Beyond the Canopy

Compare familiar ideas with evidence to build a more complete conclusion.

12.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 details that connect to something you may already know about city heat. Circle details that complicate or limit an assumption, and number 1, 2, and 3 beside details that add a source or piece of evidence you would combine before making a decision.

Trees, Heat, and Better Decisions

1 City residents often know that pavement feels hotter than grass on a sunny afternoon. That observation connects to the urban heat island effect, in which buildings, roads, and other surfaces absorb and release heat. Trees can reduce heat exposure by shading sidewalks and walls, and by moving water from leaves into the air through transpiration. In many cities, neighborhoods with sparse tree canopy also have less shade at bus stops, parks, and homes. Yet a map of canopy alone does not tell residents who can reach a cool place, or which blocks are hottest after sunset.

2 A common conclusion is that any tree-planting project will cool a neighborhood right away. The evidence is more complicated. Young trees have small canopies, and their cooling effect grows as they mature. In dry regions, trees may need irrigation to survive, so planners must weigh water use against shade and other benefits. Species and location matter too, because a tree that thrives in one climate may fail in another, and poorly placed trees can interfere with sidewalks, power lines, or visibility. These limits do not cancel the value of trees. They show why a familiar solution needs local evidence and long-term planning.

3 To decide where to invest, a city could combine several kinds of knowledge. Satellite images can show broad patterns of tree canopy, while temperature sensors can record conditions on particular streets at particular times. Residents can add information that neither source supplies, such as whether a shaded route is safe, accessible, and open when people need it. Comparing these sources may reveal gaps. For example, a block with visible trees might still lack shade at a bus stop, or a low-canopy area might have an air-conditioned library nearby. A stronger plan would use the data, test assumptions through local observation, and revise priorities as new evidence appears.

2 ANSWER WITH EVIDENCE

Use the passage

1. What familiar observation does the first paragraph connect to the urban heat island effect? Explain how the observation supports that connection.

2. Identify the assumption about tree planting that the second paragraph complicates. Give two details from the paragraph that complicate it.

3. What information can residents provide that satellite images and temperature sensors may not provide? Why could that information change a city's decision?

4. Explain one gap in using only a tree-canopy map to choose where to invest. Use one example from the passage.

3 YOUR TURN

Your own words

Choose a public place you know, such as a school route, park, or bus stop. In exactly 3 sentences, state a prior assumption, use two specific passage details to confirm or complicate it, and identify one additional local fact you would need before making a decision.

ANSWER KEY

Beyond the Canopy

GRADE 12 · 12.P.EICC.3.c

PART 1 · READ AND MARK

Underline details that connect to something you may already know about city heat. Circle details that complicate or limit an assumption, and number 1, 2, and 3 beside details that add a source or piece of evidence you would combine before making a decision. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	What familiar observation does the first paragraph connect to the urban heat island effect? Explain how the observation supports that connection.	**The observation is that pavement feels hotter than grass on a sunny afternoon. It supports the connection because built surfaces can absorb and release heat.**
2	Identify the assumption about tree planting that the second paragraph complicates. Give two details from the paragraph that complicate it.	**The assumption is that any tree-planting project will cool a neighborhood right away. Young trees have small canopies, and trees in dry regions may need irrigation to survive.**
3	What information can residents provide that satellite images and temperature sensors may not provide? Why could that information change a city's decision?	**Residents can report whether a shaded route is safe, accessible, and open when needed. This could change a decision because canopy or temperature data alone may not show whether people can actually use a cool route or place.**
4	Explain one gap in using only a tree-canopy map to choose where to invest. Use one example from the passage.	**A canopy map does not show all conditions people need. For example, a block with visible trees might still lack shade at a bus stop.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

I used to assume that adding trees near my school would immediately make the walk home cooler. The passage complicates this idea because young trees have small canopies and a tree-filled block can still leave a bus stop unshaded. Before choosing a site, I would find out when students wait for buses and whether the route is safe and accessible.

Accept equivalent explanations that accurately connect prior knowledge, passage evidence, and a remaining gap. For the open response, verify exactly three sentences, two specific passage details, and one relevant local fact still needed.