

2021 MCAS Sample Student Work and Scoring Guide

Grade 6 English Language Arts

Question 12: Essay

Reporting Categories: Language and Writing

Standard: L.PK-12.1 - Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

Standard: L.PK-12.2 - Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

Standard: L.PK-12.3 - Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.

Standard: W.PK-12.2 - Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.

Standard: W.PK-12.4 - Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

Item Description: Write an essay explaining how science was used to try to solve a mystery in a passage; use information from the passage to support the explanation.

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Essay Prompt

For this question, you will write an essay based on the passage(s). Your writing should:

- Present and develop a central idea.
- Provide evidence and/or details from the passage(s).
- Use correct grammar, spelling, and punctuation.

Based on "The Anasazi," write an essay explaining how technology and sciences such as archaeology were used by researchers trying to solve the mystery of the Anasazi's disappearance. Be sure to use information from the passage to develop your essay.

Continue to the following page to see the scoring guides for this question. Sample student responses begin on page 3. The annotations that appear above each sample response describe elements of the response that contributed to its score for Idea Development and Standard English Conventions.

Scoring Guide for Idea Development

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

Score*	Description
5A	<ul style="list-style-type: none"> Central idea is insightful and fully developed Skillful selection and explanation of evidence and/or details Skillful and/or subtle organization Rich expression of ideas Full awareness of the task and mode
5B	
4	<ul style="list-style-type: none"> Central idea is clear and well-developed Effective selection and explanation of evidence and/or details Effective organization Clear expression of ideas Full awareness of the task and mode
3	<ul style="list-style-type: none"> Central idea is general and moderately developed Appropriate selection and explanation of evidence and/or details Moderate organization Adequate expression of ideas Sufficient awareness of the task and mode
2	<ul style="list-style-type: none"> Central idea may be present and is somewhat developed Limited selection and explanation of evidence and/or details Limited organization Basic expression of ideas Partial awareness of the task and mode
1	<ul style="list-style-type: none"> Central idea is not developed Insufficient evidence and/or details Minimal organization Poor expression of ideas Minimal awareness of the task and mode
0	The response shows evidence the student has read the text, but does not address the question or incorrectly responds to the question.

Scoring Guide for Standard English Conventions

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

Score*	Description
3A	<ul style="list-style-type: none"> Consistent control of a variety of sentence structures relative to length of essay Consistent control of grammar, usage, and mechanics relative to complexity and/or length of essay
3B	
3C	
3D	
2	<ul style="list-style-type: none"> Mostly consistent control of sentence structures relative to length of essay Mostly consistent control of grammar, usage, and mechanics relative to complexity and/or length of essay
1	<ul style="list-style-type: none"> Little control and/or no variety in sentence structure and/or Little control of grammar, usage, and mechanics relative to complexity and/or insufficient length
0	Sentences are formed incorrectly with no control of grammar, usage, and mechanics and/or insufficient length.

*In both Scoring Guides, letters are used to distinguish between sample student responses that earned the same score (e.g., 5A and 5B).

Idea Development—Score Point 5A

The essay fully develops the central idea of how technology and sciences were used by researchers trying to solve the mystery of the Anasazi's disappearance. Evidence is skillfully presented, explanations are well-integrated, and details are included that support how the following tools were used by scientists attempting to uncover clues: a computer simulation of the Anasazi settlement, an analysis of human bones for signs of malnutrition, and dendrochronology. Subtle and careful organization contributes to a rich expression of ideas as the body paragraphs in the essay logically connect to the mysterious disappearance of the Anasazi. The writing insightfully explains how the inferences that scientists made helped them develop theories, as shown in this example: "based on tree ring observations, scientists were able to make an inference, that suggested the [Anasazi] fought each other for food, and further provided evidence, as to why they would leave the area." Skillful analysis of the evidence that each scientific tool contributed toward solving "the puzzle" of the Anasazi's disappearance provides clear and full awareness of the writing task and mode.

