

Heat Evidence Map

Trace how credible sources build a focused public-health claim.

12.T.RA.1.b “Synthesize information from a variety of credible sources to support a central thesis, citing appropriately. (I)”

NAME _____ DATE _____

1 READ AND MARK Read it twice

YOUR JOB Underline the central thesis. Circle each parenthetical citation, number each source the first time it appears, and draw arrows between sources that work together to support or qualify the thesis.

Where Trees Matter Most

- ① During heat waves, pavement and dark roofs absorb solar energy, then release it after sunset. Cities should expand and protect tree canopy first in neighborhoods with high land-surface temperatures and limited shade, while pairing trees with other heat-safety measures. A peer-reviewed field study in Madison, Wisconsin, found that daytime summer temperatures declined most where tree canopy covered at least 40 percent of an area (Ziter et al., 2019). Because the researchers measured temperatures across neighborhoods rather than merely surveying residents, their findings support the claim that canopy can reduce local heat exposure.
- ② The U.S. Environmental Protection Agency, or EPA, explains that trees cool neighborhoods through shade and evapotranspiration, the release of water vapor from leaves (EPA, n.d.). This federal scientific resource strengthens Ziter and colleagues' local evidence by explaining a physical mechanism, not just a pattern. Yet a citywide planting target alone could miss people who need relief most. The Centers for Disease Control and Prevention reports that older adults, young children, people with chronic conditions, and outdoor workers face elevated heat risk (CDC, 2024). Therefore, planners should combine temperature maps with demographic and health data when selecting sites.
- ③ Evidence also limits the argument. Trees take years to mature, need water and maintenance, and cannot make every street safe during extreme heat. The National Integrated Heat Health Information System recommends actions such as cooling centers and heat warnings alongside long-term planning (NIHHIS, n.d.). Its guidance does not contradict the canopy research, it identifies a different time scale: residents need immediate protection while trees grow. Taken together, the peer-reviewed study, federal explanation, and public-health guidance support a focused strategy, planting and preserving canopy where heat and vulnerability overlap, while funding rapid protections for dangerous days.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 State the author's central thesis in one sentence.

2 How do the Ziter study and the EPA source work together to support the thesis?

3 What two details in the passage make the Ziter study a strong source for this argument?

4 What claim does the citation "(NIHHIS, n.d.)" support, and how does that claim qualify the author's recommendation?

3 YOUR TURN _____ Your own words

Choose a school or community policy issue that is different from urban heat. Write 120 to 150 words that state a central thesis and synthesize evidence from at least three credible sources, including one peer-reviewed study and one government agency or professional organization. Cite each source in parentheses.

PART 1 • READ AND MARK

Underline the central thesis. Circle each parenthetical citation, number each source the first time it appears, and draw arrows between sources that work together to support or qualify the thesis. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	State the author's central thesis in one sentence.	Cities should prioritize tree canopy in hot, low-shade neighborhoods, especially where vulnerable people live, while also using other heat-safety measures.
2	How do the Ziter study and the EPA source work together to support the thesis?	The Ziter study provides measured evidence that greater canopy is linked to lower daytime temperatures, while the EPA explains the cooling mechanisms of shade and evapotranspiration.
3	What two details in the passage make the Ziter study a strong source for this argument?	It is peer-reviewed, and its researchers measured temperatures across neighborhoods rather than only surveying residents.
4	What claim does the citation "(NIHHIS, n.d.)" support, and how does that claim qualify the author's recommendation?	It supports the need for cooling centers and heat warnings. It qualifies the recommendation by showing that immediate protections are needed while trees mature over time.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Our district should move high school start times to 8:30 a.m. or later because adolescent sleep supports learning and health. The American Academy of Pediatrics recommends this schedule because teenagers' biological sleep rhythms shift later (American Academy of Pediatrics, 2014). The CDC states that teens ages 13 to 18 need 8 to 10 hours of sleep, showing why a schedule change targets a documented need (CDC, n.d.). In a peer-reviewed study of Seattle students, a 55-minute later start was associated with 34 more minutes of nightly sleep and higher grades (Dunster et al., 2018). Although transportation and activities would need revision, these sources together support a later start as a practical health and learning policy. The district should also survey families before finalizing bus routes and preserve access to breakfast and extracurricular programs.

Accept accurate paraphrases of the thesis and explanations that identify each source's distinct contribution. For Part 3, accept varied topics when the response has a clear thesis, genuinely combines at least three credible sources, and cites each source.