

Heat Under Foot

Analyze how organization and text features shape an informational text.

ELA.10.R.2.1 "Analyze the impact of multiple text structures and the use of features in text(s)."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline signal words or phrases that show cause and effect, comparison, or problem and solution. Circle the labels DATA SNAPSHOT, KEY DETAIL, and CHECKLIST. Write CE, CC, or PS beside each numbered paragraph to identify its main structure.

Designing Cooler Cities

- ① **WHY CITIES STAY WARM.** On a sunny afternoon, pavement and dark roofs absorb solar energy. After sunset, those surfaces release stored heat, so densely built neighborhoods can remain warmer than nearby rural land. This pattern is called the urban heat island effect. **DATA SNAPSHOT:** In its July 26, 2023 report, Urban Heat Hot Spots, the nonprofit Climate Central modeled urban heat island intensity in 44 large U.S. cities, showing how built environments can add to residents' summer heat exposure. Nighttime heat can be especially risky for people whose homes lack air conditioning or reliable power at home.
- ② **ROOFS AS TEST SITES.** Researchers compare roof materials because color changes how much sunlight a roof reflects. A conventional black roof absorbs much of that energy and may reach high surface temperatures. In contrast, a white or specially coated cool roof reflects more sunlight, often staying cooler in direct sun. **KEY DETAIL:** Thermal image colors show relative surface temperature, not the temperature of the air. By placing nearby roofs side by side, the comparison helps planners see why a roof choice can affect a building's cooling needs.

- ③ **COOLER BLOCKS, PRACTICAL STEPS.** Roof changes work best as part of a larger plan. First, cities can plant and maintain street trees, whose shade reduces the sunlight striking sidewalks. Next, officials can open cooling centers during heat waves and share their locations through maps and alerts. However, a plan that ignores renters or neighborhoods with few trees can widen existing health gaps. **CHECKLIST:** shade, drinking water, indoor cooling, and clear emergency information. Together, these measures lower exposure to heat and help residents respond when temperatures climb.

2 ANSWER WITH EVIDENCE _____ Use the passage

- ① How does the cause-and-effect structure in paragraph 1 help readers understand urban heat islands? Use one detail from the paragraph.

- ② What two roof types does paragraph 2 compare, and how does the KEY DETAIL feature guide a reader's interpretation of a thermal image?

- ③ What is the effect of placing First and Next before actions and However before a concern in paragraph 3?

- ④ Compare the DATA SNAPSHOT and CHECKLIST features. What type of information does each feature provide, and how does each support the paragraph's purpose?

Write 4 or 5 complete sentences about a school or community problem. Include a cause-and-effect relationship and a problem-and-solution relationship, add a labeled text feature such as DATA SNAPSHOT or CHECKLIST, and make the final sentence explain how your organization and feature help the reader.

[illegible]

PART 1 • READ AND MARK

Underline signal words or phrases that show cause and effect, comparison, or problem and solution. Circle the labels DATA SNAPSHOT, KEY DETAIL, and CHECKLIST. Write CE, CC, or PS beside each numbered paragraph to identify its main structure. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	How does the cause-and-effect structure in paragraph 1 help readers understand urban heat islands? Use one detail from the paragraph.	It explains why cities stay warm after sunset: pavement and dark roofs absorb solar energy, then release stored heat.
2	What two roof types does paragraph 2 compare, and how does the KEY DETAIL feature guide a reader's interpretation of a thermal image?	It compares a conventional black roof with a white or coated cool roof. The KEY DETAIL explains that image colors show relative surface temperature, not air temperature.
3	What is the effect of placing First and Next before actions and However before a concern in paragraph 3?	First and Next organize the proposed actions in sequence, while However introduces a limitation, showing that an effective plan must also address unequal access to trees and cooling.
4	Compare the DATA SNAPSHOT and CHECKLIST features. What type of information does each feature provide, and how does each support the paragraph's purpose?	The DATA SNAPSHOT provides evidence from an analysis of U.S. cities, supporting the explanation of the heat problem. The CHECKLIST provides practical needs, supporting the section's proposed solutions.

PART 3 · YOUR TURN (SAMPLE ANSWER)

Discarded food in school trash creates a problem because it rots in landfills and releases methane, a heat-trapping gas. To reduce this waste, the cafeteria can offer smaller first portions and let students request seconds. CHECKLIST: Students need clear signs, a share table for unopened items, and bins for compostable scraps. These steps give students ways to waste less before food reaches the trash. The cause-and-effect opening explains why the problem matters, and the checklist makes the solutions easy to scan during lunch.

Accept equivalent wording that accurately identifies paragraph 1 as cause and effect, paragraph 2 as comparison and contrast, and paragraph 3 as problem and solution. For Part 3, require both relationships, a labeled feature, and an explanation of how the organization and feature aid readers. Source check: Climate Central, Urban Heat Hot Spots, July 26, 2023, analyzed 44 cities. The DATA SNAPSHOT summarizes a modeled urban heat island index; it is not a direct thermometer reading from every neighborhood.