

MCAS Grade 5 Science and Technology/Engineering (STE) Practice Test Answer Key

The MCAS grade 5 Science and Technology/Engineering (STE) practice test is made of performance tasks reflecting the revised test design that will become operational in spring 2027. More information about the STE performance tasks can be found on the [MCAS Grades 5 and 8 Science and Technology/Engineering \(STE\) Transition](#) page.

Practice Performance Task 1

Item Number	Reporting Category	Standard	Science and Engineering Practice Category	Item Type*	Max Points	Correct Answer**
1	<i>Earth & Space Science</i>	5.ESS.2.1	None	SR	1	D,E
2	<i>Life Science</i>	5.LS.2.1	C. Evidence, Reasoning, and Modeling	SR	1	see page 3
3	<i>Life Science</i>	5.LS.1.1	C. Evidence, Reasoning, and Modeling	SR	1	D
4	<i>Physical Science</i>	5.PS.1.3	C. Evidence, Reasoning, and Modeling	SR	1	see page 3
5	<i>Life Science</i>	5.LS.2.1	B. Mathematics and Data	SR	2	see page 3
6	<i>Life Science</i>	5.LS.2.1	B. Mathematics and Data	SR	1	see page 3
7	<i>Life Science</i>	3.LS.1.1	C. Evidence, Reasoning, and Modeling	SR	1	D
8	<i>Life Science</i>	3.LS.4.4	C. Evidence, Reasoning, and Modeling	CR	3	see page 5

Practice Performance Task 2

Item Number	Reporting Category	Standard	Science and Engineering Practice Category	Item Type*	Max Points	Correct Answer**
9	<i>Earth & Space Science</i>	5.ESS.2.1	C. Evidence, Reasoning, and Modeling	SR	1	D
10	<i>Physical Science</i>	5.PS.2.1	None	SR	1	D
11	<i>Life Science</i>	4.LS.1.1	C. Evidence, Reasoning, and Modeling	SR	1	A
12	<i>Life Science</i>	5.LS.2.1	C. Evidence, Reasoning, and Modeling	SR	2	see page 3
13	<i>Life Science</i>	4.LS.1.1	None	SR	1	B,E
14	<i>Life Science</i>	5.PS.1.3	C. Evidence, Reasoning, and Modeling	SR	1	B
15	<i>Earth & Space Science</i>	4.ESS.2.1	C. Evidence, Reasoning, and Modeling	SR	1	see page 4
16	<i>Technology & Engineering</i>	3.ETS.1.2	A. Investigations and Questioning	CR	3	see page 6

Practice Performance Task 3

Item Number	Reporting Category	Standard	Science and Engineering Practice Category	Item Type*	Max Points	Correct Answer**
17	<i>Earth & Space Science</i>	4.ESS.3.1	C. Evidence, Reasoning, and Modeling	SR	1	A
18	<i>Earth & Space Science</i>	5.ESS.2.2	C. Evidence, Reasoning, and Modeling	SR	1	<i>see page 4</i>
19	<i>Physical Science</i>	5.PS.1.4	C. Evidence, Reasoning, and Modeling	SR	1	<i>see page 4</i>
20	<i>Technology & Engineering</i>	4.ETS.1.3	C. Evidence, Reasoning, and Modeling	SR	1	C
21	<i>Physical Science</i>	5.PS.1.2	A. Investigations and Questioning	SR	1	D
22	<i>Physical Science</i>	5.PS.1.1	C. Evidence, Reasoning, and Modeling	SR	2	Part A: <i>see page 4</i> Part B: D
23	<i>Life Science</i>	5.PS.3.1	C. Evidence, Reasoning, and Modeling	SR	1	<i>see page 4</i>
24	<i>Life Science</i>	4.LS.1.1	C. Evidence, Reasoning, and Modeling	CR	3	<i>see pages 7–8</i>

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

** Pages 3 and 4 of this document provide correct answers for technology-enhanced items and pages 5–8 provide sample student responses for constructed-response items.

Correct Answer for Item #2

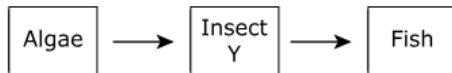
The fungi are

This is supported by the observation that the leaves are

Correct Answer for Item #4

A property of the rock that **most** helped to keep the mesh bag in place is the rock's

Correct Answer for Item #5 Part A



Correct Answer for Item #5 Part B

Organisms	Consumer	Producer
algae	☐	☒
insects	☒	☐
fish	☒	☐

Correct Answer for Item #6

Leaves in the mesh bags would break down the most in when there are sunny days.

