

# Practice Test

## Science and Technology/Engineering

**GRADE 8**

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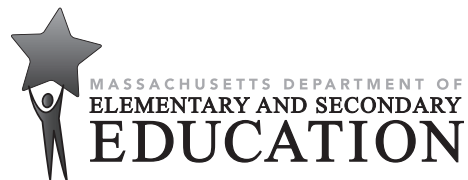
Student Name

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School Name

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District Name



This is a practice test. Your responses to practice test questions must be recorded on your Practice Test Answer Document.

Mark only one answer for each multiple-choice question. If you are not sure of the answer, choose the answer you think is best.

### **HOW TO ANSWER OPEN-RESPONSE QUESTIONS**

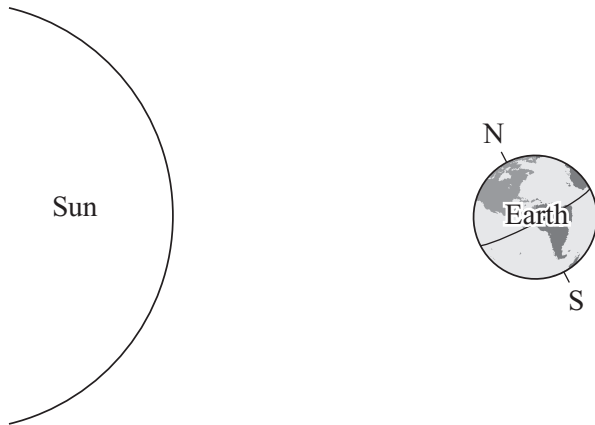
- Read all parts of each question carefully.
- Make each response as clear, complete, and accurate as you can.
- Support your responses.
- Check your answers.

# Science and Technology/Engineering

## DIRECTIONS

This practice test contains two multiple-choice questions and one open-response question. Mark your answers to these questions in the spaces provided on page 4 of your Practice Test Answer Document.

- 1 The illustration below shows Earth and the Sun.



(Not to scale)

What season does the Southern Hemisphere experience when Earth and the Sun are in the positions shown?

- A. fall
- B. spring
- C. summer
- D. winter

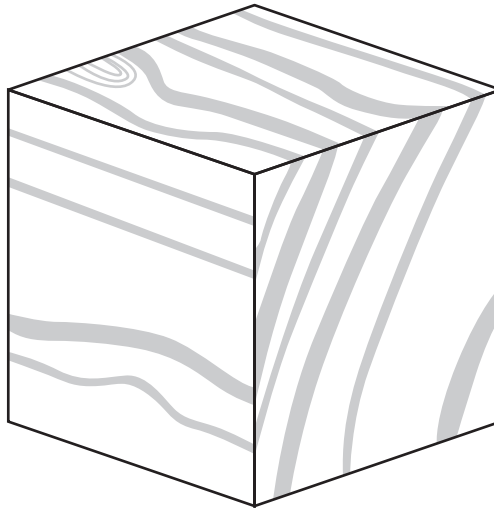
- 2 Which of the following statements **best** describes the process of natural selection in a population?
- A. All individuals develop traits to match changes to their environment.
  - B. All individuals learn to adapt to specific changes that occur slowly in their environment.
  - C. Some individuals respond to their environment by mutating to make themselves more likely to survive.
  - D. Some individuals have genetic differences that make them more likely to survive and reproduce in their environment.

Question 3 is an open-response question.

- **BE SURE TO ANSWER AND LABEL ALL PARTS OF THE QUESTION.**
- **Show all your work (diagrams, tables, or computations) in your Practice Test Answer Document.**
- **If you do the work in your head, explain in writing how you did the work.**

Write your answer to question 3 in the space provided on page 4 of your Practice Test Answer Document.

- 3 The diagram below shows a cube being studied by a science class.



The density of water is  $1.0 \text{ g/cm}^3$ . Although the class has no water, the students want to know if the cube will float or sink in water.

- a. List the instruments needed to conduct this investigation.
- b. Explain, in detail, the steps that must be taken to determine if the cube will float or sink.

**MASSACHUSETTS COMPREHENSIVE ASSESSMENT SYSTEM**

Grade 8 Science and Technology/Engineering

Practice Test Answer Document

<p>School Name: _____</p> <p>District Name: _____</p> <p>Last Name of Student: _____</p> <p>First Name of Student: _____</p>	<p style="text-align: center;"><b>Marking Instructions</b></p> <ul style="list-style-type: none"><li>• Use a No. 2 pencil only.</li><li>• Do not use ink, ballpoint, or felt-tip pens.</li><li>• Make solid marks that fill the circles completely.</li><li>• Erase cleanly any marks you wish to change.</li><li>• Do not make any stray marks on this form.</li><li>• Do not fold, tear, or damage this form.</li></ul>
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