Cool Roof Claims

Weigh evidence before making a recommendation

11.6.R.3 "Students will evaluate the relevance, reliability, and validity of the information gathered."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline two details that make a source useful for Nia's question, circle two details that limit a claim, and number the three sources in the order you would investigate them. Use your marks to judge which evidence deserves the most weight.

Will a White Roof Pay Off?

1. At a November school board meeting, students asked whether coating the high school's dark roof white could cut cooling costs. The district is considering a $48,000 roof coating next summer. A student reporter, Nia, collected three sources before writing an editorial. Her question is narrow: Would this coating likely reduce this school's summer electricity use enough to justify its cost? The building runs air conditioning through June and July, but classes end in early June. Some cooling continues for offices and summer programs. Nia needs evidence about the building's actual operating schedule, not just how hot its roof feels.

2. A district facilities log records monthly electricity use for the same school from May through August in 2023 and 2024. It also lists monthly cooling-degree-day totals, which measure how far daily temperatures rose above a set baseline. The roof remained dark in both years. In July 2024, electricity use fell 12 percent from July 2023, while the cooling-degree-day total was 25 percent lower. Nia downloaded the log from the district's public records portal, but it does not separate air-conditioning use from lighting, computers, or other electrical loads. She has not checked whether summer programs changed.

3. A coating company's website claims its product cuts "energy bills by up to 30 percent." The page describes a test on a warehouse in a warm climate but gives no dates, meter readings, or method for choosing the comparison months. A university research team published a peer-reviewed study comparing coated and uncoated roofs on 40 buildings across several climates. It found that cooling electricity use fell on average, but heating electricity use sometimes rose in winter. The paper reports its methods and data; none of its buildings share the school's schedule. Nia must decide which findings support a local prediction and which require caution.

2 ANSWER WITH EVIDENCE

Use the passage

1. Why is the district facilities log relevant to Nia's question, and what important information does it lack?

2. What details would you need before treating the coating company's 30 percent claim as reliable evidence?

3. Could the 12 percent drop in July electricity use show that a white coating saves energy at this school? Explain using the log.

4. How useful is the university study for predicting whether the coating will pay for itself at this school? Give one strength and one limit.

3 YOUR TURN

Your own words

Write a four-sentence plan for gathering new evidence before Nia recommends a decision. Name a new source, explain how you would check its reliability, describe a fair comparison, and show how you would use the results to judge the coating's cost.

ANSWER KEY

Cool Roof Claims

GRADE 11 · 11.6.R.3

PART 1 · READ AND MARK

Underline two details that make a source useful for Nia's question, circle two details that limit a claim, and number the three sources in the order you would investigate them. Use your marks to judge which evidence deserves the most weight. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Why is the district facilities log relevant to Nia's question, and what important information does it lack?	**It records electricity use at the school Nia is investigating, but it does not isolate air-conditioning use or show whether summer programs changed.**
2	What details would you need before treating the coating company's 30 percent claim as reliable evidence?	**The test dates, meter readings, and method for choosing comparison months would help assess the claim. The passage says the company provides none of them.**
3	Could the 12 percent drop in July electricity use show that a white coating saves energy at this school? Explain using the log.	**No. The roof was dark in both years, and the lower cooling-degree-day total offers another possible reason for the drop.**
4	How useful is the university study for predicting whether the coating will pay for itself at this school? Give one strength and one limit.	**Its reported methods and comparison of coated and uncoated roofs make it useful evidence about possible effects. It cannot establish savings for this school because the buildings had different schedules, and winter heating use sometimes rose.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

I would request separate air-conditioning meter readings for this school and a similar uncoated school. I would check the meters' calibration records and confirm that readings cover the same dates. After this roof is coated, I would compare changes in cooling use at both schools while accounting for weather and summer schedules. I would estimate yearly savings from the measured difference, include any change in winter costs, and compare the total with the $48,000 price.

Accept other rankings in the marking task if students can justify them with passage details. For the open task, look for a credible new source, a reliability check, a comparison that addresses other possible causes, and a connection to the school's actual costs.