Heat Map Detectives

Use predictions, evidence, and reflection to build meaning from an informational text.

8.P.EICC.3 "Comprehension Strategies: Engage with a range of complex texts for a variety of tasks and purposes, accessing and using strategies for comprehension* before, during, and after reading as part of the meaning-making process."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB As you read, underline the study's purpose, circle the surprising result, and number three details that explain why that result makes sense. These marks will help you track your thinking and prepare an evidence-based summary.

Mapping a Hot City

(1) On a July morning, volunteers in Phoenix, Arizona, walked set routes with small sensors clipped to their backpacks. The sensors recorded air temperature and humidity every few seconds. Their goal was not simply to find the hottest day. City planners wanted a detailed map showing how heat changed from block to block. Pavement, shade, building materials, and access to water can make two nearby streets feel very different. The data would let officials compare hot places with local features.

(2) When the maps were finished, some patterns matched expectations. Areas with wide asphalt roads and few trees were often warmer, especially after sunset, because pavement stores heat and releases it slowly. Yet the volunteers found cooler spots beside certain parking lots. At first, that detail seemed to weaken the idea that pavement raises temperatures. A closer look provided another clue: these lots had shade structures covered with solar panels. The panels blocked direct sunlight while also producing electricity. The finding showed why the volunteers recorded conditions across many locations.

(3) Phoenix uses these maps to guide decisions, such as where to plant trees, add shade, or open cooling centers. The maps do not prove that one change will solve every heat problem. For example, trees need water and years to grow, and shade structures cost money to build and maintain. Still, the data help planners compare needs instead of guessing. City officials can combine heat maps with information about residents, transit stops, and buildings before deciding where support is most urgent. The project turns thousands of temperature readings into a tool for planning safer spaces.

2 ANSWER WITH EVIDENCE

Use the passage

1. Before reading paragraph 2, predict which areas might be hotter. Use two details from paragraph 1 to support your prediction.

2. What was the volunteers' main purpose for collecting temperature and humidity data?

3. What surprising result did the volunteers find, and which two details explain it?

4. After reading, what caution should be included in a summary of how Phoenix can use the maps?

3 YOUR TURN

Your own words

Write a 50 to 70 word after-reading note for a city council member. State the study's overall message, include two precise details from different paragraphs, and end with one unanswered question.

ANSWER KEY

Heat Map Detectives

GRADE 8 · 8.P.EICC.3

PART 1 · READ AND MARK

As you read, underline the study's purpose, circle the surprising result, and number three details that explain why that result makes sense. These marks will help you track your thinking and prepare an evidence-based summary. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Before reading paragraph 2, predict which areas might be hotter. Use two details from paragraph 1 to support your prediction.	**Areas with more pavement and less shade might be hotter. Paragraph 1 says pavement and shade can make nearby streets feel very different.**
2	What was the volunteers' main purpose for collecting temperature and humidity data?	**They wanted to create a detailed map showing how heat changed from block to block for city planners.**
3	What surprising result did the volunteers find, and which two details explain it?	**They found cooler spots beside some parking lots. Those lots had shade structures covered with solar panels, and the panels blocked direct sunlight.**
4	After reading, what caution should be included in a summary of how Phoenix can use the maps?	**The maps do not prove that one change will solve every heat problem. Trees and shade structures also require time, water, or money.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Phoenix volunteers used backpack sensors to map temperature and humidity block by block. The study shows that shade and surface materials can change local heat, even near pavement. Solar-panel shade structures helped explain cooler parking-lot areas. Planners can use the maps when choosing places for trees or cooling centers. How do these heat patterns differ during winter nights?

Accept predictions supported by details from paragraph 1, even if students phrase the prediction differently. For the open response, check for a clear overall message, two accurate details from different paragraphs, a relevant unanswered question, and a 50 to 70 word length.