Heat Map Logic

Track how structure and details shape an informational message.

11.RI.2.A "Examine how textual elements and organizational patterns contribute to meaning and the author's purpose."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline phrases that compare conditions or show a problem, cause, limitation, or response. Then number 1, 2, and 3 beside the passage's three main stages to show how its organization builds its message.

Mapping City Heat

1 On a July afternoon, pavement in a treeless Phoenix neighborhood can become far hotter than the air above it. Dark roofs and roads absorb sunlight, then release stored heat after sunset. This urban heat island effect matters most at night, when bodies need cooler temperatures to recover. It also does not affect every block equally. Streets with shade, parks, and lighter-colored surfaces may stay cooler than nearby areas dominated by asphalt. To show this uneven risk, researchers and residents have begun making detailed heat maps, block by block, rather than relying only on one airport weather station.

2 Heat mapping is organized as a comparison. Volunteers carry sensors along planned routes at the same time of day, measuring air temperature and humidity. Their results can reveal a difference that a citywide average hides: one route may be several degrees warmer than another. The contrast is not merely a dramatic detail. It directs attention toward places where bus riders wait without shade, apartment buildings trap heat, or older residents have fewer cooling options. By moving from measurements to daily consequences, the information gives local officials a reason to treat heat as a public-health issue, not simply as summer discomfort.

3 Maps do not cool a street by themselves, so cities use them to choose responses. In Phoenix, heat data have supported planning for shade structures, trees, and cooling centers, though each response has limits. Young trees require water and years of care before they provide broad shade. Cooling centers can protect people during emergencies, but they must be reachable and open when needed. This final problem-and-response structure prevents a simple conclusion: no single project erases heat risk. Instead, the passage ends by emphasizing coordinated choices, connecting the earlier evidence to decisions readers can evaluate.

2 ANSWER WITH EVIDENCE

Use the passage

1. How does the comparison between shaded streets and areas dominated by asphalt in paragraph 1 support the passage's purpose?

2. How does paragraph 2 move from measurements to daily consequences, and why is that organizational move effective?

3. What is the purpose of the sentence, "The contrast is not merely a dramatic detail"?

4. How do the limits of trees and cooling centers shape the conclusion in paragraph 3?

3 YOUR TURN

Your own words

Write a three-sentence mini informational passage about a school or local issue. Use either comparison or problem-and-response organization and include at least two signal phrases, then add one sentence that names your pattern and explains how it supports your purpose.

ANSWER KEY

Heat Map Logic

GRADE 11 · 11.RI.2.A

PART 1 · READ AND MARK

Underline phrases that compare conditions or show a problem, cause, limitation, or response. Then number 1, 2, and 3 beside the passage's three main stages to show how its organization builds its message. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How does the comparison between shaded streets and areas dominated by asphalt in paragraph 1 support the passage's purpose?	**It shows that heat risk differs from block to block, which explains why detailed local heat maps are needed.**
2	How does paragraph 2 move from measurements to daily consequences, and why is that organizational move effective?	**It begins with sensor data, then connects temperature differences to people waiting for buses, living in hot buildings, or needing cooling. This makes the data show why heat requires public-health action.**
3	What is the purpose of the sentence, "The contrast is not merely a dramatic detail"?	**It tells readers that the temperature difference is important because it identifies places and people needing attention, not because it is simply surprising.**
4	How do the limits of trees and cooling centers shape the conclusion in paragraph 3?	**The limits make the conclusion more qualified: cities need coordinated responses because no single project can erase heat risk.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

At noon, the library's west windows make the study tables bright and hot, while the interior tables remain cooler. Window film could reduce glare, but it would need funding and professional installation. Because the problem affects concentration, the school could test film on one window section before making a larger purchase. This problem-and-response pattern moves from a specific concern to a practical next step, supporting my purpose of recommending a careful solution.

Accept equivalent explanations that connect a textual feature or organizational choice to the passage's message about unequal heat risk and coordinated action. For the open response, accept any accurate topic that uses the stated structure, includes two signal phrases, and explains the structure's purpose.