The Pump Question

Weigh evidence and identify what a historical investigation cannot prove.

RI.11-12.1 "Cite multiple pieces of evidence that most strongly support an analysis of what the text says explicitly as well as inferences drawn from the text including determining where the text leaves matters uncertain."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline three details that support Snow's explanation, circle one detail that limits what he could conclude, and number the underlined details from strongest to weakest evidence.

What Snow Could Know

1 In late August 1854, cholera swept through London's Soho neighborhood. The disease causes severe diarrhea and can kill through dehydration. At the time, many physicians blamed foul-smelling air. Physician John Snow doubted that explanation and recorded where people had died. On his map, deaths crowded around the public pump on Broad Street. A cluster, however, cannot by itself show what caused those deaths: residents near the pump also shared streets, crowded housing, and other conditions. Snow needed evidence that separated drinking water from simply living nearby.

2 Two nearby workplaces complicated the air theory. The Soho workhouse housed many people but reported relatively few cholera deaths; it had its own water supply. Workers at a brewery near the pump also had few cases, and they generally drank beer rather than water from the Broad Street pump. Meanwhile, Snow found that some people who lived farther away but drank water from that pump became ill. These comparisons gave him a reason to suspect the pump water, rather than the neighborhood's air. The contrast mattered because both workplaces stood close to streets where many others became sick.

3 Officials removed the pump handle on September 8, making its water harder to collect. This action later became a famous image of public health in practice. Yet the number of new cases had already begun to fall before the handle came off. Snow himself noted this timing, which makes it difficult to say how many infections the removal prevented. His investigation offered strong evidence linking one water source to the outbreak, but it could not prove that every Soho patient drank from the pump. Nor could it establish the exact effect of closing the pump without knowing what would have happened otherwise.

2 ANSWER WITH EVIDENCE

Use the passage

1. Which two observations show that living near the pump and drinking its water were not the same thing? Explain why each matters.

2. A skeptic claims that the neighborhood's air alone explains the pattern of illness. What inference do the workhouse and brewery comparisons support? Cite a detail about each workplace.

3. Why does the map alone fall short of proving that pump water caused the outbreak? Cite one detail that reveals the map's weakness and one that shows how Snow investigated further.

4. Does the passage prove that removing the pump handle ended the outbreak? Cite two details about the action and its timing, then identify what remains uncertain.

3 YOUR TURN

Your own words

A museum plans to replace the caption "The pump handle ended Soho's cholera outbreak." Write a new caption using at least three distinct details from at least two paragraphs. Explain Snow's reasoning and one question his evidence cannot settle.

ANSWER KEY

The Pump Question

HIGH SCHOOL · RI.11-12.1

PART 1 · READ AND MARK

Underline three details that support Snow's explanation, circle one detail that limits what he could conclude, and number the underlined details from strongest to weakest evidence. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Which two observations show that living near the pump and drinking its water were not the same thing? Explain why each matters.	**The nearby workhouse had its own water supply and relatively few deaths, while some people who lived farther away drank pump water and became ill. Together, these observations distinguish water use from proximity.**
2	A skeptic claims that the neighborhood's air alone explains the pattern of illness. What inference do the workhouse and brewery comparisons support? Cite a detail about each workplace.	**Air alone is unlikely to explain the pattern. The nearby workhouse had its own water supply and relatively few deaths; brewery workers near the pump generally drank beer instead of pump water and also had few cases.**
3	Why does the map alone fall short of proving that pump water caused the outbreak? Cite one detail that reveals the map's weakness and one that shows how Snow investigated further.	**People near the pump also shared crowded housing and other conditions, so the cluster had more than one possible explanation. Snow investigated further by finding that some people who lived farther away drank pump water and became ill.**
4	Does the passage prove that removing the pump handle ended the outbreak? Cite two details about the action and its timing, then identify what remains uncertain.	**No. Officials removed the handle on September 8, but new cases had already begun to fall. The passage cannot establish how many infections, if any, the removal prevented.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Snow's map showed deaths clustered near the Broad Street pump, but a cluster alone could not identify the cause. The nearby workhouse had its own water supply and relatively few deaths, while some people farther away drank pump water and became ill. These comparisons support a link between the water and the outbreak. New cases had already begun to fall before officials removed the handle, so the evidence cannot tell us how many infections that action prevented.

Accept other accurate combinations of evidence when students explain how the details support their inference or limit a conclusion. For the caption, require three distinct passage details from at least two paragraphs and a specific uncertainty.