Hidden Water Evidence

Interpret how evidence supports a careful explanation.

10.P.EICC.2.c "Explain and learn concepts and processes by interpreting and constructing texts. (I/C)"

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline statements that explain a concept or process. Circle observations, tests, or limits that support or qualify a claim.

How Cities Find Hidden Water Leaks

1. Cities lose water when pipes crack below streets, where damage cannot be seen. To locate a hidden leak, utility crews often use acoustic sensors, devices that detect vibrations and sound. Water moving through an intact pressurized pipe makes a steady background sound. Water escaping through a small opening creates a sharper, irregular sound as it rubs against pipe edges and soil. This difference does not prove a leak by itself, because traffic, pumps, and nearby construction also create noise. Instead, crews compare recordings from several points along the pipe to identify a pattern.

2. First, a crew places sensors at valves or access points, then records sound while water pressure is stable. A computer display may show frequency, or the number of sound-wave cycles each second, helping analysts distinguish low traffic rumble from higher-pitched leak noise. Next, the crew moves one sensor closer to the suspected section and compares the new recording with the first one. If the sharper sound grows stronger near one location, the evidence supports, but does not guarantee, a leak there. Crews may confirm the finding with pressure tests or a small inspection before digging into the street.

3. After the investigation, the utility must turn measurements into a clear public explanation. A useful notice begins with the main claim, such as the need to inspect a particular block, and then gives the evidence in an order readers can follow. It should explain what the recordings suggest, name any uncertainty, and describe the next step. For example, saying that a sound increased at two nearby access points is more informative than simply calling the pipe broken. By linking a claim to specific observations and limits, the notice helps residents understand both the concept of acoustic detection and the process used to reach a decision.

2 ANSWER WITH EVIDENCE

Use the passage

1. Why do crews compare recordings from several points instead of treating one sharp sound as proof of a leak?

2. How does a frequency display help analysts interpret the sounds they record?

3. What observation would support a suspected leak location, and what limitation does the passage place on that evidence?

4. What order should a public notice use to explain an investigation clearly, according to paragraph 3?

3 YOUR TURN

Your own words

Write a three-sentence public notice about a different school or community investigation. State a claim, include one specific observation, and name an uncertainty or next step.

ANSWER KEY

Hidden Water Evidence

GRADE 10 · 10.P.EICC.2.c

PART 1 · READ AND MARK

Underline statements that explain a concept or process. Circle observations, tests, or limits that support or qualify a claim. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Why do crews compare recordings from several points instead of treating one sharp sound as proof of a leak?	**Other sources, including traffic, pumps, and construction, can create noise. Comparing recordings helps crews identify a pattern that better supports a leak claim.**
2	How does a frequency display help analysts interpret the sounds they record?	**It helps analysts distinguish low traffic rumble from higher-pitched leak noise by showing the number of sound-wave cycles each second.**
3	What observation would support a suspected leak location, and what limitation does the passage place on that evidence?	**A sharper sound growing stronger near one location supports the suspected leak location, but it does not guarantee that a leak is there.**
4	What order should a public notice use to explain an investigation clearly, according to paragraph 3?	**It should state the main claim, present evidence readers can follow, explain what the evidence suggests, name uncertainty, and describe the next step.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Our school should inspect the north hallway ceiling for a possible leak. After yesterday's rain, students saw water spots spread beneath the same ceiling tile, but the source has not been confirmed. The maintenance team will examine the roof and pipes before making repairs.

Accept accurate paraphrases that connect specific evidence to a qualified claim. For the public notice, accept varied topics if the response has three sentences and includes a claim, a specific observation, and an uncertainty or next step.