



# Short Constructed-Response Scoring Guide

Spring 2024

## General Information

Beginning with the 2022–2023 school year, science assessments include short constructed-response questions at every assessed grade level. Students are asked to provide a short response **R** e s p o

## Biology Short Constructed Response

### Prompt

In animal cells, the sodium-potassium pump moves sodium and potassium ions against a concentration gradient across the cell membrane.

What type of transport is used, AND why is this type of transport necessary?

Read the question carefully. Then enter your answers in the box provided.

### Item-Specific Rubric

Score: 2

The response provides complete and correct understanding:

Identifies the type of transport used across the cell membrane.

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AND

Explains why this type of transport is necessary.

Score: 1

The student answers half of the question correctly. The response provides partial understanding.

Score: 0

The response is incorrect or irrelevant. The response provides little to no understanding.

## Sample Student Responses

### Score Point 0

#### Response 1

Osmosis is used because it is active transport and active transport is used to move molecules against the gradient.

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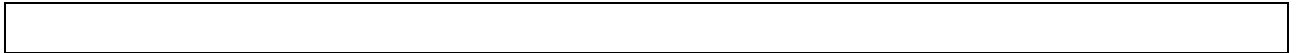
## Biology

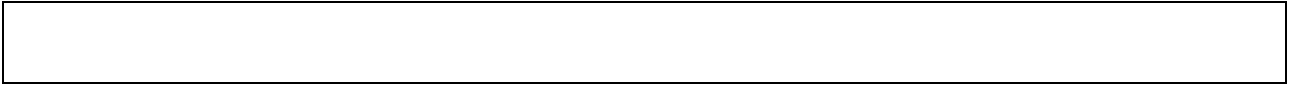
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## Biology Short Constructed Response

### Prompt

Ecological relationships occur between two species that live close to each other. Two examples of ecological relationships are described.

Example 1: Bees gather nectar and pollen from flowering plants, providing food for the bees. As the bees move to different flowers, some of the pollen attached to the bees' bodies is spread and released. If the pollen falls on the flower of a plant of the same species, it may fertilize the plant and produce seeds.

Example 2: Orchids are flowering plants that grow on other plants. They typically grow in tall trees high in the canopy, where they can reach sunlight for photosynthesis. They get water and nutrients from rainwater runoff that carries organic material down the host plant's branches. No water or nutrients are taken from the host plant.

What is the main difference between the ecological relationships described in the two examples? Include the scientific term used to define each of the relationships.

Think about the question carefully. Then enter your answer in the box provided.

## Item-Specific Rubric

Score: 2

The response provides complete and correct understanding:

Explains the main difference between the ecological relationships described in the two examples.

AND

Includes the scientific term used to define each of the two relationships:

- Example 1: bees and flowering plants—mutualism
- Example 2: orchards and tall trees—commensalism

Score: 1

The student answers half of the question correctly. The response provides partial understanding:

The student correctly identifies and explains one of the two relationships.

Note: Using the same scientific term (t)-2 (l)-s I se try (t)-2 (l)-s nIThusx9(t)-2al

## Sample Student Responses

### Score Point 0

#### Response 1

The first example is commensalism because both gain from the relationship while in the second example the orchids are the only ones that gain but due to them not hurting the tree that they are attached to it would be mutualism

The response is incorrect or irrelevant and demonstrates little to no understanding. It includes neither of the required elements.

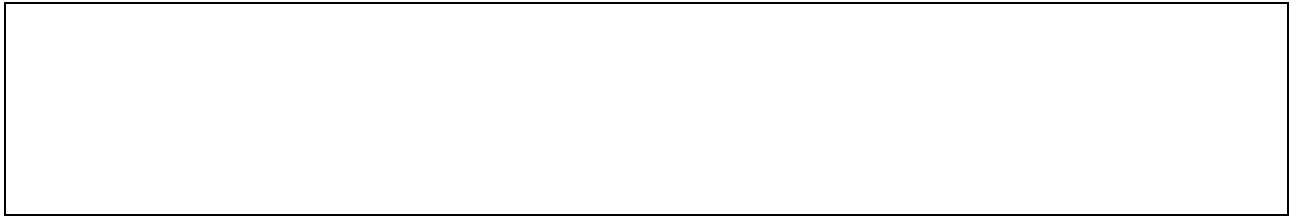
The response incorrectly identifies Example 1 as commensalism and provides an incorrect explanation of the ecological relationship for commensalism ("first example is commensalism because both gain from the relationship"). Providing the incorrect ecological relationship for the scientific term used to identify the relationship demonstrates no understanding.