Standard English Conventions—Score Point 3A

The essay demonstrates consistent control of the standard English conventions of grammar, usage, and mechanics. The complexity of sentence structures is evident throughout, and in the first paragraph in particular. Although some errors are present, most sentences containing quotations are punctuated correctly. The essay shows consistent command for the grade level.

A variety of different, and to this case, crucial technologies and sciences including archeology were used by researchers to solve the mystery of the Anasazi's disappearance. These tools were also used in many unique ways, and only the total, combined evidence that each method contributed to was able to finally solve the puzzle.

The first tool that was used to solve the case was a special computer program that simulated the Anasazis, and how they behaved in their environment. It was used to show about what happened to their population, and where they "vanished" to. For example, in paragraph seven, it said: "Everything looked about right. Dean had provided data about the climate and landscape of the time. Other archaeologists had supplied information about the crops grown and tools used. And- although they were simulations- the "people" or agents onscreen were programmed to act reasonably in response to their changing environment." This text suggests the scientists used simulations to map the Anasazis in hopes of finding out what happened to them.

The second tool that was used to shed light on the mystery was searching for different archaeological evidence such as human bones, or skeletons, and analyzing them, to check the overall health, or condition of the people when they were still alive. One piece of the passage to back this up, is in paragraph 11 of "The Anasazis" It stated: "Archaeologists analyzed human bones from the 1300s found in the area. Some showed evidence of famine and malnutrition. Many infants died. Were these signs that food had become scarce? The Anasazi lived about 2100 m (6900 ft.) above sea level, where precipitation, and the growing season were good for farming. But if the weather changed dramatically, the Anasazi-who relied on crops for their survival- may have been forced to evacuate." This means, that based on the evidence analyzing bones collected, scientists were able to make the theory that the food shortages, and bad weather, could have driven the ancient population to a different environment.

Another valuable tool the Scientists used to find the answer is, dendrochronology, or taking samples of tree cores, and then examining the rings, to figure out what happened

in that time period based on the width of the rings. In paragraphs 12, and 14, It said: "To know more about precipitation in the area, researchers turned to dendrochronology, which is the study and dating of tree rings. A tree usually grows a new ring every year. the width of the ring is mainly affected by how much water and warmth the tree produced. Dry years produce narrow rings, and wet years produce wide rings." "Dean analyzed tree rings in the region. He found that in 1250, weather patterns became chaotic, and unpredictable. He says, 'Farming could no longer support the number of people that lived in the area. This of course, increased competition for dwindling resources. In some areas, this resulted in Anasazi communities fighting with each other. This suggests that, based on tree ring observations, scientists were able to make an inference, that suggested the Anasazis fought each other for food, and further provided evidence, as to why they would leave the area.

In conclusion, the scientists, and archaeologists used a lot of tools to help them solve this case, and did come up with an idea of what happened to the Anasazis. Three of the many techniques they used, were computer programs, and simulations, bone analyzations, and tree ring observations. All three of these, and many more evidence forms will eventually lead the group to truly solve the mystery.

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Idea Development—Score Point 5B

The essay's central idea is fully and clearly developed: technology and sciences provided information about how the Anasazi lived, and issues involving climate and famine could have led to the Anasazi's disappearance. Evidence supporting the central idea is skillfully selected and explained with relevant and specific details that include the use of a computer program for a reenactment, dendrochronology to determine climate conditions, and archaeologists' analysis of bones to verify famine. The essay shows full awareness of the mode in its examination of how technology and sciences were used to determine why the Anasazi had vanished. Additionally, the essay is well organized, and the conclusion thoughtfully connects the reader to the central idea of the essay: "[T]echnology gave the scientists an insight into the Anasazi's everyday lives, the scientists determined the weather in the Anasazi's [environment] using tree rings, and the Anasazi bones gave the scientists a clue [as to] how bad the famine and malnutrition [were]."

