

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 This classroom synthesis uses real published sources; it does not describe an actual planners' meeting. Underline each named source, circle the evidence or limitation it provides, and note how that information supports or qualifies an answer about bus-stop shade.

Shade, Heat, and Bus Stops

- ① Would shade help people waiting at bus stops in extreme heat? Different sources answer different parts of this question. National Weather Service records show that Phoenix had 31 consecutive days with highs of at least 110 degrees Fahrenheit from June 30 through July 30, 2023. This establishes a period of exceptional heat, but a weather-station record cannot describe the conditions at every stop. Regional context helps explain why an investigation matters; it does not replace measurements where people actually wait.
- ② A separate published study by Yuliya Dzyuban and colleagues examined six north-facing Phoenix stops during summer 2018 and collected 83 rider questionnaires. Researchers compared sun and shade, measured local conditions, and asked riders about heat and coping strategies. Shade generally improved a calculated thermal-comfort measure, although effectiveness varied by time and structure. This measure was not simply air temperature. The study's limited sites and survey sample restrict generalization, and the authors identified possible instrument error. Its findings cannot establish that every shelter prevents illness.

- ③ EPA's Measuring Heat Islands guidance supplies a third perspective: an assessment's purpose should determine what, where and when to measure. It distinguishes air from surface temperature and recommends representative locations and consistent methods. Read together, these sources support investigating shade while keeping the conclusion qualified. The weather record establishes context, the study contributes measured and reported experience, and the guidance helps design a useful local comparison. A reasonable next step would be to compare conditions at candidate stops across relevant times before choosing improvements. That recommendation is this classroom synthesis, not a claim that a city has already implemented or tested it.

2 ANSWER WITH EVIDENCE _____ Use the passage

- ① Which source provides regional heat context, and why can it not describe every bus stop?

- ② How do local measurements and rider questionnaires contribute different evidence in the published study?

- ③ Why should the study's findings remain qualified? Identify two limitations reported in paragraph 2.

- ④ How does the EPA guidance help connect the other sources to a practical next step?

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.

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PART 1 • READ AND MARK

This classroom synthesis uses real published sources; it does not describe an actual planners' meeting. Underline each named source, circle the evidence or limitation it provides, and note how that information supports or qualifies an answer about bus-stop shade. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	Which source provides regional heat context, and why can it not describe every bus stop?	National Weather Service records establish a period of extreme heat. A weather-station record does not measure conditions at each stop.
2	How do local measurements and rider questionnaires contribute different evidence in the published study?	Measurements describe physical conditions; questionnaires describe riders' experiences and coping strategies. They address different parts of the research question.
3	Why should the study's findings remain qualified? Identify two limitations reported in paragraph 2.	The limited sites and survey sample restrict generalization. Possible instrument error also affects interpretation. Its comfort measure should not be confused with air temperature.
4	How does the EPA guidance help connect the other sources to a practical next step?	It helps turn regional context and study findings into a local measurement plan suited to the question, including representative locations, relevant times and consistent methods.

PART 3 · YOUR TURN (SAMPLE ANSWER)

Question: What evidence should guide shade improvements at local bus stops? National Weather Service records document an extreme Phoenix heat period, establishing regional context. Dzyuban and colleagues connect measurements at six stops with rider questionnaires, showing why physical conditions and experience both matter. EPA guidance explains how to select measurements that match an assessment's purpose. Together, these sources support a careful local comparison before choosing improvements. The study's limited sample cannot represent every neighborhood, and a weather-station record cannot describe each stop. Officials should compare relevant locations and times, then evaluate the results of any action. These sources serve different purposes, so agreement must be interpreted carefully.

The supplied passage is an original classroom synthesis of identifiable sources, not an account of a municipal research project. NWS, Extreme Temperature Facts:

<https://www.weather.gov/psr/ExtremeTemps>. Dzyuban et al., Public transit infrastructure and heat perceptions in hot and dry climates, *International Journal of Biometeorology* 66 (2022), pp. 345-356, first online 2021: <https://link.springer.com/article/10.1007/s00484-021-02074-4>. EPA, Measuring Heat Islands, updated March 10, 2026: <https://www.epa.gov/heatislands/measuring-heat-islands>. These are a climate record, a research article and methodological guidance. For the open task, arrange internet/library access and research time. Require actual consultation of three credible source types, connected evidence and a qualified answer within 90-120 words; retain a source list with titles and URLs or publication details. The sample illustrates the synthesis; students must consult and identify their own sources. Other topical questions and supported conclusions are valid.