The response incorrectly identifies Example 2 as mutualism and provides an incorrect explanation of the ecological relationship for mutualism ("in the second example the orchids are the only ones that gain but due to them not hurting the tree that they are attached to it would be mutualism"). Providing the incorrect ecological relationship for the scientific term used to identify the relationship demonstrates no understanding.

#### Response 2

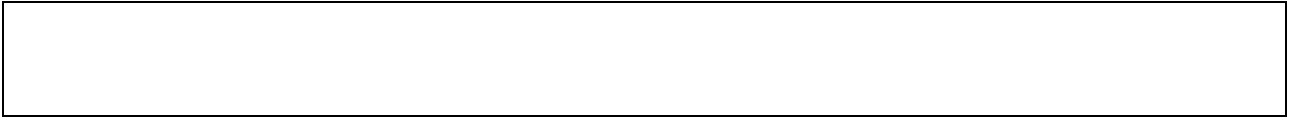
in the first example the bees are taking pollen from the flowering plants therefore taking nutrients from it unlike the bee in example 1 the orchid is not taking any nutrients from the tree that is the main difference

The response is incorrect or irrelevant and demonstrates little to no understanding. It includes neither of the required elements.



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## Score Point 2

### Response 1

The main difference between the ecological relationships described in the two examples is that the relationship in example 1 is mutualism while the relationship in example 2 is commensalism. In example 1 the relationship is mutualism because both species benefit from the interaction, the bees obtain food while the plants receive assistance pollinating. Meanwhile, example 2 is commensalism because one organism benefits while the other is unaffected. In this case the Orchid gets water and nutrients from rainwater runoff while the host plant is unaffected.

The response demonstrates complete and correct understanding. It includes each of the two required elements: correctly explains the main difference between the ecological

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Response 3

The first relationship is mutualism which means that both organisms benefit from their relationship, and the second relationship is commensalism which means that one organism benefits from the relationship and the other is not harmed.

The response demonstrates complete and correct understanding. It includes each of the two required elements: correctly explains the main difference between the ecological relationships described in the two examples AND correctly includes the scientific term used to define each relationship.

Correctly identifies Example 1 as mutualism and provides an explanation of the ecological relationship to contrast the difference with Example 2 ("first relationship is mutualism which means that both organisms benefit from their relationship").

Correctly identifies Example 2 as commensalism and provides an explanation of the ecological relationship to contrast the difference with Example 1 ("second relationship is commensalism which means that one organism benefits from the relationship and the other is not harmed"). When describing commensalism, note that a full definition provides that one organism benefits, but that the host neither benefits nor is harmed; the host is unaffected.

Response 4

In example one they both benefit (mutualism) where in example 2 only one benefits (commensalism)

The response demonstrates complete and correct understanding. It includes each of the two required elements: correctly explains the main difference between the ecological relationships described in the two examples AND correctly includes the scientific term used to define each relationship.

Correctly identifies Example 1 as mutualism and provides an explanation of the ecological relationship to contrast the difference with Example 2 ("In example one they both benefit [mutualism]"). A minimal but sufficient explanation is provided to explain that both organisms benefit in this relationship.

Correctly identifies Example 2 as commensalism and provides an explanation of the ecological relationship to contrast the difference with Example 1 ("in example 2 only one benefits [commensalism]"). Note that the explanation /Body & MCID 13 BD /TT01 Tf-10.00 (21)-3 0