

Close Reading and Text Dependent Questions in Science

The Crater That Ended The Reign Of the Dinosaurs (Planetary Science – Grade 8)

The text selection, *The Crater That Ended The Reign Of the Dinosaurs*, is found in
FOSS Student Resource Book, Planetary Science, pgs. 67-68.



Look in the Student Learning Outcome Document for guidance on when this should be taught.
<http://bpscurriculumandinstruction.weebly.com/student-learning-outcomes-by-grade.html>

The Crater That Ended The Reign Of the Dinosaurs (Planetary Science – Grade 8) Student Questions

1. Based on the text, paraphrase how sedimentary rocks are formed.
2. The article states that iridium is a rare element. Based on the text, what explanation is offered to explain the unusually high concentration found in the rocks that Dr. Alvarez was studying?
3. What possible explanation did Alvarez and his research group provide for the reason why they found “high concentrations of iridium in 65-million-year-old rocks” all over the planet?

4. Based on the evidence in the text, what was the scientific model Alvarez's group worked up regarding what happened to the extinction of the dinosaurs?
5. What was one challenge to the model?
6. How did scientists address this challenge? What did they find?
7. What conclusions could the scientists reasonably draw, based on the presence of the Chicxulub Crater, for their model?

The Crater That Ended The Reign Of the Dinosaurs (Planetary Science – Grade 8) Sample Answers

- 1. Based on the text, paraphrase how sedimentary rocks are formed.**
They are made when layers of sand, dust, clay, and ash are pressed together over time into rock.
- 2. The article states that iridium is a rare element. Based on the text, what explanation is offered to explain the unusually high concentration found in the rocks that Dr. Alvarez was studying?**
Alvarez reasoned that there might have been a big comet or asteroid impact on Earth 65 million years ago that accounted for the iridium in his rock samples.
- 3. What explanation did Alvarez and his research group provide for the reason why they found “high concentrations of iridium in 65-million-year-old rocks” all over the planet?**
He found other rocks with the same concentration of iridium from 65 million years ago – the same as his rocks. A single large crash could have caused a large dust cloud to circle the globe and deposit the iridium everywhere.
- 4. Based on the evidence in the text, what was the scientific model Alvarez’s group worked up regarding what happened to the extinction of the dinosaurs?**
He postulated that a 10 km across meteor could have kicked up enough dust to blot out the sun for a year, disrupting the food chain for animals and causing mass extinctions.
- 5. What was one challenge to the model?**
A meteor that size should have left a sizable crater – one at least 100 km in diameter, yet no such crater has been recorded on land.
- 6. How did scientists address this challenge? What did they find?**
They decided to look for the crater in the ocean using X-ray scanners that allowed them to look through water, leading them to find a similarly sized crater just off the Yucatan Peninsula.
- 7. What conclusions could the scientists reasonably draw, based on the presence of the Chicxulub Crater, for their model?**
The Chicxulub Crater offers further confirmation of the model Alvarez postulated for his rocks and the extinction of the dinosaurs.