

## 2026 MCAS Sample Student Work and Scoring Guide

### Grade 5 Science and Technology/Engineering

#### Question 7: Constructed-Response

**Reporting Category:** Technology/Engineering

**Practice Category:** Investigations and Questioning

**Standard:** [4.ETS.1.5](#) Evaluate relevant design features that must be considered in building a model or prototype of a solution to a given design problem.

**Item Description:** Describe the main purpose of a prototype and use information about a design problem to describe two criteria the prototype must meet.

This item can be found in the released item sets on the [MCAS Resource Center](#).

#### Scoring Guide

Select a score point in the table below to view the sample student response.

| Score*                                   | Description                                                                                                                                                                                                                                                                                                                                                 |
|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#">3A</a><br><a href="#">3B</a> | The response demonstrates a thorough understanding of how to evaluate the relevant design features that must be considered in building a prototype for a given design problem. The response clearly describes the main purpose of the prototype. The response also clearly describes two criteria that the prototype must meet to be considered successful. |
| <a href="#">2</a>                        | The response demonstrates a partial understanding of how to evaluate the relevant design features that must be considered in building a prototype for a given design problem.                                                                                                                                                                               |
| <a href="#">1</a>                        | The response demonstrates a minimal understanding of how to evaluate the relevant design features that must be considered in building a prototype for a given design problem.                                                                                                                                                                               |
| <a href="#">0</a>                        | The response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.                                                                                                                                                                                                                                          |

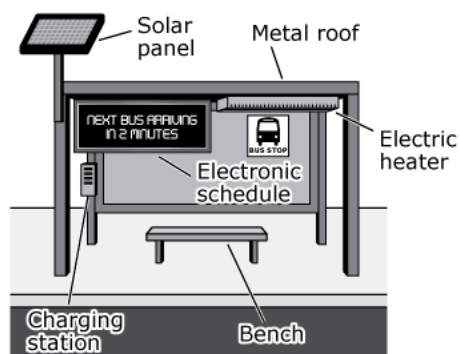
\*Letters are used to distinguish between sample student responses that earned the same score (e.g., 3A and 3B).

### Module Introduction

The mayor of a city wants to make bus stops more convenient and comfortable so that more people will use the city buses. Currently, each bus stop only has a sign and a bus schedule that estimates when buses will arrive at the bus stop. The mayor plans to add several features to the city's bus stops, as listed in the table.

| Bus Stop Feature                    | How the Feature Improves Waiting           | Cost to Buy and Set Up |
|-------------------------------------|--------------------------------------------|------------------------|
| electric heater                     | warms people in the winter                 | \$19,000               |
| metal bench                         | people can sit down                        | \$500                  |
| shelter with metal roof and columns | protects people from the weather           | \$2,200                |
| solar panel                         | generates electricity for bus stop         | \$5,000                |
| solar-powered charging station      | charges cell phones and electronic devices | \$5,000                |
| solar-powered electronic schedule   | shows in real time when buses will arrive  | \$3,500                |

The diagram shows a bus stop with the features listed in the table.



**Score Point 3A**

The following question has two parts.

City engineers built a prototype of the new bus stop with the features listed in the table.

**Part A**

Describe the main purpose of the prototype.

The main purpose of the prototype is for looking if the bus stop is working correctly, and also for it to see if there are places to improve.

**Part B**

The bus stop prototype is installed and people begin to use it.

Based on the information, describe **two** criteria that the prototype must meet to be considered successful.

One of the criteria that the prototype must meet to be considered successful is how if it made people want to use the bus stop more, compared to the old one.

Another criteria for the prototype to be successful is if there would be enough electricity for the electronic features to actually work.

[Back to Scoring Guide](#)

**Score Point 3B**

The following question has two parts.

City engineers built a prototype of the new bus stop with the features listed in the table.

**Part A**

Describe the main purpose of the prototype.

The main purpose of the prototype is to test all the features of the new bus stop to make sure they function properly.

**Part B**

The bus stop prototype is installed and people begin to use it.

Based on the information, describe **two** criteria that the prototype must meet to be considered successful.

Two criteria that the prototype must meet to be considered successful are that the solar panel must generate electricity for the bus stop and the electric heater will warm people in the winter. These criteria must be met for the prototype to be successful because these features from the table improve waiting at the bus stop.

[Back to Scoring Guide](#)

**Score Point 2**

The following question has two parts.

City engineers built a prototype of the new bus stop with the features listed in the table.

**Part A**

Describe the main purpose of the prototype.

To make bus stops more convenient and comfortable so that more people will use the city buses.

**Part B**

The bus stop prototype is installed and people begin to use it.

Based on the information, describe **two** criteria that the prototype must meet to be considered successful.

The electronic schedule must work and tell when the next bus is coming and the electric heater must keep the people that are waiting for the bus warm.

[Back to Scoring Guide](#)

**Score Point 1**

The following question has two parts.

City engineers built a prototype of the new bus stop with the features listed in the table.

**Part A**

Describe the main purpose of the prototype.

The main purpose of the prototype is to see if their ideas work or if they have to change anything about their design before they make a real version of it.

**Part B**

The bus stop prototype is installed and people begin to use it.

Based on the information, describe **two** criteria that the prototype must meet to be considered successful.

Solar power and metal roof and metal bench

[Back to Scoring Guide](#)

**Score Point 0**

The following question has two parts.

City engineers built a prototype of the new bus stop with the features listed in the table.

**Part A**

Describe the main purpose of the prototype.

For people to wait for a bus.

**Part B**

The bus stop prototype is installed and people begin to use it.

Based on the information, describe **two** criteria that the prototype must meet to be considered successful.

The electric heater and the solar panel.

[Back to Scoring Guide](#)