

Heat Words at Work

Use context to unpack academic and science vocabulary.

9-10L6 "Acquire and accurately use general academic and content-specific words and phrases, sufficient for reading, writing, speaking, and listening..."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline four words or phrases that carry key ideas about urban heat. Circle nearby words that help you infer the meaning of each underlined term.

Cooling a City

- ① On a July afternoon, a parking lot can feel far hotter than a nearby shaded park. This difference is part of the urban heat island effect, a pattern in which built-up areas retain more heat than surrounding places. Dark roofs and asphalt absorb sunlight, then release stored energy slowly after sunset. Trees change those conditions. Their leaves form a canopy that blocks some direct sunlight, while water evaporating from leaves can cool the air. The effect is not merely uncomfortable: sustained heat can strain bodies, raise energy use, and worsen air quality.
- ② Cities can mitigate extreme heat through several connected choices that lower surface and air temperatures. Light-colored roofs reflect more solar energy than dark surfaces. Parks, street trees, and green roofs increase shade and evaporation. Permeable pavement lets rainwater soak into the ground instead of rushing across a sealed surface, which can support cooler, greener spaces. These measures are forms of infrastructure, the shared systems that make daily life work. A single tree helps, but a coordinated plan can alter conditions across an entire neighborhood.
- ③ Heat does not affect every resident equally. Neighborhoods with fewer trees or more pavement may be disproportionately hot, meaning they experience a larger share of the problem than other areas. Older adults, outdoor workers, and people without dependable air conditioning can face greater health risks during heat waves. For that reason, an equitable heat plan directs resources where the need is greatest, rather than spreading them evenly without examining local conditions. Residents can contribute observations about hot bus stops, treeless blocks, and costly cooling bills, giving planners evidence for wiser decisions.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 In paragraph 2, what does *mitigate* mean? Quote a phrase that helped you infer its meaning.

2 How does the description of *permeable pavement* help you understand the word *permeable*?

3 What does *disproportionately* mean in paragraph 3? Identify the comparison that reveals its meaning.

4 Why would spreading heat resources evenly not always be *equitable*, according to the passage?

3 YOUR TURN _____ Your own words

Write a 70-90 word proposal to reduce heat at a place students use, such as a bus stop or school entrance. Use two precise terms from the passage, and make each term's meaning clear from context.

PART 1 • READ AND MARK

Underline four words or phrases that carry key ideas about urban heat. Circle nearby words that help you infer the meaning of each underlined term. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	In paragraph 2, what does <i>mitigate</i> mean? Quote a phrase that helped you infer its meaning.	Mitigate means reduce or lessen. The phrase “lower surface and air temperatures” is a context clue.
2	How does the description of <i>permeable pavement</i> help you understand the word <i>permeable</i> ?	It lets rainwater soak into the ground instead of rushing across a sealed surface, so permeable means allowing water to pass through.
3	What does <i>disproportionately</i> mean in paragraph 3? Identify the comparison that reveals its meaning.	It means to a greater degree or in a larger share than others. The comparison is “a larger share of the problem than other areas.”
4	Why would spreading heat resources evenly not always be <i>equitable</i> , according to the passage?	Different neighborhoods have different levels of need, so equitable plans direct more resources where the need is greatest.

PART 3 • YOUR TURN (SAMPLE ANSWER)

At the bus stop near our school, the city should create a tree canopy so waiting riders are shaded from direct afternoon sun. It should replace part of the cracked sidewalk with permeable pavement, which lets rain soak into soil where new plants can grow. These improvements would make the stop cooler and safer for students and older riders. Because this corner has no nearby shade, it should receive resources before already leafy streets.

Accept equivalent definitions when students support them with accurate context from the passage. For the open response, verify the 70-90 word range, two passage terms used accurately, and a specific heat-reduction proposal.