State of Texas Assessments of Academic Readiness

Biology

Short Constructed-Response Scoring Guide

Spring 2026

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 to a question. Responses are scored using a prompt-specific, two-point rubric.

This State of Texas Assessments of Academic Readiness (STAAR®) constructed-response scoring guide provides student exemplars at all score points for constructed-response questions from the STAAR Biology operational test. The questions are presented as they appeared on the test, and responses were scored based on the two-point rubrics that were developed with the input of Texas educators. A response earns a specific score point based on the completeness of the response provided as measured against the rubric.

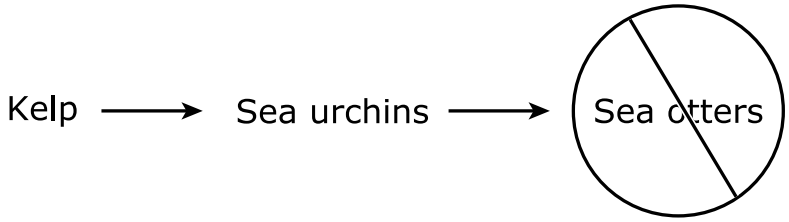
The responses in this guide are actual student responses submitted online during the testing window. To protect the privacy of individual students, all names and other references of a personal nature have been altered or removed. Otherwise, the responses appear as the students wrote them and have not been modified.

Biology Short Constructed Response

Prompt

The sea otter is a keystone species in the eastern Pacific Ocean, responsible for maintaining ecosystem health. In California's Monterey Bay, healthy sea otter populations are linked to lush, productive kelp forests. Sea urchins are the primary prey of sea otters, and the urchins feed on the kelp.

A food chain with the removal of sea otters in Monterey Bay is shown.



Explain how the removal of sea otters would **MOST LIKELY** affect the stability of the Monterey Bay ecosystem based on how sea urchins would affect kelp forests.

Think about the information carefully. Then enter your response in the box provided.

Item-Specific Rubric

Score: 2

The ecosystem would become less stable because sea urchins would consume much more of the kelp forests.

Score: 1

The ecosystem would become less stable.

OR

Sea urchins would consume much more of the kelp forests.

Score: 0

The response is incorrect or irrelevant.

Sample Student Responses

Score Point 0

Response 1

the removal of sea ottters would most likely affect the stability of the Monterey Bay ecosystem by having a bigger population of sea urchins because there wouldn't be any sea otters to eat the sea urchins.

The response does not explain how the removal of sea otters would most likely affect ecosystem stability. Stability is mentioned but not addressed.

The response does not explain how sea urchins affect kelp forests. The increase in sea urchin population is discussed, but kelp forests are not addressed.

Response 2

Increased population in kelp and sea urchins

The response does not address the impact the removal of sea otters would have on the stability of the ecosystem.

The response incorrectly addresses how sea urchins affect the kelp forests ("Increased population in kelp").

Response 3

The removal of sea otters wouldnt affect nothing because they were the ones feeding off sea urchins

The response does not address the impact the removal of sea otters would have on the stability of the ecosystem.

The response incorrectly addresses how sea urchins affect the kelp forests ("wouldnt affect nothing").

Response 4

Sea urchins would affect kelp forests by feeding in the kelp.

The response does not explain how the removal of sea otters would most likely affect ecosystem stability. Stability is not addressed.

The response does not explain how sea urchins affect kelp forests. It is insufficient ("Sea urchins would affect kelp forests by feeding in the kelp"). Sea urchins feed on the kelp both before and after the removal of sea otters. The increase in kelp consumption, which happens afterward, is not addressed.

Score Point 1

Response 1

> The removal of sea ottters will mess up the ecosystem because once the sea otters leave th esea urchins will over popluation.

The response explains how the removal of sea otters would most likely affect ecosystem stability ("sea ottters will mess up the ecosystem").

The response does not address how sea urchins affect kelp forests.

Response 2

> The removal of sea atters will affect the stability of the Monterey Bay ecosystem negativly because the absents of otters in the area will cause sea urchins to reproduce and overpopulate the kelp forest.

The response explains how the removal of sea otters would most likely affect ecosystem stability ("The removal of sea atters will affect the stability of the Monterey Bay ecosystem negativly").

The response does not explain how sea urchins affect kelp forests. Although the response indicates that the sea urchin population overpopulates the kelp forest, it does not discuss how this affects the kelp population.

Response 3

> The removal of sea otters from the Monterey Bay ecosystem would most likely decrease the amount of kelp in the ecosystem. This is because the sea urcnins eat the kelp, and if there are no sea otters to eat the sea urchins then the sea urchin population will increase causing more kelp to be consumed, and subsequently less kelp in the ecosystem.

The response does not address how the removal of sea otters would most likely affect ecosystem stability.

The response explains how sea urchins affect kelp forests ("would most likely decrease the amount of kelp in the ecosystem").

