Mapping the Heat

Trace how clues shape literal and suggested meanings.

ELA.12.V.1.3 "Apply knowledge of context clues, figurative language, word relationships, reference materials, and/or background knowledge to determine the connotative and denotative meaning of words and phrases, appropriate to grade level."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline at least six words or phrases whose meanings are clarified by nearby clues. Circle three comparisons or terms that suggest more than a literal meaning, then number the clue words that helped you interpret each one.

Reading a City Heat Map

(1) On a July afternoon, volunteers in Phoenix drove assigned routes with small temperature sensors attached to their cars. The project, called heat mapping, recorded air temperatures block by block during the hottest part of the day. Researchers expected variation, but the data revealed a patchwork: shaded streets near parks were cooler, while wide parking lots stored heat like cast-iron skillets. This difference is not merely uncomfortable. High nighttime temperatures can keep homes warm after sunset, increasing the risk of heat illness for people without reliable air conditioning. A map can therefore show where shade, trees, and cooling centers may be needed most.

(2) Scientists often call an unusually warm city area an urban heat island. The term does not mean the neighborhood is surrounded by water. Instead, it compares the area to an island because it is noticeably warmer than nearby land or suburbs. Dark roofs and pavement absorb sunlight, then release energy slowly. Trees interrupt that process by providing shade and by moving water from leaves into the air. In reports, officials may describe residents as vulnerable, a word meaning more likely to be harmed by extreme heat. The label can guide resources, yet it can also sound impersonal if it hides the experiences and choices of actual people.

(3) To interpret a heat map, readers need more than a color key. A deep red zone usually indicates a higher measured temperature, not a fire or an emergency by itself. Background knowledge also matters: asphalt, a dark petroleum-based paving material, generally absorbs more solar energy than a pale, reflective surface. Still, a map is evidence, not a verdict. A cooler reading beside a hospital does not prove that every patient is safe, and a hotter reading does not prove that officials ignored the area. Readers should distinguish what a term denotes, its direct definition, from what it suggests or connotes in a particular situation.

2 ANSWER WITH EVIDENCE

Use the passage

1. What does the term “urban heat island” denote in this passage? Identify the context clues that rule out its meaning as an island surrounded by water.

2. How does the comparison “stored heat like cast-iron skillets” shape the meaning of the parking lots?

3. In the second paragraph, what does “vulnerable” denote, and what connotation can the label carry when used for residents?

4. What does a deep red zone on the heat map denote, and what mistaken conclusion does the passage tell readers not to make?

3 YOUR TURN

Your own words

Write two sentences, 45 to 65 words, proposing a heat-reduction choice for a public place. Use one figurative phrase and one word with a strong connotation, then include context that makes each meaning clear.

ANSWER KEY

Mapping the Heat

GRADE 12 · ELA.12.V.1.3

PART 1 · READ AND MARK

Underline at least six words or phrases whose meanings are clarified by nearby clues. Circle three comparisons or terms that suggest more than a literal meaning, then number the clue words that helped you interpret each one. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	What does the term "urban heat island" denote in this passage? Identify the context clues that rule out its meaning as an island surrounded by water.	**It denotes a city area that is noticeably warmer than nearby land or suburbs. The passage says it does not mean the neighborhood is surrounded by water and explains that the term compares the warmer area to an island.**
2	How does the comparison "stored heat like cast-iron skillets" shape the meaning of the parking lots?	**It suggests that parking lots absorb, hold, and slowly release a great deal of heat, making them seem intensely heat-retaining.**
3	In the second paragraph, what does "vulnerable" denote, and what connotation can the label carry when used for residents?	**It denotes being more likely to be harmed by extreme heat. It can sound impersonal because it may hide residents' individual experiences and choices.**
4	What does a deep red zone on the heat map denote, and what mistaken conclusion does the passage tell readers not to make?	**It denotes a higher measured temperature. It does not automatically mean there is a fire or an emergency.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Planting trees at a bus stop would form a leafy umbrella, because their branches would shade riders from direct sun. The stop could become a refuge, a place where people can rest safely, and that word suggests relief and protection rather than an ordinary waiting space.

Accept varied proposals if both sentences total 45 to 65 words and include a clear figurative phrase, a connotative word, and context that clarifies each meaning. The response should distinguish literal information from suggested feeling or association.