

California Science Test



Grade Five Practice Test Constructed Response Annotated Examples

This guide provides scored and annotated student examples for selected constructed response items and is intended to be used in conjunction with the California Science Test (CAST) Practice Test Scoring Guide.



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This packet provides the prompts, rubrics, and scored and annotated student examples for two constructed-response items on the grade five practice test and is intended to be used in conjunction with the grade five [CAST: Practice Test Scoring Guides](#). The Scoring Guide includes a glossary of terms, student response types, correct responses, and related scoring considerations for the practice test items.

CAST Practice Test Item 20 Metadata

This item is part of a performance task. Refer to the online Practice Test and the Scoring Guide for additional context.

Table 1. Metadata

Item	PE	SEP	DCI	CCC	ILCS
20	3-LS3-2	6. Constructing Explanations and Designing Solutions	LS3.A Inheritance of Traits	2. Cause and Effect	Use data to support an explanatory account of the effects watering has on plant growth

CAST Practice Test Item 20 Prompt

Two plants of the same type are planted on the same day under similar conditions, but they receive different amounts of water. The table shows how often each plant was watered and the observed traits of each plant.

*Using the information in the table, explain how the traits of **each** plant are influenced by its environment.*

Enter your answer in the box provided.

Constructed Response Rubric and Student Samples

Score Point

2

Grade 5 Score Point 2 Rubric and Exemplars from Scoring Guide

Rubric	Exemplar(s)
<p>The response includes that the traits for plant 1 are tall with lots of flowers and the traits for plant 2 are short with few flowers.</p> <p>AND</p> <p>The response includes that water is the factor that influences the traits.</p>	<p><i>The plant that got watered every day, grew taller and had more flowers than the plant that only got watered once a week. That plant was short and had only a few flowers. So, water was the factor that made the plants different.</i></p> <p>OR</p> <p><i>Watering the plants daily compared to once a week, made the plants grow taller and have more flowers, than only watering them once a week. That plant didn't grow and didn't produce a lot of flowers.</i></p>

Grade 5 Sample 1, Score Point 2

Student Response	Score Rationale and Evidence
<p><i>Plant 1 is tall and has lots of flowers but plant 2 is short with few flowers. The plant only had one difference: How much water they received.</i></p>	<p>This response correctly explains how the traits of each plant are different due to the environment (... <i>Plant 1 is tall and has lots of flowers ... Plant 2 is short with few flowers.</i>). This response also correctly explains that water is the factor that influenced the traits (<i>The plant only had one difference: How much water they received.</i>).</p>

Grade 5 Sample 2, Score Point 2

Student Response	Score Rationale and Evidence
<p><i>The traits of each plant are influenced by the frequency of water it is given. The first plant with a more frequent water supply grows bigger and has more flowers than the second plant. The second plant didn't have enough water to grow properly or make many flowers.</i></p>	<p>This response earns one point for explaining how the traits of each plant are different due to the environment and earns one point for identifying water as the factor that influenced the traits (... <i>the first plant with more frequent water supply grows bigger and has more flowers ... the second plant didn't have enough water to grow properly or make many flowers.</i>).</p>

Grade 5 Sample 3, Score Point 2

Student Response	Score Rationale and Evidence
<p><i>The plants traits are influenced by how much water they get. The plant that is tall with many flowers is watered much more than the short plant with few flowers.</i></p>	<p>This response correctly explains that water is the factor that influenced the traits (... <i>plants traits are influenced by how much water they get.</i>) and correctly explains how the traits of each plant are different due to the environment (... <i>the plant that is tall with many flowers is watered much more than the short plant with few flowers.</i>).</p>