Response 4

If sea otters were to be removed from the ecosystem, the the population of sea urchins would increase overtime, and since there would be more sea urchins, the kelp in the kelp forest would rapidly decrease.

The response does not address how the removal of sea otters would most likely affect ecosystem stability.

The response explains how sea urchins affect kelp forests (“the kelp in the kelp forest would rapidly decrease”).

Score Point 2

Response 1

> If sea otters were removed from the Monterey Bay ecosystem, it is likely that the population of sea urchins would significantly increase, and the kelp forest population would decrease. This would destabilize the Monterey Bay ecosystem.

The response explains how the removal of sea otters would most likely affect ecosystem stability ("This would destabilize the Monterey Bay ecosystem").

The response explains how sea urchins affect kelp forests ("the kelp forest population would decrease").

Response 2

> The removal of Sea otters would decrease the stability of the ecosystem because there would be no one preying on the Sea urchins. Sea urchins feed on Kelp forests but without Sea otters the Sea urchins will reproduce rapidly, not giving the kelp forest enough time to reproduce themseleves.

The response explains how the removal of sea otters would most likely affect ecosystem stability ("The removal of Sea otters would decrease the stability of the ecosystem").

The response explains how sea urchins affect kelp forests ("Sea urchins feed on Kelp forests but without Sea otters the Sea urchins will reproduce rapidly, not giving the kelp forest enough time to reproduce"). The language explaining that the kelp forest does not have enough time to reproduce indicates the population is declining.

Response 3

> The removal of sea otters would most likely affect the stability of the Monterey Bay ecosystem negatively. Sea otters feed on sea urchins, which feed on kelp forests. Without sea otters to feed on sea urchins, the sea urchin population is likely to increase and consume too much kelp, reducing the productivity and stability of the ecosystem.

The response explains how the removal of sea otters would most likely affect ecosystem stability ("The removal of sea otters would most likely affect the stability of the Monterey Bay ecosystem negatively").

The response explains how sea urchins affect kelp forests ("the sea urchin population is likely to increase and consume too much kelp").

Response 4

The stability of the Monterey Bay ecosystem would be decreased, due to excess consumption of kelp forests by the sea urchins, and that fact that there are no sea otters to control urchin population. The sea urchin population will grow rapidly and continue feeding on kelp.

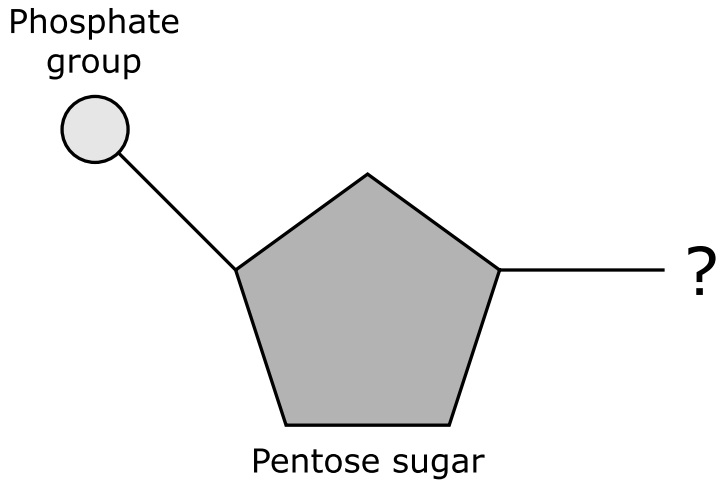
The response explains how the removal of sea otters would most likely affect ecosystem stability ("would be decreased").

The response explains how sea urchins affect kelp forests ("excess consumption of kelp forests. . . . The sea urchin population will grow rapidly and continue feeding on kelp").

Biology Short Constructed Response

Prompt

A DNA nucleotide has three components. This model of a nucleotide is missing one of these components.



Identify the missing nucleotide component, **AND** explain the significance of this component in determining the traits of an organism.

Read the information carefully. Then enter your response in the box provided.

Item-Specific Rubric

Rubric

Score: 2

Identifies the missing nucleotide component as the nitrogenous base.

AND

The sequence of the nitrogenous bases in a DNA molecule (adenine, cytosine, guanine, thymine) determines the traits of an organism.

Score: 1

Identifies the missing nucleotide component as the Nitrogenous base.

OR

The sequence of the nitrogenous bases in a DNA molecule (adenine, cytosine, guanine, thymine) determines the traits of an organism.

Score: 0

The response is incorrect or irrelevant.

Sample Student Responses

Score Point 0

Response 1

Another phosphate group. It is significant because it needs two to survive.

The response does not identify the missing nucleotide component as the nitrogenous base (“Another phosphate group”).

The response does not provide a correct explanation that the significance of this component is its sequence that determines the traits of an organism (“It is significant because it needs two to survive”).

Response 2

The missing nucleotide component is the amino acid, which codes for proteins.

