

Grade 6  
Subject Bulletin  
**Science**

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Alberta Provincial Achievement Testing 2019–2020

This document was written primarily for:

Students	
Teachers	✓ Grade 6 Science
Administrators	✓
Parents	
General Audience	
Others	

Alberta Education, Government of Alberta

2019–2020

*Science 6 Subject Bulletin*

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You can find [provincial achievement test-related materials](#) on the Alberta Education website.

Additional topics of interest are found in the [General Information Bulletin](#).



# Grade 6 Science

## Provincial Achievement Test

### General description

The *Grade 6 Science Provincial Achievement Test* consists of 50 multiple-choice questions.

The questions are placed in real-life contexts. Frequently, a number of questions will be clustered around a common context.

Knowledge and skill components are integrated in the test. Knowledge components relate to fundamental understanding of both the concepts and the processes of science. Skill components relate to the application of science processes and the use of higher-level thinking to solve problems.

Questions will have contexts drawn from the following topics:

- inquiry and problem solving
- air, aerodynamics, and flight
- sky science
- evidence and investigation
- trees and forests

The test is developed to be completed in 60 minutes; however, students have up to 120 minutes to complete the test should they need it.

Students record their answers on a tear-out answer sheet.

Students require HB pencils, erasers, and scrap paper. Calculators are not required for successful completion of the assessment but are permitted.

Students may not use a dictionary, a thesaurus, or other reference materials when writing the test. If a word that warrants a definition is used on a test, it will be defined on the page on which it appears.

## Grade 6 Science provincial assessment standards

The following statements describe what is expected of Grade 6 students at the acceptable standard and the standard of excellence, based on outcomes in the [Grade 6 Science Program of Studies](#). These statements represent examples of the standards against which student achievement is measured. It is important to remember that one test cannot measure all the outcomes in the Grade 6 Science Program of Studies.

<b>Acceptable standard</b>	<b>Standard of excellence</b>
<p>Students who meet the acceptable standard in Grade 6 Science are able to</p> <ul style="list-style-type: none"> <li>• design and carry out an investigation in which variables are identified and controlled and which provide a fair test of the question being investigated</li> <li>• recognize the importance of accuracy in observation and measurement and apply suitable methods to record, compile, interpret, and evaluate observations and measurements. They can also design and carry out an investigation of a practical problem involving the construction or modification of a device that moves through air, and they can develop a possible solution.</li> <li>• describe the properties of air and the interactions of air with objects in flight</li> <li>• construct devices that move through air and identify adaptations for controlling flight</li> <li>• describe and interpret the movement of objects in the sky and identify pattern and order in these movements</li> <li>• identify materials and apply knowledge of the properties and interactions of those materials to an investigation</li> <li>• describe the characteristics of trees and the interaction of trees with other living things in the local environment</li> </ul>	<p>Students who meet the standard of excellence in Grade 6 Science are able to</p> <ul style="list-style-type: none"> <li>• design, carry out, and evaluate an investigation in which variables are identified and controlled</li> <li>• identify new questions to be explored</li> <li>• make observations and measurements accurately</li> <li>• apply novel methods to record, compile, interpret, and evaluate observations and measurements</li> <li>• design, carry out, and evaluate an investigation of a practical problem involving the construction or modification of a device that moves through air and develop a workable solution</li> <li>• describe in detail the properties of air and the interactions of air with objects in flight</li> <li>• construct aerodynamic devices that move through air and identify and make adaptations for controlling flight</li> <li>• make detailed descriptions and accurate interpretations about the movements of objects in the sky and identify their specific patterns</li> <li>• apply knowledge of the properties and the interaction of materials to both the investigation and identification of a material sample with precision</li> <li>• clearly describe the characteristics of trees and the interaction of trees with other living things in the local environment</li> <li>• demonstrate confidence in their personal ability to learn and develop problem-solving skills, perseverance in the search for understanding, and critical thinking in examining evidence and determining what the evidence means</li> </ul>

## Blueprint

The blueprint below shows the reporting categories under which questions are classified. The number of questions in each reporting category is approximate.

General Learner Expectations	Question Distribution by Reporting Category		Number (Percentage) of Questions
	Knowledge	Skills	
<p><b>Inquiry and Problem Solving</b></p> <ul style="list-style-type: none"> <li>• Design and carry out an investigation in which variables are identified and controlled and that provides a fair test of the question being investigated.</li> <li>• Recognize the importance of accuracy in observation and measurement, and apply suitable methods to record, compile, interpret, and evaluate observations and measurements.</li> <li>• Design and carry out an investigation of a practical problem and develop a possible solution.</li> </ul>		<b>11</b>	<b>11 (22%)</b>
<p><b>Air, Aerodynamics, and Flight</b></p> <ul style="list-style-type: none"> <li>• Describe properties of air and the interactions of air with objects in flight, construct devices that move through air, and identify adaptations for controlling flight.</li> </ul>	<b>9</b>	<b>5</b>	<b>14 (28%)</b>
<p><b>Sky Science</b></p> <ul style="list-style-type: none"> <li>• Observe, describe, and interpret the movement of objects in the sky, and identify pattern and order in these movements.</li> </ul>	<b>4</b>	<b>4</b>	<b>8 (16%)</b>

(Continued on the next page)