Score Point

1

Grade 5 Score Point 1 Rubric and Exemplars from Scoring Guide

Rubric	Exemplar(s)
<p>The response includes that the traits for plant 1 are tall with lots of flowers and the traits for plant 2 are short with few flowers.</p> <p>OR</p> <p>The response includes that water is the factor that influences the traits.</p> <p>NOTE: 1 score point can be given to responses that state the traits of one plant (with no comparison to the other plant) and include water being that factor.</p>	<p><i>Plant 1 was watered daily and grew tall and had a lot of flowers.</i></p> <p>OR</p> <p><i>Watering plant 1 every day gave the plant what it needed to grow tall.</i></p> <p>OR</p> <p><i>Plant 2 was only watered once a week, so it didn't grow tall and didn't have a lot of flowers.</i></p> <p>OR</p> <p><i>The environment can affect the plants traits by having a lot of flowers or only a few flowers or by growing tall or staying short.</i></p>

Grade 5 Sample 4, Score Point 1

Student Response	Score Rationale and Evidence
<p><i>Plant 2 did not grow very tall or have many flowers. Plant 1 was much more taller with flowers and healthier than Plant 2.</i></p>	<p>This response earns one point for correctly explaining how the traits of each plant are different (<i>Plant 2 did not grow very tall or have many flowers. Plant 1 was much more taller with flowers ...</i>). This response does not explain that water is the factor that influences the traits.</p>

Grade 5 Sample 5, Score Point 1

Student Response	Score Rationale and Evidence
<p><i>The traits are influenced by how much water the plants are getting.</i></p>	<p>This response correctly explains that water is the factor that influences the traits (... <i>traits are influenced by how much water the plants are getting.</i>). This response does not explain how the traits of each plant are different due to the environment.</p>

Grade 5 Sample 6, Score Point 1

Student Response	Score Rationale and Evidence
<p><i>Plant 1 is watered Daily. Plant 2 is watered once a week. Depending the amount of water they get they grow in different ways.</i></p>	<p>This response correctly explains that amount of water is the factor that influences the traits (<i>Depending the amount of water they get they grow in different ways.</i>). The response does not fully explain how the traits of each plant are different due to the environment because there is no mention of height or the number of flowers.</p>

Score Point

0

Grade 5 Score Point 0 Rubric and Exemplars from Scoring Guide

Rubric	Exemplar(s)
<p>0-point should be awarded if a student attempts to answer the prompt but the response is incorrect or too vague (insufficient information provided) to receive credit.</p>	<p><i>Water supplies the plants with energy so they can grow and produce flowers.</i></p> <p>OR</p> <p><i>Plant 2 only got food once a week, that's not enough for it to grow.</i></p> <p>OR</p> <p><i>Less water is better, so the plants don't drown.</i></p> <p>OR</p> <p><i>*&YTT%#\$D</i></p> <p>OR</p> <p><i>I don't know; I was never taught this.</i></p>

Grade 5 Sample 7, Score Point 0

Student Response	Score Rationale and Evidence
<p><i>If the plants were placed in the same conditions and planted at the same time, due to the table Plant 1 was not over watered.</i></p>	<p>This response does not correctly explain how the traits of each plant are different due to the environment or that the amount of water influenced the traits (... <i>Plant 1 was not over watered</i>).</p>

Grade 5 Sample 8, Score Point 0

Student Response	Score Rationale and Evidence
<p><i>1. it has good sunlight 2. It has less sunlight 3. Its getting more water 4. Its get less water</i></p>	<p>This response does not earn credit for the vague and unclear explanation of the conditions that influence the traits of the plants. This response does not include an explanation of how the traits of each plant are different due to the environment.</p>

Grade 5 Sample 9, Score Point 0

Student Response	Score Rationale and Evidence
<p><i>Plant 1 is closer to the Sun wich makes it dry up. You only have to water plant 2 once.</i></p>	<p>This response does not earn credit for a vague description of the traits of only plant 1 (<i>Plant 1 is closer to the Sun ...</i>). The response does not correctly explain that water is the environmental factor that is influencing the traits of the plants (<i>You only have to water plant 2 once.</i>).</p>

CAST Practice Test Item 42 Metadata

This item is part of a performance task. Refer to the online Practice Test and the Scoring Guide for additional context.