Standard English Conventions—Score Point 3B

The essay shows consistent control of standard English conventions. A few minor errors, mainly involving verb tense and spelling, do not impede understanding. Additionally, the essay includes a variety of sentence structures relative to the length and complexity of the writing, demonstrating command of grammar and usage. Quotations are also correctly integrated into the essay.

In *The Anasazi*, by Susan Hughes, technology and sciences such as archaeology were used by researchers trying to solve the mystery of the Anasazi's disappearance. The scientists used a simulator to reenact how the Anasazi lived before they vanished. The scientists also studied the rings from the trees surrounding the area to see what the climate was like at the time of the Anasazi. Archaeologists analyzed the bones of Anasazi from the 1200's. Technology and sciences are used, technology was used to give information about how Anasazi lived, a tree's ring was used to examine the climate and what role it played in the Anasazi vanishing, and archaeologists found that a famine and starvation could of lead to the Anasazi vanishing.

The scientists used technology to simulate what could have lead to the Anasazi disappearance. They used a computer program and entered previous information that they already had. The scientists also made sure that the "people" in the program responded normally to what was happening around them. In the text it states, "The computer program started, and the clock began ticking. Time advanced from 800 CE, and Dean watched as crops were planted, the popualtion grew and villages increased in size". The archaeologists provided information about the growing crops and the tools used. As Dean watched the population grow he still waited for 1300, which was when the Anasazi disappeared. After the Anasazi vansished so did their stories and culture. Technology helped to create a vision for the scientists of how the Anasazi vanished.

The scientists also know that weather and precipitation had a role in the disappearance of the Anasazi. For the scientists to see if weather did in fact play a role in this they looked at the rings of a tree in the Anasazi area. In the text it states, "To know more about the history of precipitation in the area, researchers turned to dendrochronology, which is the study and dating of tree rings. A tree usually grows a new ring every year". Narrow rings mean dry years, wide rings mean wet years. In 1250 the weather patterns became terrible and unpredictable. Because of all the bad weather the farm crops couldn't support all the Anasazi in the area anymore. This caused the Anasazi to starve and have malnutrition. The scientists realized that weather could have been a majoir cause of the Anasazi vanishing.

Archaeologists analyzed the bones that they found of the Anasazi and found signs of

starvation and malnutrition. Archaeologists discovered that a lot of the bones were evidence that many Anasazi most likely died of starvation. In the text it states, "Archaeologists analyzed human bones from the 1300s found in the area. Some showed evidence of famine and malnutrition. Many infants died." This most likely happened because of the bad weather. The bad weather caused farms to not be able to provide food for those who needed it, if you depended on the farm for your food you would probably have to starve and face malnutrition. Famine and warfare did drive some of the Anasazi away. What really drove most of them away was when the weather was bad. Since the weather was unpredictable they thought there was spiritual break, this could have caused catastrophe among the Anasazi.

Various technology and sciences were used to determine how the Anasazi disappeared, technology gave the scientists an insight into the Anasazi's everyday lives, the scientists determined the weather in the Anasazi's environment using tree rings, and the Anasazi bones gave the scientists a clue on how bad the famine and malnutrition was. The scientists put all their gathered data together into a computer to visualize what happened to the Anasazi. The tree rings helped the scientists to discover that the weather became unpredictable and that caused other problems. Scientists used the information they had about the Anasazi famine and connected it to the bones that they found. Because of technology and sciences researchers were able to try and solve the mystery of the Anasazi's disappearance.

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Idea Development—Score Point 4

The essay provides a well-developed explanation of how technology and sciences were used to help solve the mystery of the Anasazi's disappearance. Evidence was effectively selected from throughout the passage (e.g., utilizing dendrochronology to determine the effect weather may have had on crop production, and the use of a computer model to simulate how the Anasazi may have behaved). Also, a clear explanation of the evidence is provided: "If the weather was bad for crops, scientists can infer that this is why the Anasazi left their homes." Despite its brief introduction and conclusion, the essay is clearly and effectively organized. Although the writing does not demonstrate a rich expression of ideas for the grade level, the essay reveals a full awareness of task.

