# Shade Under Scrutiny

Weigh evidence before accepting a claim.

**12.6.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 details that make evidence relevant to Elm's decision, circle details that help you judge whether measurements can be checked, and number two claims that go beyond what was measured.

### Will Shade Cool the Stop?

1. Elm Transit is deciding whether to put a shade sail over its westbound stop, where riders wait on hot afternoons. To guide the vote, a city crew recorded air temperature at that stop and at a tree-shaded stop six blocks away. On three July afternoons, between 2 and 4 p.m., the crew used the same calibrated thermometer at both sites. The shaded stop averaged 4°F cooler. A council member called this proof that a sail would lower air temperature at the westbound stop by 4°F. The two stops also differ in traffic and surrounding pavement.

2. A shade-sail company submitted a brochure promising that its product would "cool riders by 12°F." Its evidence was one infrared reading of sunlit pavement at the westbound stop and one reading of pavement beneath a sail outside its warehouse. The second surface was 12°F cooler. The brochure lists neither the time of day nor the weather during those readings. Infrared readings describe surface temperature, not air temperature or a person's body temperature. The company's financial stake does not automatically make its numbers false, but the missing methods make them difficult to verify. Its two sites offer a poor test of what one sail would change at this stop.

3. A university transportation team studied twelve shelters in a nearby city for twenty summer afternoons. At each shelter, researchers measured air temperature in paired sunny and shaded positions at the same hour, checked their instruments against a reference thermometer, and published their procedures. They found shaded air 1°F to 2°F cooler. The team did not record riders' health, and the shelters had solid roofs rather than sails. Its report offers a more repeatable test of shade's effect on air temperature, but it cannot establish how much a sail would cool riders at Elm's westbound stop or prevent heat illness.

## 2 ANSWER WITH EVIDENCE

Use the passage

1. Why are the city crew's measurements relevant to Elm's decision, and why do they not prove the council member's claim?

2. Evaluate the brochure's reliability and the validity of its claim that the sail would "cool riders by 12°F."

3. What makes the university report useful evidence, and what limits its relevance to Elm's proposed sail?

4. Which source provides the strongest basis for estimating whether shade can change air temperature? Defend your choice with two details from the passage, and state one conclusion it cannot support.

## 3 YOUR TURN

Your own words

In 70 to 100 words, propose evidence you would gather to decide whether your school should shade its outdoor lunch tables. Explain how you would judge its relevance and reliability, what comparison would test a claim about shade, and one conclusion the evidence could not support.

ANSWER KEY

# Shade Under Scrutiny

GRADE 12 · 12.6.R.3

## PART 1 · READ AND MARK

Underline details that make evidence relevant to Elm's decision, circle details that help you judge whether measurements can be checked, and number two claims that go beyond what was measured. Accept any marking that follows this job and points at the right text.

## PART 2 · ANSWERS

| # | QUESTION | ANSWER |
|---|---|---|
| 1 | Why are the city crew's measurements relevant to Elm's decision, and why do they not prove the council member's claim? | **The crew measured air temperature at the stop in question during hot afternoons. Because the shaded comparison stop also differs in traffic and pavement, the 4°F difference cannot be attributed to shade alone or used to predict a sail's exact effect.** |
| 2 | Evaluate the brochure's reliability and the validity of its claim that the sail would "cool riders by 12°F." | **Missing times and weather make the readings difficult to verify. The measured 12°F difference concerns pavement surfaces at different sites, not riders' temperatures.** |
| 3 | What makes the university report useful evidence, and what limits its relevance to Elm's proposed sail? | **Its checked instruments, published procedures, paired measurements, and twenty afternoons support a repeatable comparison. It studied solid-roof shelters in another city, not a sail at Elm's stop.** |
| 4 | Which source provides the strongest basis for estimating whether shade can change air temperature? Defend your choice with two details from the passage, and state one conclusion it cannot support. | **The university report is strongest because it measured air in paired sunny and shaded positions and published procedures for checked instruments. It cannot predict the exact cooling from a sail at Elm's stop.** |

## PART 3 · YOUR TURN (SAMPLE ANSWER)

I would measure air temperature beside the lunch tables under a temporary canopy and at unshaded tables at the same lunch hour on several days. I would log the weather and use checked thermometers with a written procedure so others could repeat the measurements. These data are relevant because they come from the tables students use, and the simultaneous comparison helps test whether shade changes local air temperature. The readings would not prove that the canopy prevents heat illness, which the thermometers do not measure.

Accept other well-supported source choices in question 4 if the response distinguishes what the source measures from what it can establish. For Part 3, look for site-specific evidence, a checkable method, a meaningful comparison, and a limitation tied to the proposed measurements.