

Shade Search: From Questions to Evidence

Complete a short inquiry using credible sources and a qualified conclusion.

9.T.RA.1 "Research & Inquiry: Conduct research, generating questions to guide investigations of complex topics of interest and using credible sources to support analyses."

NAME _____ DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Read these attributed summaries of real public sources. Underline one useful finding in each. Circle a limitation or condition. Use the summaries as a printed source set; the links identify the full originals. This is a reading inquiry, with no outdoor measurements required.

A Small Research Source Set

- ① A - U.S. Environmental Protection Agency, Benefits of Trees and Vegetation (accessed September 8, 2026). Summary: Trees and other plants can lower surface and air temperatures through shade and evapotranspiration, the cooling associated with water evaporating from plants and surrounding soil. The page links research supporting the mechanisms and other benefits. This is general guidance, not a measurement at a particular bus stop. Full source:
<https://www.epa.gov/heatislands/benefits-trees-and-vegetation>
- ② B - U.S. Environmental Protection Agency, Measuring Heat Islands (accessed September 8, 2026). Summary: Begin with a clear objective and choose suitable places, times, and data. Air temperature and surface temperature describe different things. Air observations help assess conditions people experience; surface data reveal differences among roofs, pavement, and vegetation. EPA advises consistent measurement methods and documenting time and location. Combining appropriate sources can improve coverage. Full source:
<https://www.epa.gov/heatislands/measuring-heat-islands>

- ③ C - National Weather Service, Heat Forecast Tools, Heat Index section (accessed September 8, 2026). Summary: Heat index combines air temperature and relative humidity to describe how hot conditions feel. Its values were devised for shade and light wind; full sunshine can increase heat exposure. A pavement temperature is not a heat-index reading. The page explains weather tools rather than reporting conditions at a named local stop. Full source:
<https://www.weather.gov/safety/heat-index>

2 ANSWER WITH EVIDENCE _____ Use the passage

- ① How does A explain cooling, and what local claim would go beyond its evidence?

- ② Use B and C to explain why pavement temperature alone cannot establish a rider's heat index.

- ③ Why are these sources useful, and what important limit do they share?

3 YOUR TURN

Your own words

Investigate an aspect of shade and heat that interests you. Generate two focused questions, select one answerable with this source set, and conduct the inquiry by recording and comparing evidence. Write a 140–180-word analysis for a school committee, using at least two sources. Submit completed notes and analysis; a list of sources or a future plan is insufficient.

1. Ask, read, and record

Write two focused questions and select one. Read at least two source summaries (or the linked originals). For each, log its letter, agency/title, one relevant finding, and a credibility reason plus a limit. Compare two findings: do they support each other, add different information, or conflict? State why. Cite the printed summaries as summaries when using them.

[illegible]

2. Explain what the evidence supports

Write 140–180 words answering your selected question for the school committee. Attribute at least two sources by letter and agency, connect their findings, and distinguish your inference from reported information. Include a limit and one follow-up question. Check every claim against your notes. Count only the analysis; question labels and notes are outside the word count.

[illegible]

PART 1 • READ AND MARK

Read these attributed summaries of real public sources. Underline one useful finding in each. Circle a limitation or condition. Use the summaries as a printed source set; the links identify the full originals. This is a reading inquiry, with no outdoor measurements required. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	How does A explain cooling, and what local claim would go beyond its evidence?	Shade and evapotranspiration can cool surface and air temperatures. A does not establish an exact temperature change at a particular stop.
2	Use B and C to explain why pavement temperature alone cannot establish a rider's heat index.	B distinguishes surface from air temperature; C says heat index uses air temperature and humidity under specified conditions. Pavement temperature alone lacks those inputs.
3	Why are these sources useful, and what important limit do they share?	They come from agencies responsible for environmental or weather information, explain relevant mechanisms/methods, and identify evidence or conditions. They give no measurements at the specific local stop. A and B also share a publisher, so they are not independent local studies.

PART 3 · YOUR TURN (SAMPLE ANSWER)

Questions and completed notes: Q1: What can published guidance establish about shade before local measurements exist? Q2: Why can pavement temperature not establish heat index? Select Q1. A: EPA, Benefits of Trees and Vegetation; shade/evapotranspiration cool; agency explanation linked to research; no local result. B: EPA, Measuring Heat Islands; air/surface distinction and consistent methods; relevant methodological guidance; no stop data. C: NWS, Heat Forecast Tools; index uses air/humidity under specified conditions; weather-agency definition; no local result. Sources add complementary information, not conflicting measurements; A/B share a publisher. Consulted the printed summaries, accessed September 8, 2026.

Analysis: The school committee should treat shade as a promising way to reduce heat exposure, while avoiding a claim that it guarantees a particular temperature at our bus stop. This answers my question about what published guidance can establish before local measurements exist.

The printed summary of EPA Source A explains cooling through shade and evapotranspiration. EPA Source B adds that air and surface temperatures describe different conditions and that measurements need consistent methods, times, and locations. Together, these findings support investigating shade while choosing evidence that matches the question. They do not supply a local temperature difference.

The summary of NWS Source C further explains that heat index uses air temperature and humidity for shade and light wind. A pavement reading alone therefore cannot tell the committee how hot riders experience conditions. My conclusion is an inference from complementary guidance, not a tested result at our stop. A follow-up question is: What existing local air-temperature and humidity records cover the times riders wait?

Require a self-generated question, notes from at least two actually read sources, credibility reasoning, evidence comparison, and a completed 140–180-word analysis with attribution, limit and follow-up. Printed attributed summaries count as a bounded source set; teachers may provide the originals for deeper inquiry. Accept different justified answers. Neither a school-specific cooling amount nor proof of safety follows from these general sources. No field experiment is required.