Standard English Conventions—Score Point 3C

The essay shows consistent control of a variety of sentence structures. The complexity of the writing allows the writer to demonstrate control of grammar, usage, and mechanics. There are few spelling, punctuation, or other errors to detract from the clarity of the essay.

In the passage "The Anasazi," technology and sciences such as archaeology and dendrochronology were used by scientists and researchers to help solve the mystery of the Anasazi's disappearance.

First, archaeology was used to find evidence to support the fact that the Anasazi moved south. For example, paragraph 10 states "Ancient artifacts show us that areas to the south of Chaco Canyon become more and more crowded at the time that the Anasazi "disappeared," making archaeologists think the Anasazi actually moved south." The science of archaeology was used here because archaeologists found evidence that the population to the south of Chaco Canyon began to grow around the same time the Anasazi disappeared from their homes. This leads them to believe that the Anasazi actually settled south.

Also, dendrochronology was used to support the theory that the Anasazi left as a result of bad weather affecting their crops. For example, paragraph 12 states "To know more about the history of precipitation in the area, researchers turned to dendrochronology, which is the study and dating of tree rings. A tree usually grows a new ring every year. The width of the ring is mainly affected by how much water and warmth the tree experienced. Dry years produce narrow rings, and wet years produce wide rings." The science of dendrochronology was used here because this is how they could find out what the weather was like around the time the Anasazi left. If the weather was bad for crops, scientists can infer that is why the Anasazi left their homes. If the weather was good for crops, they must come up with another theory.

Finally, technology was used to simulate what the Anasazi would have realistically done in their situation. For example, paragraph 18 states "He and several other archaeologists, a social scientist and a computer modeler created the Artificial Anasazi Project. The simulation program constructed an artificial Anasazi society. Specifically, it showed how the people living in Long House Valley -an actual Anasazi settlement- might have behaved from 800 CE to 1350 CE. The model used 3-D satellite maps of the area and recreated known environmental factors, such as climate, crop production, and drought." Technology was used here because the scientists can simulate what the Anasazi were doing around the time they vanished. The computer program agents will react accordingly and realistically to help the scientists understand what the Anasazi were going through and how they responded to their problem.

In conclusion, technology and sciences such as archaeology and dendrochronology were used by scientists and researchers to determine where the Anasazi disappeared to.

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Idea Development—Score Point 3

The essay demonstrates sufficient awareness of the task and provides appropriate evidence that includes studying human bones, dendrochronology, and running a simulation. General development of the central idea is provided, but the writing focuses more on identifying the technology used by scientists than on explaining how it helped to solve the mystery of the Anasazi's disappearance. The essay would have benefited from further elaboration of the way different methodologies aided researchers in solving the mystery of the Anasazi's disappearance. Transitions, such as "[a]nother example" and "[m]y last example," are used to organize the body paragraphs of the essay but tend to be formulaic.

Standard English Conventions—Score Point 3D

The sentence forms are varied and controlled throughout the essay. Minor errors in spelling (e.g., "defiently") do not detract from the clarity of the writing, which is developed enough to demonstrate consistent command of grammar, usage, and mechanics.

Sciences were used many ways to solve the mystery of the Anasazi's disappearance. Scientists created simulations, artifical Anasazi tribes, they looked at trees to get ideas of the weather and they looked for what happened to the food. Scientists defiently used a lot of science.

For example, Archaeologists studied the bones of humans from the Anasazi tribe and found out information. In paragraph 11 the article says, "Archaeologists analyzed human bones from the 1300s found in the area. Some showed evidence of famine and malnutrition. Many infants died." So that couple of sentences shows one way archaeologists tried to solve the Anasazi mystery.

