

# 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>Some</u> of you will be able to give reasons why scientists may disagree about some data or explain the same data differently.</p>

**This question is based on section 1 of the information sheet.**

- 1** The first explanation for the crater was that it was a volcano. Scientists decided that this explanation was wrong because:
- A** The crater was about a mile across.
  - B** There were no volcanic rocks in the area.
  - C** Daniel Barringer said it was an impact crater.
  - D** Grove K Gilbert said it was formed by an explosion of steam.

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

- 2** Complete the following sentence:

Grove K Gilbert and Daniel Barringer may have looked at the crater in different ways because of their different backgrounds. Gilbert was a \_\_\_\_\_ and Barringer was a \_\_\_\_\_.

**3** For each data statement below, draw a straight line to show whether it is:

**A** data used by Grove K. Gilbert to support the steam explosion explanation  
or

**B** data used by Daniel Barringer to support the impact explanation

The first one has been done for you.

**A**

**B**

Data that Grove K. Gilbert used to support the steam explosion explanation.

Data that Daniel Barringer used to support the impact explanation.

**Data**

There were no magnetic effects

In the rim the newest material was the deepest.

Meteorite pieces (different from Earth rocks) in the area.

Rocks and minerals created by a large pressure and temperature.

The rim material filled the hole and there was no room for a meteorite

***This question is based on section 5.***

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

(Tick (✓) all the ways he used)

Ways to tell other scientists	Correct?
He wrote papers	
He wrote books	
He published articles in newspapers	
He published papers in scientific journals (for example the <i>Proceedings of the Academy of Natural Sciences</i> )	
He gave interviews on television	
He gave presentations (for example to the National Academy of Sciences)	

***This question is based on section 6.***

**5** Which of the following are reasons 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.	