LITERACY DESIGN
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LDC Argumentative Writing - Student Work Sample - Science - Grade 6

Scroll down to view two authentic pieces of student work that resulted from this 6th Grade Science LDC Real Works assignment:

After reading informational texts on factors that change ecosystems, create an infographic in which you argue how changing the physical or biological components of an ecosystem affects a specific population in the Great Barrier Reef. Support your position with evidence from the text/s.

After each piece of student work, you will also find how each one was scored using the associated rubric, and you will also find a written rationale for each score.

SW01

Coral Bleaching : Affect on turtles

Changes to the Great Barrier Reef caused by coral bleaching affects the turtle population.

Is a turtles food source harmed because of coral bleaching?

Coral bleaching can make crustaceans scarce because crustaceans live in coral reefs and if the coral dies then the crustaceans have nowhere to live and protect themselves.

According to greatbarrierreefs.com the food eaten by turtles can become scarce since its near the great barrier reef.The habitat of turtles can become harmed since it is near the great barrier reef.

Is the turtles habitat harmed because of coral bleaching?

Loggerhead turtles live in the great Barrier reef and since the great barrier reef has coral bleaching happening the turtles habitat is greatly harmed.

Reasoning: Coral bleaching is harming the Great Barrier reef by starving and decreasing the population of animals that have food that live in the coral and if that animal lives in the coral then it won't have a home anymore and will be killed, so that will affect the predator of that species.This would affect the turtle because it lives near the Great Barrier reef and if coral bleaching happened then it would affect the turtle population. This would affect the habitat because it could be harmed by decreasing the amount of coral there is for animals to live in and decreasing the amount of animals and food there is for the turtles to eat. This could affect the turtles food because if the crustaceans live in coral then if the coral dies then the crustaceans have nothing to live in and protect them so anything could eat them which would decrease the population. If this is caused by coral bleaching then it could be a change in the biological part of the ecosystem.

Citations: https://www.greatbarrierreefs.com.au/turtles-part-1/index.html)

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Dimension	Score	Explanation of the Score / Evidence / Rationale
Controlling Idea	3	For controlling idea this paper scores a 3 because the student addresses all aspects of the prompt and develops a clear claim. "Changes to the Great Barrier Reef caused by coral bleaching affects the turtle population." This paper is not a 4 because the claim could be more specific by naming the physical or biological components of an ecosystem that will be impacted as stated in the prompt. Had the student wrote, "Coral bleaching affects the physical environment by… which affects the turtle population by…" There would have been enough evidence for a 4. Moreover, this paper is not a 2 because the student does specifically call out "turtle population" which highlights the impact on survival and reproduction.
Selection & Citation of Evidence	2	For selection and citation of evidence this paper scores a 2 because the student includes details and examples from the texts that are relevant to the claim. This paper does not score a 1 because the student does include one citation from one source used. When the student paraphrases a portion of the text "Coral bleaching can make crustaceans scarce because crustaceans live in coral reefs and if the coral dies the crustaceans have nowhere to live and protect themselves." This example derived from the text has no attribution. As a result, the student is inconsistently citing sources from the texts.
Development / Explanation of Sources	3	"Coral bleaching is harming the Great Barrier reef by starving and decreasing the population of animals that have food that live in the coral and if that animal lives in the coral then it won't have a home anymore and will be killed, so that will affect the predator of that species." This excerpt from the student work demonstrates accurate understanding of food chains and how the coral bleaching leads to the death of a primary consumer which subsequently leads to the death of a secondary or tertiary consumer, but there is no direct reference from the texts to back up the explanation provided by the student. This paper does not score a 4 because the student does not thoroughly explain the connection between food scarcity and reproduction to help them support their argument. This paper does not score a 2 because there are no specific errors to note in the students explanation of ideas.
Organization	3	The organization of this infographic is intended to be claim-evidence-reasoning which fits the task prompt. The student first presents their claim. Then, the student provides evidence from the texts (see the three colored notes). Finally, the student explains the evidence from the texts. As a result, the rubric suggests, the student "Groups and sequences ideas to develop the controlling idea." The student uses a proficient level of transitions by using the title "Coral Bleaching: Affects on Turtles" to introduce the claim. The students uses two rhetorical questions (i.e. "Is a turtles food source being harmed because of coral bleaching?") to introduce the evidence from the text. For example, the use of questions under the controlling idea is a way to show how the information below the question ties to their argument. The student also uses some transitions where appropriate. For example, "according to the author…". This paper does not score a 2 because the paper maintains coherence in the organization. This paper does not score a 4 because transitions are not varied. Finally, the student transitions to reasoning by using the word "reasoning." These transitions provide a logical sequence for the reader to follow and clarify the relationship among the three parts.

