Shade and Sources

Test whether evidence fits a research question.

7.6.R.3 "Students will determine the relevance, reliability, and validity of the information gathered."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline how the parks staff measured temperature, circle two details that limit other sources, and put a star beside the claim Maya can support with evidence.

A Cooler Playground?

1. Maya's class wants to know whether trees lower the temperature of the pavement on their school playground at noon. Before asking the principal to plant more trees, Maya collects information. A city parks report describes a nearby playground with asphalt like theirs. On six clear days, staff used the same surface thermometer at noon to measure pavement beneath trees and pavement in full sun. They took three readings at each spot each day. The shaded pavement averaged 28°C, while the sunny pavement averaged 39°C.

2. A tree nursery's website says, "Our trees cool any playground by 15°C!" The page offers no date, measurement method, or link to a study. It also has a button to buy trees. Maya finds a student survey from the nearby playground, too. Twenty-two students answered whether the shaded pavement felt cooler than the sunny pavement at lunch. Nineteen said yes. The survey records people's impressions, not thermometer readings. Maya notes that both sources discuss playground shade, but they provide different kinds of support for their claims.

3. Finally, Maya finds a local weather station's noon air-temperature records for those same six days. The station explains how it checks its instruments, but it sits two miles from the playground and measures air, not pavement. Maya plans to write, "Measured pavement was cooler under trees on six clear days at one nearby playground." She does not plan to claim that trees always lower pavement temperatures by exactly 11°C. Other playgrounds, seasons, and weather could produce different results.

2 ANSWER WITH EVIDENCE

Use the passage

1. How relevant are the weather station's records to Maya's question? Explain one way they help or fall short.

2. What makes the tree nursery's temperature claim difficult to trust?

3. Would the student survey be valid evidence that the pavement was 11°C cooler under trees? Why or why not?

4. Why is Maya's planned claim better supported than a claim that trees always lower pavement temperature by exactly 11°C?

3 YOUR TURN

Your own words

Imagine you are researching whether a rain garden would reduce puddles outside your school entrance. Describe two possible sources you would seek, then explain which would give more relevant, reliable, and valid evidence and name one limit of what it could prove.

ANSWER KEY

Shade and Sources

GRADE 7 · 7.6.R.3

PART 1 · READ AND MARK

Underline how the parks staff measured temperature, circle two details that limit other sources, and put a star beside the claim Maya can support with evidence. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How relevant are the weather station's records to Maya's question? Explain one way they help or fall short.	**They provide air temperatures for the same days, but they do not directly answer the question because the station is two miles away and measures air rather than playground pavement.**
2	What makes the tree nursery's temperature claim difficult to trust?	**The nursery gives no date, method, or study to check, and it sells the trees it describes.**
3	Would the student survey be valid evidence that the pavement was 11°C cooler under trees? Why or why not?	**No. Students reported how the pavement felt, but they did not measure its temperature.**
4	Why is Maya's planned claim better supported than a claim that trees always lower pavement temperature by exactly 11°C?	**The parks staff measured a difference at one playground on six clear days. Those measurements do not establish the same difference at every playground or in every kind of weather.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

I would seek a nearby school's facilities log that measures puddle depth after storms before and after it installed a rain garden, and an ad from a garden store claiming rain gardens prevent all puddles. The log is more relevant because it tracks puddles near a school, rather than making a general sales claim. Dated measurements and rainfall totals would make its evidence easier to check and its comparisons more valid than the ad's claim. Even so, results at another school would not prove our entrance would stay dry.

Accept answers that distinguish evidence about pavement temperature from evidence about air temperature or how cool pavement feels. In Part 3, look for a reasoned comparison of two sources and a limit that keeps the student's conclusion within the evidence.