Heat Plan Puzzle

Connect evidence to understand how cities can reduce dangerous heat.

8.5.H "synthesize information to create new understanding; and"

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline facts about where heat is strongest, circle details about people or health, and number each solution or limit. Use your marks to connect different kinds of evidence as you read.

Planning for Hotter Streets

1. On a July afternoon, the temperature on a shaded city sidewalk can feel very different from the temperature on a nearby blacktop parking lot. Dark pavement absorbs sunlight and releases heat slowly, while trees block some sunlight and cool air as water evaporates from their leaves. This pattern is called the urban heat island effect. Researchers use satellites, street sensors, and temperature readings to map hot areas. Their maps often show that neighborhoods with fewer trees and more pavement are warmer than nearby parks or leafy streets.

2. Heat maps do more than identify uncomfortable places. Public health workers compare them with reports of heat illness, because extreme heat can be dangerous, especially for older adults, outdoor workers, and people without air conditioning. In one city, planners found that bus stops in the hottest districts had little shade. They added shelters with roofs and planted young trees nearby. The shelters provided immediate protection, but the trees would need years to grow large enough to cast wide shade. The plan combined a short-term response with a longer-term change.

3. Planting trees is not a complete solution. New trees need water, pruning, and protection from damage, and some locations have underground pipes or limited soil. For that reason, cities may pair trees with other choices, such as cool roofs that reflect more sunlight, drinking-water stations, and shaded bus shelters. A useful heat plan considers where people spend time, which blocks are hottest, and which actions work now or later. By connecting temperature data, health concerns, and practical limits, leaders can choose several actions instead of treating every neighborhood the same.

2 ANSWER WITH EVIDENCE

Use the passage

1. How do the heat maps in paragraph 1 and the health reports in paragraph 2 work together to help planners make decisions?

2. What does the example of shelters and young trees show about using more than one solution?

3. Why is a plan with several actions stronger than planting trees alone? Use details from paragraph 3.

4. What conclusion can you draw about why cities should not treat every neighborhood the same?

3 YOUR TURN

Your own words

Write a three-sentence recommendation for reducing heat near your school or another familiar place. Include one action that could help soon, one action that could help later, and evidence or a practical limit from the passage.

ANSWER KEY # Heat Plan Puzzle

GRADE 8 · TEKS 8.5.H

PART 1 · READ AND MARK

Underline facts about where heat is strongest, circle details about people or health, and number each solution or limit. Use your marks to connect different kinds of evidence as you read. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How do the heat maps in paragraph 1 and the health reports in paragraph 2 work together to help planners make decisions?	**Heat maps show where the hottest areas are, and health reports show where extreme heat may endanger people. Together, they help planners target places that need protection.**
2	What does the example of shelters and young trees show about using more than one solution?	**Shelters provide shade right away, while young trees can provide wider shade later after they grow.**
3	Why is a plan with several actions stronger than planting trees alone? Use details from paragraph 3.	**Trees need water, care, time to grow, and suitable soil. Other actions, such as cool roofs, water stations, and shelters, can help where trees cannot or while trees are growing.**
4	What conclusion can you draw about why cities should not treat every neighborhood the same?	**Neighborhoods differ in heat, pavement, tree cover, where people spend time, and practical limits such as underground pipes or little soil. Each area may need different solutions.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Our school should place a shaded shelter and a drinking-water station beside the sunny pickup area before next summer. These actions could protect students quickly because dark pavement absorbs sunlight and the area has little shade. The school should also plant trees where there is enough soil, since trees can cool the area over time but need years to grow.

Accept responses that combine at least two relevant details to form a conclusion, rather than listing separate facts. For Part 3, accept varied locations and solutions if the response includes an immediate action, a longer-term action, and accurate evidence or a realistic limit from the passage.