English Language Arts and Français/French Language Arts. Unused or extra copies of only these Part A tests may be kept at the school after administration. Teachers may also use the released items and/or tests that are posted on the Alberta Education website.

Parent Guides

Each school year, versions of the [Alberta Provincial Achievement Testing Parent Guide](#) for grades 6 and 9 are posted on the Alberta Education website. Each guide answers frequently asked questions about the Provincial Achievement Test program and provides descriptions of and sample questions for each Provincial Achievement Test subject.

Involvement of Teachers

Teachers of grades 6 and 9 are encouraged to take part in activities related to the Provincial Achievement Test program. These activities include item development, test validation, field testing, and marking. In addition, arrangements can be made through the Alberta Regional Professional Development Consortia for teacher in-service workshops on topics such as interpreting Provincial Achievement Test results to improve student learning.