

# The Barringer crater

## Key Assessment Task: questions

Learning Objective:	To learn how scientists report their findings to other scientists, and how findings are checked by other scientists before being accepted as scientific knowledge.
Learning Outcomes:	<p><u>All</u> of you will know that if other scientists cannot get similar data a scientific claim is questioned.</p> <p><u>All</u> of you will be able to see why results that have been checked by other scientists can be trusted more than those that have not.</p> <p><u>Most</u> of you will be able to describe how scientists check each others' work using the peer-review process.</p> <p><u>Most</u> of you will be able to give reasons why scientists may disagree about some data or explain the same data differently.</p> <p><u>Some</u> of you will be able to suggest a reason why some scientists might not want to change their ideas even if new data does not support their ideas.</p> <p><u>Some</u> of you will be able to explain why a scientific claim is more likely to be accepted if several scientists have done similar investigations and got results that agree.</p>

***This question is based on section 1.***

**1** The first explanation for the crater was that it was a volcano. Why did scientists decide this explanation was wrong?

***The following questions are based on paragraphs 3, 4, and 5.***

**2** What information is given about the backgrounds of Grove K. Gilbert and Daniel Barringer which might explain why they came up with different explanations for the crater?

**3** Write down **two** examples of data that Grove K. Gilbert used to support the steam explosion explanation.

4 Write down **two** examples of data that Daniel Barringer used to support his impact explanation.

*The following questions are based on paragraphs 5 and 6.*

5 How did Daniel Barringer tell other scientists about his data and explanation?

6 Which of the following reasons explains why scientists were unsure about the impact explanation when Daniel Barringer first suggested it? (Tick (✓) **two** correct reasons)

Reason	Correct?
They thought the crater was a volcano.	
They did not know of any other impact craters on Earth.	
They knew that the craters on the Moon were impact craters.	
They had not visited the crater and checked the data.	
There was a lot of data suggesting it was caused by a steam explosion.	

*Continued overleaf*

**These questions are based on paragraphs 6 and 7.**

**7** Grove K Gilbert did not admit that the steam explanation was wrong. Which **two** of these reasons are the most likely explanations for his behaviour? (Tick (✓) **two** correct reasons)

Reason	Correct?
He thought Daniel Barringer had dropped meteorite pieces around the crater to convince people it was an impact crater.	
He was a highly qualified scientist and Daniel Barringer was a mining engineer.	
He thought he would lose the respect of other scientists.	
He did not like Daniel Barringer.	
He was a very poor scientist.	

**8** Daniel Barringer did not admit that there was no large meteorite buried in the crater.

Use information from the text to suggest a reason why he did not want to admit he was wrong.

**This question is based on paragraphs 6 and 8.**

**9** Describe what happened after Daniel Barringer's presentation, to change the impact explanation from being a new idea to being the accepted explanation. (Your answer should include several things that happened.)