Evidence Under Shade

Synthesize varied sources to answer a focused research question.

ELA.12.C.4.1 "Conduct research on a topical issue to answer a question and synthesize information from a variety of sources."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline each named source, circle the evidence or limitation it provides, and write a short note showing how that information supports, limits, or qualifies the planners' conclusion.

Shade, Heat, and Bus Stops

1 Phoenix planners asked, "Would adding shade at bus stops reduce heat exposure for riders?" Their question focused on summer afternoons, when people may wait outdoors. They began with climate records from the National Weather Service. In July 2023, Phoenix recorded 31 straight days with highs of at least 110°F. That record establishes the scale of the heat problem, but it does not show conditions at a particular stop. The planners also used Valley Metro route maps and schedules to identify stops near clinics, grocery stores, and transfer points. Those records show where waiting is likely, not how hot riders feel.

2 Next, the team gathered two kinds of local evidence. On six July afternoons, researchers used a thermometer at 20 stops, half with shelters and half without them. A shaded sidewalk is not automatically cooler in every measure, so they recorded air temperature and surface temperature at the same time. They also interviewed 48 riders, asking whether heat changed their trip choices. Interviews revealed experiences that instruments cannot capture, including missed buses after seeking indoor relief. However, 48 volunteers cannot represent every rider. The team compared these findings with a peer-reviewed study of thermal comfort, which explains that shade can reduce radiant heat reaching people even when air temperature changes little.

3 Together, the sources point toward a practical, limited conclusion. Shade is unlikely to lower Phoenix's regional air temperature, and a small study cannot prove that shelters prevent heat illness. Still, climate records establish intense heat, measurements can compare stop conditions, rider interviews identify barriers, and thermal-comfort research explains a likely mechanism. The planners should recommend shade first at busy stops where riders wait longest, while collecting more readings across neighborhoods and seasons. They should not treat shade as the only solution. Drinking-water access, service frequency, nearby indoor spaces, and the needs of people with disabilities also affect whether a trip is safe.

2 ANSWER WITH EVIDENCE

Use the passage

1. Which source gives the planners regional heat context, and why can that source not describe conditions at one particular bus stop?

2. How do the thermometer readings and rider interviews contribute different kinds of evidence to the research question?

3. Why is the peer-reviewed thermal-comfort study useful alongside the planners' local measurements?

4. What qualified recommendation does the combined evidence support, and what additional evidence should planners collect?

3 YOUR TURN

Your own words

Choose a school or community issue. Write a focused research question, consult three different kinds of credible sources, and write a 90 to 120 word synthesis that names each source, explains how its evidence connects, and gives a qualified answer.

ANSWER KEY

Evidence Under Shade

GRADE 12 · ELA.12.C.4.1

PART 1 · READ AND MARK

Underline each named source, circle the evidence or limitation it provides, and write a short note showing how that information supports, limits, or qualifies the planners' conclusion. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Which source gives the planners regional heat context, and why can that source not describe conditions at one particular bus stop?	**National Weather Service climate records provide the regional heat context. They report citywide high temperatures, not conditions at a specific stop.**
2	How do the thermometer readings and rider interviews contribute different kinds of evidence to the research question?	**Thermometer readings compare air and surface conditions at stops. Rider interviews describe how heat affects trip choices and can reveal experiences, such as seeking indoor relief, that instruments cannot measure.**
3	Why is the peer-reviewed thermal-comfort study useful alongside the planners' local measurements?	**It explains a likely mechanism: shade can reduce radiant heat reaching people even when air temperature changes little. It helps interpret the local evidence but does not prove that shelters prevent heat illness.**
4	What qualified recommendation does the combined evidence support, and what additional evidence should planners collect?	**The planners should prioritize shade at busy stops with long waits, while collecting more temperature readings across neighborhoods and seasons. Shade should not be treated as the only safety solution.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Question: Would moving our high school start time to 8:30 a.m. improve student sleep? The CDC summarizes evidence that adolescents need 8 to 10 hours of sleep and notes that early start times can interfere with that need. The American Academy of Pediatrics recommends start times of 8:30 a.m. or later. In a peer-reviewed Seattle study, Dunster and colleagues found that a later start was associated with 34 more minutes of sleep on school nights. Together, these sources support a later start, but our district should also examine bus routes, family schedules, and local attendance data before deciding.

Accept answers that accurately distinguish what each source can show from what it cannot show. For the open task, accept varied issues and conclusions when students name three credible source types, connect their evidence, and include a reasonable limitation or condition.