City Heat Clues

Study how precise and vivid language explains a city science problem.

CCSS.ELA-Literacy.RI.7.4 "Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of a specific word choice on meaning and tone."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline one technical term in each paragraph, circle two figurative or strongly connotative phrases, and write a 1 beside the circled phrase that creates the most concerned tone.

Why Cities Stay Hot

1 On a July afternoon, a city block can feel like an oven. Dark asphalt and rooftops absorb sunlight, then release heat slowly after sunset. This pattern is called an urban heat island, a place where built-up areas are warmer than nearby parks or fields. Trees soften the effect. Their shade blocks some solar energy, and water evaporating from leaves cools the surrounding air. On streets with few trees, heat can settle like a heavy blanket.

2 Scientists map heat islands with temperature sensors, instruments that measure how warm something is. They often compare surface temperature, the warmth of pavement or a roof, with air temperature measured a few feet above the ground. A black parking lot may have a much higher surface temperature than the air nearby. Satellite images can show these hot spots across an entire city. The images do not mean every person feels the same temperature, but they help planners locate areas that may need shade, lighter roofs, or cooler pavement.

3 City leaders can lower heat risks by planting and caring for trees, especially near bus stops, schools, and homes. They can also install cool roofs, which reflect more sunlight than dark roofs do. These changes will not erase summer heat, but they can give neighborhoods a measure of relief. The goal is not to paint the city into a perfect paradise. It is to replace some of its heat-trapping surfaces with places where people can walk, wait, and breathe more comfortably.

2 ANSWER WITH EVIDENCE

Use the passage

1. What does the technical term "urban heat island" mean in paragraph 1?

2. What does "surface temperature" mean in paragraph 2? Use details from the passage.

3. What does the comparison "heat can settle like a heavy blanket" suggest? How does it affect the tone?

4. Why does the author call some city materials "heat-trapping surfaces" instead of simply "warm surfaces"?

3 YOUR TURN

Your own words

Write exactly two sentences about one place near your school that gets hot in summer. Use one technical term from the passage and one figurative or connotative phrase, then explain how your phrase affects the tone.

ANSWER KEY

City Heat Clues

GRADE 7 · RI.7.4

PART 1 · READ AND MARK

Underline one technical term in each paragraph, circle two figurative or strongly connotative phrases, and write a 1 beside the circled phrase that creates the most concerned tone. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	What does the technical term "urban heat island" mean in paragraph 1?	**A built-up area of a city that is warmer than nearby parks or fields.**
2	What does "surface temperature" mean in paragraph 2? Use details from the passage.	**The temperature of a surface, such as pavement or a roof.**
3	What does the comparison "heat can settle like a heavy blanket" suggest? How does it affect the tone?	**It suggests that heat lingers and feels oppressive. It creates a concerned, uncomfortable tone.**
4	Why does the author call some city materials "heat-trapping surfaces" instead of simply "warm surfaces"?	**Heat-trapping shows that the surfaces hold onto heat, not just that they are warm. The phrase makes the problem sound more serious.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

The blacktop beside the basketball court has a high surface temperature at noon, turning the area into a sizzling pan. The phrase "sizzling pan" creates an uncomfortable, cautionary tone by making the heat seem intense.

Accept equivalent definitions supported by context. For the open task, accept varied school locations and language choices if the technical term is accurate and the explanation clearly connects the chosen phrase to tone.