Clues in the Rocks

Compare scientific explanations using evidence and interpretation.

CCSS.ELA-Literacy.RI.8.9 "Analyze a case in which two or more texts provide conflicting information on the same topic and identify where the texts disagree on matters of fact or interpretation."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline Article A's main explanation, circle Article B's main explanation, and write A or B beside each article's evidence so you can compare where the articles disagree.

What Ended the Dinosaurs?

1. About 66 million years ago, a mass extinction ended the age of non-avian dinosaurs. Rocks from that time contain clues, including a thin layer rich in iridium, an element rare in Earth's crust but common in some space rocks. Beneath Mexico's Yucatán Peninsula lies the Chicxulub crater, formed by a huge impact. In India, the Deccan Traps preserve layers of lava from enormous volcanic eruptions that occurred near the same period. Scientists use these clues differently.

2. Article A, "The Impact That Changed Earth," argues that the asteroid impact was the main cause of the extinction. Its authors point to the iridium layer found around the world and to shocked minerals, which form under intense pressure. They say the impact blasted dust and sulfur into the atmosphere, blocking sunlight quickly. Plants died, food chains collapsed, and many animals starved. Article A interprets the close match between the crater's age and the extinction boundary as evidence that the impact alone triggered the rapid disaster.

3. Article B, "Volcanoes Before the Impact," gives a different interpretation. Its authors agree that an asteroid struck near the extinction boundary, but they argue that Deccan Traps eruptions had already weakened ecosystems. The eruptions released gases that could warm the climate over long periods and sulfur compounds that could cool it for shorter periods. Article B cites changes in fossil communities and climate records from before the boundary. It concludes that volcanism was a major cause, while the impact may have delivered a final blow to already stressed life.

2 ANSWER WITH EVIDENCE

Use the passage

1. What fact about the asteroid impact do both Article A and Article B accept?

2. How does Article A explain the main cause and timing of the extinction?

3. Compare the evidence used by the two articles. Name one type of evidence Article A uses and one type Article B uses.

4. Where do the articles disagree about the condition of ecosystems before the impact?

3 YOUR TURN

Your own words

Write a four-sentence museum label that compares the two articles. Include one point of agreement, one disagreement, and evidence used by each article, but do not decide which article is right.

ANSWER KEY

Clues in the Rocks

GRADE 8 · RI.8.9

PART 1 · READ AND MARK

Underline Article A's main explanation, circle Article B's main explanation, and write A or B beside each article's evidence so you can compare where the articles disagree. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	What fact about the asteroid impact do both Article A and Article B accept?	**Both articles accept that an asteroid struck near the extinction boundary.**
2	How does Article A explain the main cause and timing of the extinction?	**Article A says the impact alone caused a rapid extinction by blocking sunlight and collapsing food chains.**
3	Compare the evidence used by the two articles. Name one type of evidence Article A uses and one type Article B uses.	**Article A uses the worldwide iridium layer, shocked minerals, and the crater's age. Article B uses fossil-community changes and climate records from before the boundary.**
4	Where do the articles disagree about the condition of ecosystems before the impact?	**Article A presents the impact as the event that rapidly triggered the disaster. Article B says volcanic eruptions had already stressed and weakened ecosystems before the impact.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Both articles connect the extinction boundary to an asteroid impact. Article A argues that the impact rapidly caused the extinction, using the worldwide iridium layer and shocked minerals as evidence. Article B argues that volcanic eruptions had weakened ecosystems earlier, citing fossil and climate changes before the boundary. Therefore, the articles disagree about whether the impact alone caused the disaster or whether volcanism was also a major cause.

Accept equivalent descriptions of each article's claims and evidence. Students should distinguish Article A's impact-only interpretation from Article B's interpretation that volcanism was also a major cause.