Another example of how they used science to figure out what happened to the Anasazi tribe is dendrochology. Dendrochology is when you study the rings of trees too see how old the trees are and how much water they get and if there are insects living in them. In paragraph 14 it explains the results of what they found from the tree. The article states, "Dean analyzed tree rings in the region. He found that in 1250, weather patterns became chaotic and unpredictable. He says, "Farming could no longer support the number of people that lived in the area." So that is another way science is used to try and solve the Anasazi mystery.

My last example is that scientists made artificial Anasazi tribes and settlements to see how they would react and live when the weather started to get chaotic. In paragraph 18 it says, "The simulation program constructed an artificial Anasazi society. Specifically, it showed how people living in the Long House Valley-an actual Anasazi settlement-might have behaved from 800 CE to 1350 CE." So that is my last example of how people used science to solve the Anasazi mystery.

The mystery is slowly being unsolved but scientists are finding out a lot of new things.

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Idea Development—Score Point 2

The essay provides a basic expression of ideas, but explanations are not always clearly connected to the central idea of how science and archaeology helped to solve the mystery of the Anasazi's disappearance; for example, "who knows maybe the weather changed dramatically and they had to evacu[a]te." In some cases, the essay would have benefited from a clearer expression of ideas and additional explanation, as shown in this quotation: "[researchers] decided to use dendrochronology to find out the age of the trees to see what might have caused the people to leave, warmth or water." Overall, organization is limited.

Standard English Conventions—Score Point 2

Given the length of the essay, mostly consistent control of sentence structures is evident. While spelling errors are present throughout (e.g., "solce the mtsyery"), the essay shows a mostly consistent control of grammar, usage, and mechanics but lacks the complexity necessary to demonstrate consistent control.

Technology and sciences such as archaeology were used by reseachers trying to solve the mystery of the Anasazi's disapperance in many ways. First, for example in paragraph 11 archaeology analyed human bones from the 1300s found in the area. Show showed evidence of famine and malnutrition . The people lived 2100 m above sea level where the growing season was good for farming. But who knows maybe the weather changed dramatically and they had to evacute. Next, for instance in paragraph 12 the resaechers decided to use dendrochronology to find out the age of the trees to see what might have caused the people to leave, warmth or water. Dry years produce narrow rings, and wet years produce wide rings. Finally, it stated in paragraph 18 and 19 Dean and several other archaeologists, a social scientist and a computer modler created the Artifical Anasazi project. The model used 3-D satellite maps of the area and recreated known environments factors, such as climate, crop production and drought. The simulation was agent based which means t and sciences such as archaeology were used by reseachers trying to solce the mtsyery hat each person who lived in the historiscal Anasazi settlement was represented by an agent. As you can see, Technology and sciences such as archaeology were used by reseachers trying to solve the mystery of the Anasazi's disapperance.

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Idea Development—Score Point 1

The response explains how researchers used a simulation to try to solve the mystery of the Anasazi's disappearance, but the central idea is not developed. Few details are included, and there is little explanation to indicate how the details support the central idea. With no clear introductory or concluding paragraph, the response demonstrates minimal organization.

Standard English Conventions—Score Point 1

The response demonstrates little control, which is particularly apparent in the first sentence. The writing is not sufficiently developed or of sufficient length to show command of grammar, usage, and mechanics.

One way technology and sciences such as archaeology were used by researchers trying to solve the mystery of Anasazi's disappearance is by using simulations or drawings. I know this because in paragraph 7, it states "Dean had provided data about the climate and the landscape of the time. Other archaeologists had supplied information about the crops grown and tools used. And----although they were *simulations* ----the "people," or agents onscreen were programmed to act reasonably in response to their changing environment." This shows that they were using simulations to help locate the Anasazi.

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Idea Development—Score Point 0

The response shows that the student has read the text, but no details or explanations are provided that relate to the task.

Standard English Conventions—Score Point 0

The response shows no control of sentences or conventions; it is insufficient in length.

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