General Learner Expectations	Question Distribution by Reporting Category		Number (Percentage) of Questions
	Knowledge	Skills	
<b>Evidence and Investigation</b> <ul style="list-style-type: none"> <li>• Apply observation and inference skills to recognize and interpret patterns, and distinguish a specific pattern from among a group of similar patterns.</li> <li>• Apply a knowledge of the properties and interactions of materials to the investigation and identification of a material sample.</li> </ul>	2	5	7 (14%)
<b>Trees and Forests</b> <ul style="list-style-type: none"> <li>• Describe characteristics of trees and the interaction of trees with other living things in the local environment.</li> </ul>	5	5	10 (20%)
<b>Number (Percentage) of Questions</b>	<b>20 (40%)</b>	<b>30 (50%)</b>	<b>50 (100%)</b>

# Preparing Students for the Provincial Achievement Test

## Suggestions for preparing students

The best way to prepare students for writing the provincial achievement test is to teach the curriculum well and to ensure that students know what is expected. Many of the skills and attitudes that support test writing are, in fact, good skills and strategies for approaching all kinds of learning tasks.

Note that the questions on the science test are placed in real-life contexts.

Teachers are encouraged to familiarize their students with the types of questions that will appear on the test. [Released Materials](#) from previously secured tests are available on the Alberta Education website.

Teachers are also encouraged to share the following information with their students to help them prepare for the *Grade 6 Science Provincial Achievement Test*.

## Special-format practice tests

To give students an opportunity to practise provincial achievement test-style questions and content in Braille, audio, large print, or coloured print versions, Alberta Education produces special-format practice tests for all subjects that have a provincial achievement test. Alberta schools with registered Alberta K–12 students may place orders for these tests. Braille versions are available in English and, by request, in French. All tests are provided free of charge, but limits may be placed on order volumes to ensure access for all students.

For the greatest benefit, special-format practice tests should be written under conditions similar to those of the corresponding provincial achievement test. The same rules regarding the use of resources and devices should be followed.

Braille versions must be returned to Alberta Education after use.

### **For more information or to place an order, contact**

Laura LaFramboise  
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## Suggestions for answering questions

- Before you begin, find out how much time you have.
  - Ask questions if you are unsure of anything.
  - Skim through the whole test before beginning. Find out how many questions there are, and plan your time accordingly.
  - Answer the easier questions first; then go back to the more difficult ones.
  - Do not spend too much time on any one question. Make a mark (\* or ?) beside any questions you have difficulty with, and go back to them if you have time.
  - Read each question carefully, underline or highlight key words, and try to determine an answer before looking at the choices.
  - Read all the choices and see which one best fits the answer.
  - When you are not sure which answer is correct, cross out any choices that are wrong and then select the best of the remaining choices.
  - If time permits, recheck your answers.
  - Double-check to make sure that you have answered everything before handing in the test.
  - Read the information given using the strategy that works best for you. You should either
    - look at all the information and think carefully about it before you try to answer the question
- OR**
- read the questions first and then look at the information, keeping in mind the questions you need to answer
- Make sure that you look at all forms of the information given. Information may be given in words, charts, pictures, graphs, or maps.
  - When information is given for more than one question, go back to the information before answering each question.
  - Check your work when you calculate an answer, even when your answer is one of the choices.

When answering “best answer” questions, be sure to carefully read all four alternatives (A, B, C, and D) before choosing the answer that you think is best. These questions will always include a boldfaced qualifier such as **best**, **most strongly**, or **most clearly** in their stems. All the alternatives (A, B, C, and D) are, to some degree, correct, but one of the alternatives will be “best” in that it takes more of the information into account or can be supported most strongly by reference to the information.

# Opportunities to Participate in Test-development Activities

## Field testing

All provincial achievement test questions are field tested before use. By “testing” the test questions, students who write field tests have an opportunity for a practice run at answering questions that could be used on future provincial achievement tests. As well, the teachers have an opportunity to comment on the appropriateness and quality of the test questions.

Through the online field-test request system, teachers can create and modify field-test requests and check the status of these requests. Information regarding the field-test process and the request system is available at [Provincial Achievement Tests](#).

Once the completed requests are received by the Provincial Assessment Sector, classes will be selected to ensure that a representative and sufficiently large sample of students from across the province take part in the field test. Every effort will be made to place field tests as requested; however, because field tests are administered to a prescribed number of students, it may not be possible to fill all requests.

## **\*NEW** Working groups

Teacher involvement in the development of provincial achievement tests is important because it helps to ensure the validity and appropriateness of the assessments.

Teacher working groups are used throughout the test-development process to create raw forms of test questions and to review and revise draft forms of provincial achievement tests. These working groups usually meet for one or two days, two or three times per year. Occasionally, these meetings are held on weekends.

To be eligible to serve on a test-development working group, a teacher must currently be teaching the course in question or must have taught the course within the past three years.

Teachers participating in working groups are selected from the working-group nominees approved by superintendents of school jurisdictions. The call for nominations usually occurs in September. However, we will accept further nominations throughout the year. In some subjects, more teachers may be nominated for working groups than are needed. When teachers are selected, there must be a balance of first-time and experienced working-group members and regional representation by zone, school authority, and school. Unfortunately, not everyone whose name is submitted will be selected.

# Contacts 2019–2020

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## Provincial Assessment Sector mailing address

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Toll-free within Alberta: 310-0000  
Fax: 780-422-4200  
Alberta Education website:  
[education.alberta.ca](http://education.alberta.ca)

## Workforce Development Help Desk

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Office hours:  
Monday through Friday, 8:15 a.m. to 4:30 p.m.  
The office is open during the lunch hour.

**\*NEW**

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