SW05

Coral Bleaching is Affecting the Shark Population

1

As the corals bleach and temperatures increase, researchers have determined that shark and ray species that live in the area may be vulnerable to these climactic changes.

2

Sharks are slow to adapt.This slowness has impeded their ability to survive in our rapidly changing climate.

3

Researchers found that the survival of bamboo shark embryos decreased from 100% at current temperatures to 80% under future ocean temperature scenarios and that the embryonic period was also shortened, not allowing the embryo enough time to develop fully

4

Researchers have found that when an ecosystem endures physical coral loss, fish species richness is extremely likely to decline due to their heavy reliance on the coral colony itself

Reasoning

The shark population is being affected by the coral bleaching. Since the coral bleaching is happening sharks are having a less and less chance of survival. When an ecosystem endures physical coral loss, fish species richness is extremely likely to decline do to their heavy reliance on the coral colony itself. Whenever the fish population goes down than the sharks will not have as much food so then that can also lead to a decrease in shark population to. This is how coral bleaching has a great affect on the shark population.

Source: https://sharkresearch.rsmas.miami.edu/

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Dimension	Score	Explanation of the Score / Evidence / Rationale
Controlling Idea	3	The student makes the claim "As the corals bleach, and the temperatures increase, researchers have determined that shark and ray species that may live in the area may be vulnerable to these climatic changes" This claim includes a biological ("corals bleach") and a physical ("temperatures increase") factor that affects a population ("Shark and Ray"). This paper is not a 4 because the student could have been more specific in their claim naming what impact coral bleaching is going to have on shark and ray populations. In other words, rather than saying how sharks and rays may be vulnerable, to score a 4 the student should have named how changing the physical and biological components of the ecosystem will impact the shark and ray population.
Selection & Citation of Evidence	2	This paper scores a 2 for selection and citation of evidence because while the student does cite a source found during independent research the student does not cite sources from the provided text set despite using information from these texts in their infographic. Some specific examples include using the word "researchers" rather than indicating the source that it came from with the exception of including the URL at the bottom of the infographic. Another example is "researchers found that the survival of bamboo shark embryos decreased from 100 percent to 80 percent under future ocean temperature scenarios" this statement supported the claim about "temperature." Additionally, the student includes "researchers have found that when an ecosystem edures physical coral loss, fish species richness is extremely likely to decline" (This addresses the coral bleaching part of the claim).
Development / Explanation of Sources	3	The student indicates "Whenever the fish population goes down than the sharks will not have as much food so then that can also lead to a decrease in the shark population to." This student explanation shows a statement of logical cause and effect however it lacks the depth needed to understand how the shark population decreases simply from the fish population. Therefore, this paper scores a 3 for development/ explanation of sources because the students accurately explains their ideas and how these ideas support their argument. This paper is not a 2 because their explanation is sufficient and does not contain any notable errors.
Organization	3	The organization of this infographic is helped by the use of the number system to logically move the reader from one idea to the next. This makes up for the lack of transition words or phrases. The student also includes a final section titled "Reasoning" and provides a "Source" section. The infographic follows the claim, evidence, reasoning format. This paper is not a 4 because the student does not vary their use of transitions, rather transitions are limited to phrases like "researchers found...," or "researchers have...".