Heat Has a Map

Trace how evidence builds an author's purpose.

9.RI.1.A "Analyze the development of main ideas over the course of texts, including how they emerge, are shaped, and are refined by specific details to help reveal the author's intended purpose for writing."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline details that develop the passage's main idea, and write 1, 2, or 3 beside details that show how the idea changes across the paragraphs. Circle words or phrases that reveal the author's purpose.

Designing Cooler Cities

1 On a July afternoon, pavement in many cities can become far hotter than the air. Dark roofs, parking lots, and roads absorb sunlight, then release heat slowly after sunset. This pattern, called the urban heat island effect, can make nighttime temperatures especially dangerous for people without air conditioning. Researchers measure the difference by comparing city weather stations with nearby rural stations. Their findings show that heat is not only a personal discomfort. It is a public health problem shaped by how neighborhoods are built and maintained.

2 Early efforts to cool cities often focused on individual buildings. Homeowners planted shade trees or painted roofs white, choices that can lower indoor temperatures. Yet citywide maps revealed an uneven pattern: neighborhoods with fewer trees often had more pavement and higher temperatures. In Phoenix, Arizona, officials have used thermal images and tree-canopy data to identify blocks needing relief. These details shift the discussion from private choices to shared planning. They suggest that heat protection depends not only on what residents can afford, but also on where a city invests its land, money, and attention.

3 Some solutions now combine cooler surfaces with programs designed for fairness. Light-colored pavement and roofs reflect more sunlight than dark materials, while trees cool streets through shade and water released from leaves. However, a new park or row of trees does not automatically serve everyone. Young trees need watering, and renters may have little control over their buildings. By ending with these limits, the evidence refines the main idea again: cities can reduce heat, but effective plans must direct lasting resources to the residents facing the greatest risk. Together, these points show why heat policy should be both practical and equitable.

2 ANSWER WITH EVIDENCE

Use the passage

1. What main idea emerges in paragraph 1? Use two details from the paragraph to support your answer.

2. How does paragraph 2 shape the main idea from paragraph 1? Explain how the maps and Phoenix example add to the idea.

3. How does paragraph 3 refine the passage's main idea? Identify the limit that the author adds and explain why it matters.

4. What is the author's intended purpose? Explain how the passage's progression from paragraph 1 to paragraph 3 reveals that purpose.

3 YOUR TURN

Your own words

Write exactly four sentences that analyze how the main idea develops across the whole passage. State the main idea, use a detail from each paragraph, and explain the author's purpose.

ANSWER KEY

Heat Has a Map

GRADE 9 · 9.RI.1.A

PART 1 · READ AND MARK

Underline details that develop the passage's main idea, and write 1, 2, or 3 beside details that show how the idea changes across the paragraphs. Circle words or phrases that reveal the author's purpose. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	What main idea emerges in paragraph 1? Use two details from the paragraph to support your answer.	**Urban heat is a public health problem shaped by city design. Dark surfaces absorb and release heat, and nighttime heat can endanger people without air conditioning.**
2	How does paragraph 2 shape the main idea from paragraph 1? Explain how the maps and Phoenix example add to the idea.	**Paragraph 2 shows that heat risk is uneven across neighborhoods. Maps, thermal images, and tree-canopy data show that city planning and investment affect which blocks need protection.**
3	How does paragraph 3 refine the passage's main idea? Identify the limit that the author adds and explain why it matters.	**It refines the idea by showing that cooling projects alone are not enough. Trees need care, and renters may not control their buildings, so plans must provide lasting resources to high-risk residents.**
4	What is the author's intended purpose? Explain how the passage's progression from paragraph 1 to paragraph 3 reveals that purpose.	**The author aims to argue for practical and equitable heat policy. The passage moves from explaining urban heat, to showing unequal neighborhood risk, to calling for lasting support for residents facing the greatest risk.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

The passage develops the idea that urban heat is a public problem created by city design. First, the comparison of city and rural weather stations shows that built surfaces can keep neighborhoods hot at night. Next, Phoenix maps and tree-canopy data show that this danger is uneven, so planning matters. Finally, the limits of planting trees alone support the author's purpose of arguing for practical, fair investments for residents at greatest risk.

Accept equivalent statements that trace the idea from urban heat, to unequal risk, to equitable long-term solutions. Responses should explain how specific details support the author's purpose, not merely list facts from the passage.