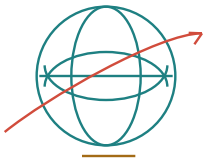
The Scientific Revolution



Name _____ Date _____

1 Recall, then make a connection.

Start from memory. Write a meaning or quick example for each term.

Model	Replication	Instrument

Explain how an instrument and replication can help evaluate a model. Why does a successful observation still require attention to what the instrument and comparison can actually establish?

Context for the task

Galileo used telescopes to observe celestial phenomena and published findings in 1610. Observations of Venus's full range of phases challenged the traditional Ptolemaic arrangement. They supported important changes in astronomical explanation, but those phases alone did not uniquely prove Earth's motion: alternative models could also accommodate them. Evidence can rule out one model without settling every question.

2 Work with the numbers.

Repeat the measurement

In a fictional trial, an instrument gives readings 12, 14, and 13 units under the same stated conditions.

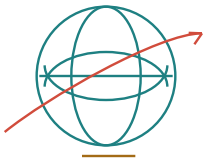
What is their mean?

Show your calculation. Label the quantities you use.

Answer: _____ units

What can this result show? What would need more evidence?

Evidence, application & transfer.



3 Read the evidence closely.

Check the result

Claim: "The reported observation is repeatable under suitable conditions."

Select all evidence relevant to that claim.

A. Independent observers using adequate instruments record the same pattern.

B. The procedure and dates are described clearly enough to compare results.

C. The original observer is famous.

D. The notebook has an expensive binding.

Selections: _____ Explain your reasoning:

4 Apply the idea.

What Venus's phases establish

The supplied source note says the phases challenge the traditional Ptolemaic arrangement, but more than one alternative model can explain them.

Which conclusion is justified?

A. The evidence challenges that arrangement without uniquely proving every feature of one alternative.

B. The phases alone settle every question about Earth's motion.

C. Evidence is useless whenever two alternatives remain.

My choice: _____ Explain why it fits:

5 Carry the idea forward.

Write an observatory report explaining how an instrument can change scientific inquiry. Use the Venus example, one reliability check, and a statement of what the evidence does not establish.