Table 1. Metadata

Item	PE	SEP	DCI	CCC	ILCS
42	4-ESS1-1	6. Constructing Explanations and Designing Solutions	ESS1.C The History of Planet Earth	1. Patterns	Describe the reasoning for how the data support an explanation of the law of superposition and stratigraphy.

CAST Practice Test Item 42 Prompt

The scientists want to find another fossil that formed at a similar place and time as the whale fossil. The scientists eventually find a rock with more fossils. The rock has two distinct layers. This diagram shows the layers and their fossils. Assume the rock layers are nearly horizontal.

*Identify which one of the two rock layers is older, **and** explain what change in the landscape must have occurred between the formation of the two layers.*

Enter your answer in the box provided.

Constructed Response Rubric and Student Samples

Score Point

2

Grade 5 Score Point 2 Rubric and Exemplars from Scoring Guide

Rubric	Exemplar(s)
<p>The response includes that the rock layer with marine fossils is older than the layers with land fossils.</p> <p>AND</p> <p>The response includes that the landscape where the rock formed changed from being an ocean to a land environment.</p>	<p><i>The marine fossil layer of rock is older than the land fossil layer because the marine fossils are in the lower layer of rock. The landscape where the rock was formed changed from water to land.</i></p> <p><i>OR</i></p> <p><i>The rock layer with the marine fossils is older because it's at the bottom. When the lower layer of rock was forming the area was an ocean, but it changed to land over time.</i></p>

Grade 5 Sample 1, Score Point 2

Student Response	Score Rationale and Evidence
<p><i>Because the land fossils layer is on top of the marine fossils layer, the rock layer containing the marine fossils is older. This means that this landscape changed from a body of water to a piece of land</i></p>	<p>The response correctly identifies that the rock layer with the marine fossils is older than the layers with the land fossils (... <i>the rock layers containing the marine fossils is older.</i>). The response also correctly explains that the landscape changed from ocean to land (... <i>this landscape changed from a body of water to a piece of land.</i>).</p>

Grade 5 Sample 2, Score Point 2

Student Response	Score Rationale and Evidence
<p><i>The Marine fossil layers are older than the land fossil layers. The water levels used to be so high that water covered most land but after long periods of time the water level went down making land show. Then when land covered it the land fossils went on top of the layers of marine fossils.</i></p>	<p>The response correctly identifies that the rock layer with the marine fossils is older than the layers with the land fossils (<i>The Marine fossil layers are older than the land fossil layers.</i>). The response also correctly explains that the landscape changed from ocean to land (<i>The water levels used to be so high that water covered most land but after long periods of time the water level went down making land show.</i>).</p>

Grade 5 Sample 3, Score Point 2

Student Response	Score Rationale and Evidence
<p><i>The rock that contains marine fossils is older. The change in the landscape that occurred between the formation of the two layers was after the marine objects and animals were fossilized, the water in the ocean it came from dried out which made land fossils start to form.</i></p>	<p>The response correctly identifies that the rock layer with the marine fossils is older than the layers with the land fossils <i>The rock that contains marine fossils is older.</i>). The response also correctly explains that the landscape changed from ocean to land (<i>... the water in the ocean it came from dried out ...</i>).</p>

Score Point

1

Grade 5 Score Point 1 Rubric and Exemplars from Scoring Guide

Rubric	Exemplar(s)
<p>The response includes that the rock layer with the marine fossils is older than the layers with the land fossils.</p> <p>OR</p> <p>The response includes that where the rock formed was an ocean and it changed to land.</p>	<p><i>The bottom layer of rock is the oldest.</i></p> <p>OR</p> <p><i>The rock layer with the marine fossils is older because it was formed first.</i></p> <p>OR</p> <p><i>The earth was once an ocean when the fossils formed and it is now land, so that's why we find ocean fossils on the land.</i></p>

