

Heat Map Logic

Trace how each paragraph builds an explanation.

10.RI.2.A "Analyze how authors use structure to explain relationships among concepts in a text, including how key sentences, paragraphs, and sections of texts contribute to the whole."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline one sentence in each paragraph that most clearly signals that paragraph's role, then write a two- to four-word label in the margin explaining what that paragraph adds to the article.

Why Cities Hold Heat

- ① On a summer afternoon, a city block can feel much hotter than a nearby park. Differences like this are part of the urban heat island effect, in which built areas are warmer than less developed surroundings. Dark roofs and pavement absorb sunlight, then release stored heat slowly after sunset. Buildings can also block breezes that would cool pedestrians. As cities replace soil and plants with hard surfaces, they reduce shade and evaporation. The result is not only uncomfortable sidewalks. Higher temperatures can increase air-conditioning use and place greater stress on people who work or live without reliable cooling.
- ② Researchers measure this effect by comparing temperatures at several locations. First, they use sensors to record air temperature above pavement, grass, and shaded ground at the same time. They may also use satellites, which measure land-surface temperatures from thermal infrared energy. These comparisons reveal a pattern: pavement usually becomes hotter than grass in direct sun, while tree shade lowers surface temperatures. However, a single reading cannot explain an entire neighborhood. Measurements at different hours and seasons help researchers separate short-term weather changes from the lasting influence of streets, roofs, and vegetation.
- ③ Because the evidence links hard surfaces and limited shade to higher heat, city planners can target those conditions. Planting street trees cools sidewalks by shading them and by releasing water vapor through transpiration. Reflective roofs send more sunlight back into the atmosphere than dark roofs do, so they can reduce roof temperatures. These strategies work best when planners consider local needs, such as where older residents wait for buses or where apartments lack air conditioning. In this way, the article moves from a visible problem, to evidence about its causes, to choices that can reduce its effects.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 How does the opening sentence of paragraph 1 help organize the article's explanation?

2 What structural shift does the word "However" create in paragraph 2?

3 How does paragraph 2 prepare the reader for paragraph 3?

4 What does the final sentence reveal about the overall structure of the article?

3 YOUR TURN _____ Your own words

Choose a different environmental or community issue. Write exactly four sentences: introduce the problem, explain evidence or a cause, give a response, and explain how the evidence or cause sentence connects to the response sentence.

PART 1 • READ AND MARK

Underline one sentence in each paragraph that most clearly signals that paragraph's role, then write a two- to four-word label in the margin explaining what that paragraph adds to the article. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	How does the opening sentence of paragraph 1 help organize the article's explanation?	It introduces a concrete contrast between a hot city block and a cooler park, which leads into the explanation of why built areas hold heat.
2	What structural shift does the word "However" create in paragraph 2?	It shifts from a pattern shown by comparisons to the limitation of relying on one temperature reading, then explains why more measurements are needed.
3	How does paragraph 2 prepare the reader for paragraph 3?	Paragraph 2 provides evidence that pavement and limited shade raise temperatures, so paragraph 3 can present solutions that address those conditions.
4	What does the final sentence reveal about the overall structure of the article?	The article is organized from a visible problem, to evidence about causes, to responses that can reduce the effects.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Plastic waste accumulates on beaches when litter and poorly managed trash enter waterways. Surveys of shoreline debris and studies of currents show how this material reaches coastal habitats. Communities can reduce the flow by improving waste collection and limiting single-use items. The evidence sentence explains the problem's pathway, so it leads logically to the response sentence.

Accept reasonable paragraph-role labels that identify paragraph 1 as introducing the issue and causes, paragraph 2 as presenting and qualifying evidence, and paragraph 3 as offering responses. For the open task, accept any accurate issue and a clear logical connection from evidence or cause to response.