

Computer-Based Released Items Grade 5 MCAS Science & Technology/Engineering Spring 2026

The spring 2026 grade 5 Science & Technology/Engineering (STE) test was administered in two formats: a computer-based version and a paper-based version. Most students took the computer-based test. The paper-based test was offered as an accommodation for eligible students who were unable to use a computer. More information can be found on the MCAS Test Administration Resources page at www.doe.mass.edu/mcas/admin.html.

The Department of Elementary and Secondary Education is releasing items from both versions of the test to provide information about the knowledge and skills that students are expected to demonstrate.

- Released items from the computer-based test are available online at mcas.onlinehelp.cognia.org/released-items.
- Released items from the paper-based test are available in PDF format on the Department's website at www.doe.mass.edu/mcas/release.html.

This document provides information about each released and unreleased operational item from the computer-based test, including the following: reporting category, standard covered, science and engineering practice category covered (if any), item type, item description, and correct answer (for released selected-response items only). Sample responses and scoring guidelines for constructed-response items will be posted at www.doe.mass.edu/mcas/student/.

A Note about Testing Mode

Most of the operational items on the grade 5 STE test were the same, regardless of whether a student took the computer-based version or the paper-based version. In places where a technology-enhanced item was used on the computer-based test, an adapted version of the item was created for use on the paper test. These adapted paper items were multiple-choice or multiple-select items that tested the same STE content and assessed the same standard as the technology-enhanced item.

**Grade 5 Science & Technology/Engineering
Spring 2026 Computer-Based Released Operational Items**

CBT Item No.	Reporting Category	Standard	Science and Engineering Practice Categories	Item Type*	Item Description	Correct Answer **
1	<i>Physical Science</i>	5.PS.2.1	None	SR	Determine which scenarios provide evidence that Earth exerts a gravitational force on objects.	A,B
2	<i>Earth and Space Science</i>	5.ESS.2.1	A. Investigations and Questioning	SR	Determine which question would be most helpful when investigating a change in the amount of groundwater.	B
3	<i>Earth and Space Science</i>	3.ESS.2.2	B. Mathematics and Data	SR	Interpret climate data to classify different climate regions.	see page 6
4	<i>Technology/Engineering</i>	3.ETS.1.2	B. Mathematics and Data	SR	Using information about material properties, determine which material best meets the given criteria.	D
5	<i>Technology/Engineering</i>	4.PS.4.3	C. Evidence, Reasoning, and Modeling	SR	Evaluate a model to determine that information is received and decoded at one step in a process.	C
6	<i>Technology/Engineering</i>	3.ETS.1.1	B. Mathematics and Data	SR	Analyze survey results to better define a design problem.	B
7	<i>Technology/Engineering</i>	4.ETS.1.5	A. Investigations and Questioning	CR	Describe the main purpose of a prototype and use information about a design problem to describe two criteria the prototype must meet.	
8	<i>Physical Science</i>	4.PS.3.2	C. Evidence, Reasoning, and Modeling	CR	Use information from a model to identify a type of energy in a system and describe two types of energy conversions in the system.	
9	<i>Physical Science</i>	3.PS.2.1	None	SR	Explain how friction affects the distance that an object moves.	B
10	<i>Earth and Space Science</i>	4.ESS.2.2	C. Evidence, Reasoning, and Modeling	SR	Describe the pattern of ocean trench locations shown on a map.	A
11	<i>Earth and Space Science</i>	5.ESS.1.2	C. Evidence, Reasoning, and Modeling	CR	Describe how to fix the error in a model showing day and night on Earth and explain the cause of day and night.	

12	<i>Physical Science</i>	4.PS.4.1	C. Evidence, Reasoning, and Modeling	SR	Describe the transfer of energy and regular pattern of motion that occurs as a wave travels.	Part A: see page 6 Part B: A
13	<i>Earth and Space Science</i>	5.ESS.3.2	A. Investigations and Questioning	SR	Describe a change to improve a water filter design.	B
14	<i>Life Science</i>	3.LS.3.1	A. Investigations and Questioning	SR	Determine which scientific question can be answered by interpreting a model showing certain traits of parents and their offspring.	D
15	<i>Life Science</i>	3.LS.1.1	C. Evidence, Reasoning, and Modeling	SR	Compare life cycle models of a plant and an animal to describe a common characteristic.	D
16	<i>Life Science</i>	3.LS.4.1	C. Evidence, Reasoning, and Modeling	SR	Explain why a fossil of a marine organism may be found in a desert.	D
17	<i>Earth and Space Science</i>	5.ESS.1.1	None	SR	Explain why the Sun appears brighter than other stars.	B
18	<i>Life Science</i>	5.PS.3.1	C. Evidence, Reasoning, and Modeling	SR	Describe one way energy moves through a food web and describe how consumers use this energy.	see page 6
19	<i>Life Science</i>	3.LS.4.4	None	SR	Describe an environmental condition that leads to a change in an animal's behavior.	A
20	<i>Life Science</i>	5.LS.1.1	A. Investigations and Questioning	SR	Determine the next step in an investigation about the plant structures in which photosynthesis takes place.	B

* STE item types are selected-response (SR) and constructed-response (CR).

