Roof Decision Evidence

Weigh a written recommendation against building-use data.

CCSS.ELA-Literacy.RI.11-12.7 "Integrate and evaluate multiple sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a question or solve a problem."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline claims about how a white roof might affect cooling. Circle table values that support the recommendation, and write L beside details that limit a conclusion.

Choosing a Cooler Roof

1 Riverton's library needs a new roof, and the city must decide whether to pay extra for a white, reflective surface. In a council memo, facilities manager Elena Ruiz wrote that reflective roofs absorb less solar energy than dark roofs. She predicted that the library's top-floor rooms would stay cooler and that its air-conditioning system would run less often. Her memo did not estimate savings, however, and she asked the council to examine the city's building records.

JULY BUILDING RECORDS

Building	Roof surface	Electricity use, kWh per square foot	Highest indoor temperature, °F
Library	Black	2.9	80
East Clinic	White	2.1	76
Recreation Center	White	1.8	77

2 The records below summarize July readings from three city buildings. The library and East Clinic have similar floor area and use electric air-conditioning, but their hours and insulation differ. East Clinic's white roof was installed in 2023, while the library's black roof is 18 years old. The recreation center also has a white roof, yet it is closed most evenings. These differences mean that roof color is a possible explanation, not proof, for every difference in electricity use.

3 Ruiz recommends choosing a white roof, but she does not claim the table settles the decision. The East Clinic used 0.8 fewer kilowatt-hours per square foot than the library and recorded a lower indoor peak. Still, the clinic may have better insulation, and the recreation center's lower use could reflect its shorter schedule. Ruiz proposes collecting hourly use data after installation and comparing it with the library's own July records. That comparison would better test whether the new roof reduces cooling demand.

2 ANSWER WITH EVIDENCE

Use the passage

1. What written claim and what table comparison support Ruiz's recommendation for a white roof?

2. Why can the table not prove that roof color caused lower electricity use? Give two limits from the passage.

3. How does the recreation center's data caution you against treating lower electricity use as proof that a white roof caused it?

4. What additional evidence does Ruiz propose, and how would it make the conclusion stronger?

3 YOUR TURN

Your own words

Write exactly three sentences recommending whether the city should choose a white roof. Use one numerical comparison from the table, then name one limitation and one next step for gathering evidence.

ANSWER KEY

Roof Decision Evidence

HIGH SCHOOL · RI.11-12.7

PART 1 · READ AND MARK

Underline claims about how a white roof might affect cooling. Circle table values that support the recommendation, and write L beside details that limit a conclusion. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	What written claim and what table comparison support Ruiz's recommendation for a white roof?	**The memo says reflective roofs absorb less solar energy. East Clinic, with a white roof, used 2.1 kWh per square foot, compared with the library's 2.9.**
2	Why can the table not prove that roof color caused lower electricity use? Give two limits from the passage.	**The buildings have different insulation and operating hours. The recreation center is closed most evenings, so its lower use may result from its schedule.**
3	How does the recreation center's data caution you against treating lower electricity use as proof that a white roof caused it?	**Its white-roof building used less electricity, but it is closed most evenings. Its shorter schedule could explain some of the lower use.**
4	What additional evidence does Ruiz propose, and how would it make the conclusion stronger?	**She proposes collecting hourly electricity-use data after installation and comparing it with the library's own July records. Comparing the same building before and after installation would reduce differences among buildings.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

The city should select a white roof because the available evidence points to lower cooling demand. East Clinic used 2.1 kilowatt-hours per square foot in July, compared with the library's 2.9. Because the buildings differ in insulation and hours, the city should also compare the library's hourly electricity use before and after installation.

Accept recommendations for or against the white roof when students accurately use a table value and explain a stated limitation. The next step should involve the library's hourly use after installation and comparison with its own earlier records.