

Evidence With Care

Distinguish measured evidence from an unsupported scientific claim.

CCSS.ELA-Literacy.WHST.9-10.1d "Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB This practice report uses simulated data. Underline two sentences stating study limitations. Circle three cautious words or phrases. Box one sentence that proposes a fairer comparison.

Surface Temperature Investigation

- ① On April 18 at 1:30 p.m., an environmental science class measured surface temperatures at six school locations. Students used the same infrared thermometer and recorded three readings per location during a mostly sunny sampling period. At the south parking area, the mean of the three asphalt readings was 41.2 degrees Celsius. At a site beneath mature maples, the mean of the three grass readings was 27.6 degrees Celsius. These are surface measurements from two sites, not air temperatures or measurements of people.
- ② The reported means differ by 13.6 degrees Celsius. However, both the surface material and the shade differed between these sites, so the comparison cannot isolate the effect of tree cover. Measurements from one afternoon also cannot establish patterns for other times or seasons. The results justify investigating the proposed entrance shade project further; they do not establish how much it would cool the pavement. Choosing a planting location would also require information about soil depth, underground utilities, maintenance costs, and projected canopy size.
- ③ A follow-up investigation could compare shaded and unshaded pavement made of the same material at several times and on several days. Students should report their sampling method, units, and the range and mean of repeated readings. These observations may clarify how surface temperatures vary with shade under the sampled conditions. They would not by themselves demonstrate effects on human health. A scientific recommendation should state what was measured, identify limitations, and separate a proposed benefit from an observed result.

2 ANSWER WITH EVIDENCE _____ Use the passage

- 1** Name one reporting convention used in paragraph 1 and explain how it helps a reader evaluate the investigation.

- 2** Why does the 13.6-degree difference fail to establish the effect of shade alone?

- 3** Which four planning factors are named, and why are they relevant to a defensible recommendation?

- 4** Quote one cautious phrase in paragraph 3. Explain why its caution is appropriate.

3

YOUR TURN

Your own words

Write a 75-95-word recommendation for the school facilities committee using this report. Use formal, objective language and scientific reporting conventions. Include both measured means with units, one limitation, a justified next investigation and a clear distinction between evidence and a possible benefit. Do not add unsupported data.

PART 1 • READ AND MARK

This practice report uses simulated data. Underline two sentences stating study limitations. Circle three cautious words or phrases. Box one sentence that proposes a fairer comparison. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	Name one reporting convention used in paragraph 1 and explain how it helps a reader evaluate the investigation.	Examples: date/time identify sampling conditions; degrees Celsius specify the unit; thermometer identifies the instrument; three readings and means explain how values were summarized. Accept a matching explanation.
2	Why does the 13.6-degree difference fail to establish the effect of shade alone?	Surface material and shade both changed: sunny asphalt was compared with shaded grass. Their separate effects cannot be isolated.
3	Which four planning factors are named, and why are they relevant to a defensible recommendation?	Soil depth, underground utilities, maintenance costs, and projected canopy size. They bear on whether and where the proposed planting could work; temperature readings alone do not settle that decision.
4	Quote one cautious phrase in paragraph 3. Explain why its caution is appropriate.	For example, "may clarify" limits the prediction to what future observations could show, rather than promising a result. Accept another specific phrase with an accurate explanation.

PART 3 · YOUR TURN (SAMPLE ANSWER)

On April 18, mean surface temperatures were 41.2 degrees Celsius on asphalt and 27.6 degrees Celsius on shaded grass. This comparison cannot isolate shade because the surface materials also differed. Measurements from one afternoon do not establish a seasonal pattern. The committee should investigate matched pavement surfaces with and without shade across several days before predicting the effect of new trees. Lower pavement temperatures could be a benefit, but these observations do not demonstrate how much the proposed planting would cool the entrance.

Accept any two explicit limitations, such as the material/shade confound, one-afternoon sampling, uncertain pavement effect or unmeasured health outcomes. Cautious language includes "could," "may clarify," and "would not by themselves demonstrate." The fairer comparison is the first sentence of paragraph 3. Assess actual writing for a formal objective tone, measured values and units, calibrated claims, a relevant next study and no unsupported results. Means differ by $41.2 - 27.6 = 13.6$ degrees Celsius. All data are simulated for writing practice.