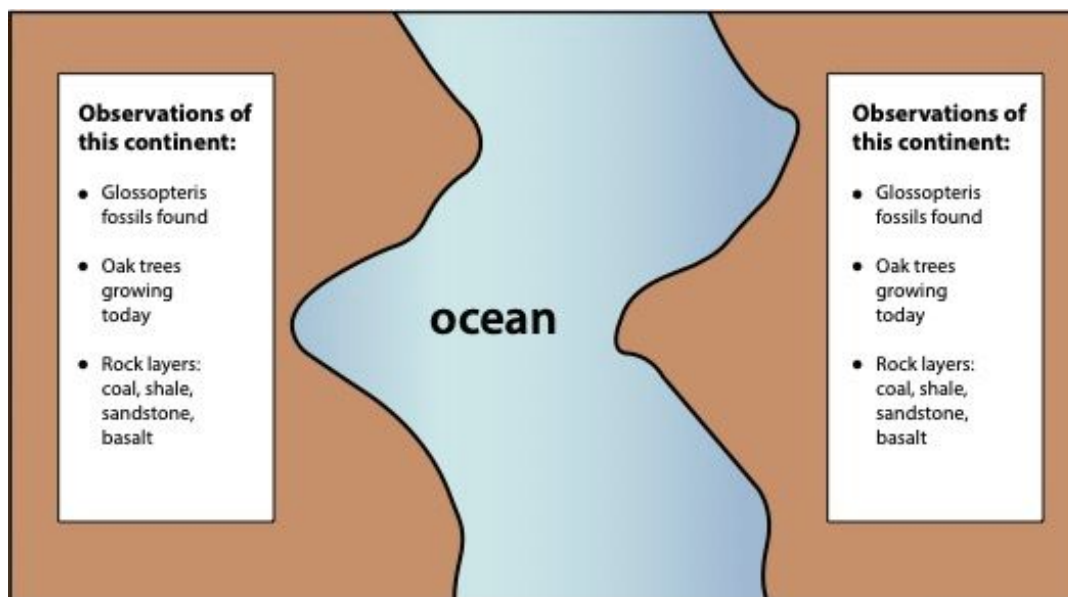


Sample Student Responses for Assessment Items for Earth and Space Science 2-3

Item 1 Sample Student Response

The map below shows two continents separated by an ocean. A group of geologists claim that these two continents used to be together in the past. Bryan heard about this on TV and was surprised. He wondered how the geologists figured that out and what data they used.



The two continents today

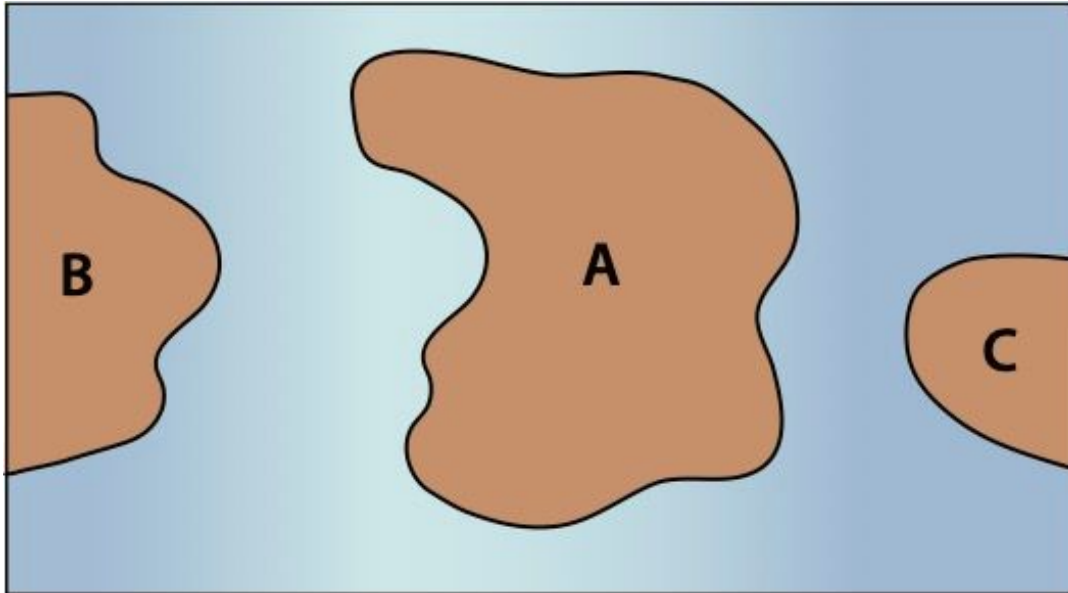
The map includes data about the two continents. Help Bryan understand how data from today can help geologists understand the past. What evidence supports the claim that these two continents used to be together? Explain why that evidence is supportive.

Expected Student Response

The evidence that supports the idea that the two continents used to be together is the shape of the continents, the matching rock layers, and the matching fossils. The shape of the continents supports the idea because the two continents look like they could fit together, so they might have fit together in the past. The rock layers and fossils are evidence because when rock layers are the same, it means they could have formed together, and when fossils are the same, it means the organisms they came from could have lived together. Both of these things could have happened if the continents were together in the past.

Item 2 Sample Student Response

The map below shows Continents A, B, and C, all separated by ocean. It is likely that in the past, Continent A used to be attached to one of the other continents. Jess heard about these continents from her uncle, and she wants to know how to figure out which continent might have been attached to Continent A.



The table below has additional data about Continent B and Continent C. Analyze the data in the map and in the table to determine which continent was more likely to have been next to Continent A. Explain to Jess how you used the data to figure it out.

Recent Data about Continent B and Continent C

Data	Continent B	Continent C
Rock Type	Similar rock in mountain range to Continent A	Different rock in mountain range to Continent A
Temperature	Different air temperature range as Continent A	Similar air temperature range as Continent A
Fossils	Some similar fossils to Continent A	No similar fossils to Continent A
Birds	No similar birds to Continent A	Some similar birds to Continent A

a. Which continent was more likely to have been next to Continent A?

Expected Student Response

Continent B

b. Which evidence helped you to make your decision?

Expected Student Response

The shape of the continents, the rock type, and the fossils.

c. Explain how the evidence you described supports your claim.

Expected Student Response

Continent A is more likely to have been next to Continent B. The evidence for this is that the continents are shaped so that they could fit together, this shows that they could have been together in the past.. Also, Continent A and Continent B have similar rock in their mountain ranges, and also similar fossils. The rock and fossils are evidence because when rock is the same it means it could have formed together, and when fossils are the same that means the organisms they came from could have lived together. Both of these things could have happened if the continents were together in the past.

Item 3 Sample Student Response

Andrea was surprised to learn that the continents on Earth have moved over time. She saw the diagram below in an article about plate boundaries. In the article, scientists used the diagram to represent their data about the plate boundaries in one region where the continents used to be a different distance apart.



Help Andrea analyze the data the scientists collected and use evidence to support one of the claims below about the continents. Be sure to explain why your evidence supports the claim you choose.

- In the past, the continents used to be closer together.
- In the past, the continents used to be farther apart.

Expected Student Response

I think that in the past, the continents used to be farther apart. My evidence is that there is a trench and a plate boundary in the ocean between them. At trenches, sea floor sinks underneath another plate and is destroyed, so continents on either side of the trench move toward each other.