The response does not identify the missing nucleotide component as the nitrogenous base (“The missing nucleotide component is the amino acid”).

The response does not provide a correct explanation that the significance of this component is its sequence that determines the traits of an organism (“which codes for proteins”).

Response 3

This DNA Nucleotide is missing the hydrogen base, this base is important because it links up with another base to create a gene, and the gene connects with other genes to make DNA strands.

The response does not identify the missing nucleotide component as the nitrogenous base (“This DNA Nucleotide is missing the hydrogen base”).

The response does not provide a correct explanation that the significance of this component is its sequence that determines the traits of an organism (“this base is important because it links up with another base to create a gene, and the gene connects with other genes to make DNA strands”).

Response 4

I believe that the missing component of the nucleotide would be the genetic information. The genetic information is essential because without it the cell would not be able to reproduce.

The response does not identify the missing nucleotide component as the nitrogenous base ("I believe that the missing component of the nucleotide would be the genetic information").

The response does not provide a correct explanation that the significance of this component is its sequence that determines the traits of an organism ("The genetic information is essential because without it the cell would not be able to reproduce").

Score Point 1

Response 1

The missing nucleotide component is the base, the significance of this component in determining the traits of an organism by needing the 3 components together to determine the trait in a DNA.

The response correctly identifies the missing nucleotide component as the nitrogenous base (“The missing nucleotide component is the base”).

The response does not provide a correct explanation that the significance of this component is its sequence that determines the traits of an organism (“the significance of this component in determining the traits of an organism by needing the 3 components together to determine the trait in a DNA”).

Response 2

The one missing component of the nucleotide is the nitrogenous bond which determines the charateristics of each organism depending on its sequence allowing everyone to be unqiue in their own way.

The response does not identify the missing nucleotide component as the nitrogenous base (“The one missing component of the nucleotide is the nitrogenous bond”).

The response provides a correct explanation that the significance of this component is its sequence that determines the traits of an organism (“which determines the charateristics of each organism depending on its sequence allowing everyone to be unqiue in their own way”).

Response 3

The missing nucleotide component is the nitrogen base and this significance of this component in determining the traits of an organism is creating different genotypes and phenotypes.

The response correctly identifies the missing nucleotide component as the nitrogenous base (“The missing nucleotide component is the nitrogen base”).

The response does not provide a correct explanation that the significance of this component is its sequence that determines the traits of an organism (“this significance of this component in determining the traits of an organism is creating different genotypes and phenotypes”).

Response 4

the missing component is nitrogen, the significance of this component in determining the traits of an organism have to do with its combinantion and order

The response does not identify the missing nucleotide component as the nitrogenous base (“the missing component is nitrogen”).

The response provides a correct explanation that the significance of this component is its sequence that determines the traits of an organism (“the significance of this component in determining the traits of an organism have to do with its combinantion and order”).

Score Point 2

Response 1

The missing nucleotide component is the nitrogen base and its order determine the traits of an organism.

The response correctly identifies the missing nucleotide component as the nitrogenous base (“The missing nucleotide component is the nitrogen base”).

The response provides a correct explanation that the significance of this component is its sequence that determines the traits of an organism (“its order determine the traits of an organism”).

Response 2

The missing nucleotide component is a nitrogen base. The sequence of nitrogen base pairs are crucial to determining traits because they code for specific traits.

The response correctly identifies the missing nucleotide component as the nitrogenous base (“The missing nucleotide component is a nitrogen base”).

The response provides a correct explanation that the significance of this component is its sequence that determines the traits of an organism (“The sequence of nitrogen base pairs are crucial to determining traits because they code for specific traits”).

Response 3

The missing nucleotide component is a nitrogenous base. This component is significant because the sequence of the nitrgenous bases in an oganism determine the proteins cells produce, which determine the traits of an organism.

The response correctly identifies the missing nucleotide component as the nitrogenous base (“The missing nucleotide component is a nitrogenous base”).

The response provides a correct explanation that the significance of this component is its sequence that determines the traits of an organism (“This component is significant because the sequence of the nitrgenous bases in an oganism determine the proteins cells produce, which determine the traits of an organism”).

Response 4

The missing nucleotide component is the nitrogenous base. The significance of this component in determining the traits of an organism is its formation of unique sequences in every organism. The four nitrogenous bases are adenine, thymine, guanine, and cytosine, and they form complementary pairs. The sequence of these differing bases and their complementary pair eventually code into an amino acid chain that is unique to each organism. Furthermore, these amino acids will then further code the traits presented in an organism.

The response correctly identifies the missing nucleotide component as the nitrogenous base (“The missing nucleotide component is the nitrogenous base”).

The response provides a correct explanation that the significance of this component is its sequence that determines the traits of an organism (“The significance of this component in determining the traits of an organism is its formation of unique sequences in every organism. . . . The sequence . . . is unique to each organism. Furthermore, these amino acids will then further code the traits presented in an organism”).