Heat Map Thinking

Use new evidence to revise what you think you know.

9.P.EICC.3.c "Draw from, compare, build, and integrate prior knowledge with the material in the text, addressing inconsistencies or gaps and adding to knowledge repertoires as appropriate. (I)"

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline one idea that might match what you already believed, circle two details that add to or complicate that idea, and number one gap in the information. Use your marks to compare prior knowledge with the passage's evidence.

Why Some City Blocks Stay Hot

1 On a summer afternoon, two neighborhoods in the same city can feel very different. Streets, parking lots, and dark roofs absorb sunlight and release heat slowly. This pattern is called an urban heat island. A block with few trees may stay warmer after sunset than a nearby park. Many people expect temperatures to drop quickly once the sun sets, but surfaces that stored heat can keep the air warm. City planners study this difference because heat can affect sleep, health, and electricity use, especially during long heat waves.

2 At first, planting trees may seem like a simple cure for every hot block. Trees do shade sidewalks and buildings, and water released from leaves can cool the surrounding air. Yet shade is not identical in every location. A young tree has a small canopy, while a mature tree may shade a much larger area. Water, soil space, and regular care also affect whether a tree survives. In places where underground pipes or narrow sidewalks limit planting, cities may use lighter-colored roofs, reflective pavement, or shaded bus shelters. These choices add to, rather than replace, the benefit of trees.

3 Researchers do not assume that one solution works everywhere. To decide which strategies help, they compare temperature readings from different blocks at several times of day and night. They also ask residents about shade, cooling costs, and access to safe indoor spaces. A map may show that a neighborhood has more trees, but it may not show whether people can reach those trees or whether homes have air conditioning. Combining measurements with residents' experiences fills gaps that either source leaves behind. The result is a fuller understanding of how heat affects daily life.

2 ANSWER WITH EVIDENCE

Use the passage

1. What expectation about evening temperatures does the passage challenge? What evidence in the passage changes that expectation?

2. Compare a young tree with a mature tree. How does this comparison complicate the idea that planting any tree will cool a block right away?

3. What important information can be missing from a map that shows the number of trees in a neighborhood? Name one way researchers can fill that gap.

4. Why should city planners use both temperature measurements and residents' experiences when deciding how to reduce heat?

3 YOUR TURN

Your own words

Choose a familiar place that gets hot. Write exactly three sentences: state a belief you had about cooling that place, explain how one idea from the passage supports or complicates that belief, and name one missing piece of information you would investigate and how you would investigate it.

ANSWER KEY

Heat Map Thinking

GRADE 9 · 9.P.EICC.3.c

PART 1 · READ AND MARK

Underline one idea that might match what you already believed, circle two details that add to or complicate that idea, and number one gap in the information. Use your marks to compare prior knowledge with the passage's evidence. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	What expectation about evening temperatures does the passage challenge? What evidence in the passage changes that expectation?	**It challenges the idea that temperatures always drop quickly after sunset. Streets, parking lots, and roofs can store heat and release it slowly, keeping the air warm.**
2	Compare a young tree with a mature tree. How does this comparison complicate the idea that planting any tree will cool a block right away?	**A young tree has a small canopy, while a mature tree can shade a much larger area. Therefore, newly planted trees may not provide the same immediate cooling as mature trees.**
3	What important information can be missing from a map that shows the number of trees in a neighborhood? Name one way researchers can fill that gap.	**The map may not show whether people can reach the trees or whether homes have air conditioning. Researchers can ask residents about shade, cooling costs, and access to safe indoor spaces.**
4	Why should city planners use both temperature measurements and residents' experiences when deciding how to reduce heat?	**Temperature measurements show conditions on different blocks and at different times, while residents' experiences reveal needs and access that measurements or maps may miss.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

I used to think a shaded bus stop would make the whole street cool. The passage explains that shade depends on location and size, so the bus stop may help waiting riders without cooling the entire block. I would find out how hot the sidewalk remains after sunset by comparing evening temperature readings at the stop and on an unshaded block.

Accept answers that accurately connect a prior belief to a relevant passage detail and identify a genuine information gap. For the open task, require exactly three sentences, a clear comparison or revision of thinking, and a realistic way to investigate the gap.