The matter from the leaves in the ecosystem.

Correct Answer for Item #12 Part A

The plants in the lake ecosystem are and the snapping turtles are

Correct Answer for Item #12 Part B

A decrease in the number of largemouth bass would cause the number of golden shiners to

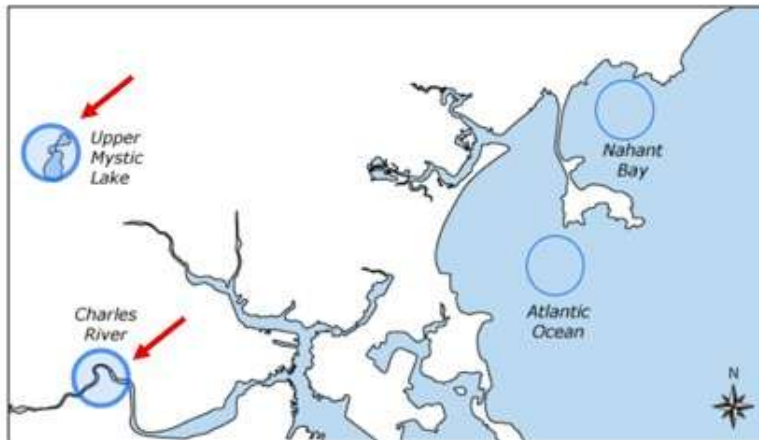
This would cause plants to be eaten.

Correct Answer for Item #15

The water reaching the lake during a heavy rainfall is more muddy than it is during a light rainfall.

This is evidence that there is more erosion occurring during a heavy rainfall.

Correct Answer for Item #18



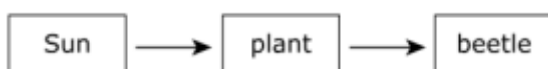
Correct Answer for Item #19

Observation	Evidence of a Mixture	Evidence of a Chemical Reaction
Temperature increases.	☐	☒
Bubbles form in the liquid.	☐	☒
The two substances can be easily separated.	☒	☐

Correct Answer for Item #22 Part A

The factor that caused the most fresh water to be collected is sunny skies because more energy is added to the device compared with the other factors.

Correct Answer for Item #23



Sample Student Responses for Constructed-Response Items

Item 8 Sample Student Work and Scoring Guide

Scoring Guide

Score	Description
3	The response demonstrates a thorough understanding of how changes in a habitat may affect the ability of organisms to survive and reproduce. The response correctly identifies whether an insect population would increase, decrease, or stay the same if there were fewer trees near the river and clearly explains the reasoning. The response also correctly identifies whether the fish population would most likely increase or decrease and clearly provides two reasons why the fish population would be affected.
2	The response demonstrates a partial understanding of how changes in a habitat may affect the ability of organisms to survive and reproduce.
1	The response demonstrates a minimal understanding of how changes in a habitat may affect the ability of organisms to survive and reproduce.
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.

Score Point 3

Part	Student Response
A	Insect X would be affected. The population would decrease. They eat leaves and if there are fewer leaves they would have less food.
B	The population of fish would decrease because there are less insects which are food for the fish. Also building a parking lot next to the river will probably make lots of trash and dirt fall into the water which will hurt the fish.

Score Point 2

Part	Student Response
A	The population of insect Y will increase. There will be more sunlight so algae will grow and insect Y eats algae.
B	There will be fewer fish because there will be less shade and the water will get hot.

Score Point 1

Part	Student Response
A	Increase because fewer leaves
B	Decrease. there won't be as many insects for fish to eat

Score Point 0

Part	Student Response
A	insect X
B	decrease

Item 16 Sample Student Work and Scoring Guide

Scoring Guide

Score	Description
3	The response demonstrates a thorough understanding of comparing solutions to a problem based on criteria and constraints. The response correctly identifies if a claim is correct and clearly explains the reasoning. The response correctly identifies the design that best meets the given criteria and clearly explains the reasoning. The response also clearly describes a constraint that will most likely need to be considered in the design.
2	The response demonstrates a partial understanding of comparing solutions to a problem based on criteria and constraints.
1	The response demonstrates a minimal understanding of comparing solutions to a problem based on criteria and constraints.
0	The response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.

