City Heat Detectives

Build knowledge across a three-text set about urban heat.

8.DSR.D "Regularly engage in reading a series of conceptually related texts organized around topics of study to build knowledge and vocabulary. (These texts should be at a range of complexity levels so students can read the texts independently…"

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB As you read this three-text set, underline one cause-and-effect detail in each text, circle every cooling strategy, and number 1, 2, and 3 beside details that show how your knowledge grows from one text to the next.

How Cities Hold Heat

1. Text 1: On a hot afternoon, a city block can feel warmer than a nearby park. Dark roofs and pavement absorb sunlight, then release heat slowly. This pattern is called an urban heat island. Trees can reduce the effect because leaves shade surfaces and release water vapor. In Phoenix, researchers have measured cooler temperatures beneath tree canopies than over unshaded pavement. The difference matters most at night, when buildings and roads may still give off stored heat.

2. Text 2: City planners use several tools to cool heat islands. Planting street trees adds shade, but young trees need water and years to grow. Light-colored, or reflective, roofs bounce more sunlight than black roofs. Some cities also replace solid pavement with materials that let rain soak through, which can help cool surfaces. Each choice has limits. A reflective roof may lower a building's cooling costs, while trees can also improve air quality and provide shade for people walking outside.

3. Text 3: During a heat wave, cooling strategies can protect health as well as comfort. High nighttime temperatures are especially risky because people and buildings have less time to cool down. A neighborhood with few trees and many wide parking lots may stay hotter after sunset than an area with parks and lighter roofs. For that reason, some communities map surface temperatures and tree cover before deciding where to invest. The maps help planners direct limited funds toward places where added shade could serve the most people.

2 ANSWER WITH EVIDENCE

Use the passage

1. How do Texts 1 and 3 together explain why nighttime heat can be a problem?

2. In Text 2, what does reflective mean when it describes a roof? Use the context of the text.

3. Compare two strategies in Text 2. Which one may change temperatures sooner, a reflective roof or newly planted trees? Explain using a detail from the text.

4. How does the information in Texts 1 and 2 help explain why communities make maps before choosing where to add shade in Text 3?

3 YOUR TURN

Your own words

Your school wants to cool a hot parking area. Write a three-sentence recommendation that uses at least two details from the text set and includes one vocabulary word from the passage.

ANSWER KEY

City Heat Detectives

GRADE 8 · 8.DSR.D

PART 1 · READ AND MARK

As you read this three-text set, underline one cause-and-effect detail in each text, circle every cooling strategy, and number 1, 2, and 3 beside details that show how your knowledge grows from one text to the next. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How do Texts 1 and 3 together explain why nighttime heat can be a problem?	**Buildings and roads release stored heat at night, and people and buildings then have less time to cool down.**
2	In Text 2, what does reflective mean when it describes a roof? Use the context of the text.	**It means the roof bounces sunlight away.**
3	Compare two strategies in Text 2. Which one may change temperatures sooner, a reflective roof or newly planted trees? Explain using a detail from the text.	**A reflective roof may change temperatures sooner because young trees need years to grow.**
4	How does the information in Texts 1 and 2 help explain why communities make maps before choosing where to add shade in Text 3?	**The earlier texts show that trees and surface materials affect heat, so maps of temperatures and tree cover can identify the places that need cooling most.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Our school should plant trees along the parking lot and use a light-colored coating when the gym roof is repaired. The roof can reflect sunlight right away, while the trees will provide more shade as they grow. These choices could make the area safer during hot afternoons and help it cool after sunset.

Accept equivalent explanations that accurately connect ideas across at least two texts. For the open task, accept practical recommendations supported by two passage-based details and correct use of a passage vocabulary word.