Grade 5 Sample 4, Score Point 1

Student Response	Score Rationale and Evidence
<p><i>The marine fossil layer is older and landscape the must of changed when it occurred between the formation of the two layers. Thing that changed in the landscape is that there are shells in the marine layer and there are leaves in the land fossil layer.</i></p>	<p>The response correctly identifies that the rock layer with the marine fossils is older than the layers with the land fossils (... <i>marine fossil layer is older</i> ...). The response does not use evidence from the diagram to explain that the landscape changed from ocean to land, and no credit is awarded for the description of each of the types of fossils in each layer (... <i>there are shells in the marine layer and there are leaves in the land fossil layer.</i>).</p>

Grade 5 Sample 5, Score Point 1

Student Response	Score Rationale and Evidence
<p><i>The layers with the marine fossils is older. These fossils are older because they are at the bottom of the layer that is exposed.</i></p>	<p>The response correctly identifies that the rock layer with the marine fossils is older than the layers with the land fossils (... <i>the layer with the marine fossils is older ... because they are at the bottom of the layer ...</i>). The response does not explain that the landscape changed from ocean to land.</p>

Grade 5 Sample 6, Score Point 1

Student Response	Score Rationale and Evidence
<p><i>I think the marine layer is older because the new land normally forms over an older layer. This is because rain causes land slides/mudslides, another reason is rocks and dirt pile up overtime due to some sort of misplacement.</i></p>	<p>The response correctly identifies that the rock layer with the marine fossils is older than the layers with the land fossils (... <i>the marine layer is older because the new land normally forms over an older layer.</i>). The response does not explain that the landscape changed from ocean to land.</p>

Score Point

0

Grade 5 Score Point 0 Rubric and Exemplars from Scoring Guide

Rubric	Exemplar(s)
<p>0-point should be awarded if a student attempts to answer the prompt but the response is incorrect or too vague (insufficient information provided) to receive credit.</p>	<p><i>The rocks were moved by plate tectonics.</i></p> <p>OR</p> <p><i>The rock layers have all kinds of fossils in them.</i></p> <p>OR</p> <p><i>The land fossils are older because they are found in the higher layers.</i></p> <p>OR</p> <p><i>*&YTT%#\$D</i></p> <p>OR</p> <p><i>I don't know; I was never taught this.</i></p>

Grade 5 Sample 7, Score Point 0

Student Response	Score Rationale and Evidence
<p><i>Out of the two rock layers, the land fossils layer is older I think this is because it has more fossils. The land fossils is older because it has more fossils and layers than the marine fossils layer.</i></p>	<p>The response incorrectly identifies that the rock layer with the land fossils is older than the layers with the marine fossils (... <i>the land fossils layer is older</i> ...). The response does not explain that the landscape changed from ocean to land.</p>

Grade 5 Sample 8, Score Point 0

Student Response	Score Rationale and Evidence
<p><i>I think that the land fossil layer is older because people walked on land. They need water to survive though, but if they were born on Earth then they had the floor before water which the floor had more fossils.</i></p>	<p>The response incorrectly identifies that the rock layer with the land fossils is older than the layers with the marine fossils (... <i>the land fossil layer is older</i> ...). The response does not use evidence from the diagram and incorrectly explains how the landscape changed (... <i>land fossil is older because people walked on land. They need water to survive</i> ...).</p>

Grade 5 Sample 9, Score Point 0

Student Response	Score Rationale and Evidence
<p><i>Land fossil layer because its bigger. the marine fossil layer is more sunk in. Land fossil layer is on the top of a hill.</i></p>	<p>The response does not correctly identify that the rock layer with the marine fossils is older than the layers with the land fossils or use evidence from the diagram to explain that the landscape changed from ocean to land. No credit is earned for the description of the fossil layers in the image (<i>Land fossil layer is on the top of a hill.</i>).</p>