Score Point 3

Part	Student Response
A	Yes, the rainfall variable should be constant if we want to test the barrier design. Having different amounts of rainfall may give different results and you wouldn't be able to tell which design is better.
B	Design Z meets both criteria. It only uses 3 barriers and is a level 1 muddiness in light rain. Design X is a level 2 muddiness and Design Y uses 4 barriers.
C	They may need to build the barriers in a certain amount of time

Score Point 2

Part	Student Response
A	They are correct because in a fair test only one variable changes.
B	Design Z because it has the least mud with only 3 barriers. The others had more mud or more barriers.
C	Preventing mud and soil from going into the lake.

Score Point 1

Part	Student Response
A	The student is correct because that is a good plan
B	Design Y is good cause not a lot of mud went into the lake
C	Cost. They only have so much money.

Score Point 0

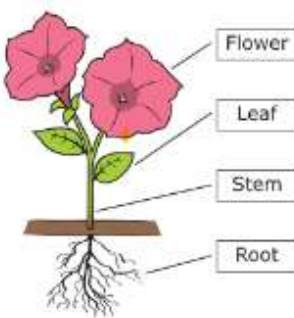
Part	Student Response
A	Rain makes the mud go into the lake
B	Design Z is best
C	rainfall

Item 24 Sample Student Work and Scoring Guide

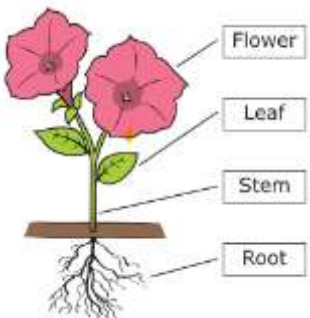
Scoring Guide

Score	Description
3	The response demonstrates a thorough understanding that plants have internal and external structures that support their survival. The response correctly completes a model of plant structures. The response correctly identifies the main process that occurs in a plant's leaves that uses water and clearly explains how this process is important to a plant's survival. The response also correctly identifies if a claim about plant stems is correct and clearly explains the reasoning.
2	The response demonstrates a partial understanding the plants have internal and external structures that support their survival.
1	The response demonstrates a minimal understanding that plants have internal and external structures that support their survival.
0	The response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.

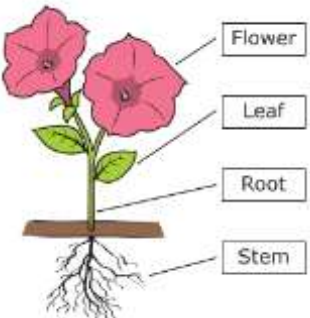
Score Point 3

Part	Student Response
A	
B	The process that occurs in the leaves is photosynthesis. This is when water and air and sunlight are made into food for the plant. Plants need food to survive.
C	The claim is incorrect. Without a stem the plant would die. The stem moves water from the roots to the leaves and flowers.

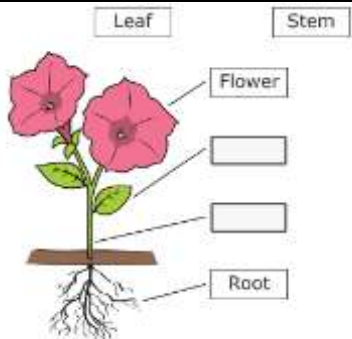
Score Point 2

Part	Student Response
A	 The diagram shows a plant with two pink flowers, green leaves, a central stem, and a root system. Labels with leader lines point to each part: Flower, Leaf, Stem, and Root.
B	Leaves need water and sun.
C	The stem is important because it supports the flower and leaves so the plant stands up to get sunlight.

Score Point 1

Part	Student Response
A	 The diagram shows a plant with two pink flowers, green leaves, a central stem, and a root system. Labels with leader lines point to each part: Flower, Leaf, Root, and Stem.
B	The process is making food in the leaves. Plants need energy from food to grow.
C	The claim is correct. Stems dont help plants survive

Score Point 0

Part	Student Response
A	 The diagram shows a plant with two pink flowers, green leaves, a central stem, and a root system. Labels with leader lines point to each part: Leaf, Stem, Flower, and Root. There are also two empty boxes with leader lines pointing to the leaves and the stem.
B	Roots get water for the plant
C	Flowers make seeds