** Answers are provided here for selected-response items only. Page 6 of this document provides correct answers for technology-enhanced (TE) items. Sample responses and scoring guidelines for constructed-response items will be posted at www.doe.mass.edu/mcas/student/default.html.

**Grade 5 Science and Technology/Engineering
Spring 2026 Unreleased Operational Items**

CBT Item No.	Reporting Category	Standard	Science and Engineering Practice Category	Item Type*	Item Description
21	<i>Physical Science</i>	4.PS.4.2	C. Evidence, Reasoning, and Modeling	SR	Use a model to describe how light travels so that an object can be seen by the eye.
22	<i>Earth and Space Science</i>	4.ESS.2.1	C. Evidence, Reasoning, and Modeling	SR	Describe how tree root wedging affects a rock.
23	<i>Life Science</i>	5.LS.2.1	C. Evidence, Reasoning, and Modeling	SR	Complete a model to classify organisms as producers, consumers, and decomposers.
24	<i>Life Science</i>	3.LS.1.1	C. Evidence, Reasoning, and Modeling	SR	Determine which stage in a plant's life cycle is most similar to a hatching egg in a bird's life cycle.
25	<i>Life Science</i>	4.LS.1.1	C. Evidence, Reasoning, and Modeling	SR	Determine which two characteristics of a bird's beak are most important for helping it to eat food.
26	<i>Life Science</i>	5.PS.3.1	C. Evidence, Reasoning, and Modeling	CR	Complete a model to show how energy moves through an ecosystem, explain one reason why a plant needs energy, and describe what would most likely happen to the size of an animal population in the ecosystem when an area of plants is removed.
27	<i>Life Science</i>	5.LS.2.2	None	SR	Describe the effect of adding more bacteria to a compost.
28	<i>Technology/Engineering</i>	3.ETS.1.4	None	SR	Determine the representation of a design solution that would best help choose the design.
29	<i>Earth and Space Science</i>	5.ESS.2.2	B. Mathematics and Data	SR	Interpret a circle graph to make conclusions about the relative amounts of salt water and fresh water in different water sources.
30	<i>Technology/Engineering</i>	3.ETS.1.1	A. Investigations and Questioning	SR	Define a design problem that a student was most likely trying to solve by changing the design of a toy car.
31	<i>Physical Science</i>	4.PS.3.4	C. Evidence, Reasoning, and Modeling	SR	Use data from an investigation to explain what happens when additional batteries are added to a circuit.
32	<i>Technology/Engineering</i>	3.ESS.3.1	B. Mathematics and Data	SR	Using information from a table, explain why one type of material is a better choice to reduce the damage caused by weather.

33	<i>Technology/ Engineering</i>	4.PS.4.3	C. Evidence, Reasoning, and Modeling	SR	Identify the step in the transfer of information that is modeled in a video.
34	<i>Technology/ Engineering</i>	3.ETS.1.4	C. Evidence, Reasoning, and Modeling	SR	Compare different representations of a design to determine the benefits and drawbacks of using the representations in certain situations.
35	<i>Physical Science</i>	4.PS.3.1	B. Mathematics and Data	SR	Use information in a table to order a car's kinetic energy during a trip from least to greatest.
36	<i>Physical Science</i>	3.PS.2.4	C. Evidence, Reasoning, and Modeling	CR	Identify which diagrams show how magnets could be placed to keep a box closed and explain the reasoning.
37	<i>Physical Science</i>	5.PS.1.4	C. Evidence, Reasoning, and Modeling	SR	Identify evidence of a chemical reaction in an investigation.
38	<i>Earth and Space Science</i>	5.ESS.3.1	None	CR	Describe several different ways a school community could help the environment.
39	<i>Earth and Space Science</i>	4.ESS.1.1	None	SR	Determine that weathering and erosion played a role in the formation of a landscape.
40	<i>Physical Science</i>	5.PS.1.1	C. Evidence, Reasoning, and Modeling	SR	Describe how wax in a candle changed states of matter from when it was lit to after it was blown out.
41	<i>Earth and Space Science</i>	4.ESS.3.1	None	SR	Identify evidence to support a claim that river water is a renewable source of energy.

* STE item types are: selected-response (SR) and constructed-response (CR).

Correct Answer for CBT Item #3: Technology-Enhanced Item

Climate Region	Condition	Jan.	Mar.	May	July	Sept.	Nov.
Tropical Rainforest	Average Temperature (°F)	77	79	85	84	84	81
	Average Precipitation (in.)	4.9	2.0	3.9	8.3	9.8	7.8
Arctic Tundra	Average Temperature (°F)	-40	-20	8	18	6	-29
	Average Precipitation (in.)	0.0	0.0	0.4	1.2	0.8	0.4

Correct Answer for CBT Item #12: Technology-Enhanced Item

Part A

The wave is created when is transferred from the .

Correct Answer for CBT Item #18: Technology-Enhanced Item

Part A

Energy originally from the is first used by the , then passed to the , and then to the .

or

Energy originally from the is first used by the , then passed to the , and then to the .

Part B

Consumers in this ecosystem use energy to and .