Where Shade Falls

How three fields explain a city's trees

10.CL.7 "Read, analyze, and evaluate texts from science, social studies, and other academic disciplines to determine how those disciplines treat domain-specific vocabulary and content organization."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline two field-specific terms in each paragraph. In the margin, label each paragraph S for scientific process, H for historical cause, or P for planning response.

Who Gets a Cooler Block?

1. On a July afternoon, a playground's asphalt can feel much hotter than the grass beside it. Climate scientists study this difference by measuring surface temperature, how hot the ground is, rather than only the air above it. Trees shade pavement and release water vapor through evapotranspiration, a process that uses heat as liquid water becomes gas. To test these effects, researchers compare temperatures at shaded and unshaded sites at similar times of day.

2. Historians asking why some city blocks have fewer trees look beyond today's weather. In the twentieth century, redlining labeled many neighborhoods risky for mortgage loans, often on the basis of residents' race. Those labels helped restrict investment in some communities. Historians examine lending maps, city budgets, and residents' accounts to trace disinvestment, the long-term withdrawal or shortage of resources. That evidence can help explain uneven tree cover, although present-day conditions have other causes too.

3. City planners turn these findings into decisions about where to plant. They compare canopy coverage, the share of ground covered by tree crowns when viewed from above, with heat measurements and residents' reports of where shade is needed. They also consider equity, whether resources reach communities that have had fewer of them. A planting plan might prioritize a hot bus stop, then explain who will water young trees and how sidewalks will remain accessible. Without upkeep, even a well-placed tree may not survive.

2 ANSWER WITH EVIDENCE

Use the passage

1. What does surface temperature measure, and why do scientists compare shaded and unshaded sites?

2. How does the historians' paragraph connect redlining, disinvestment, and tree cover?

3. How does the evidence used by scientists differ from the evidence used by historians? Explain how each fits the field's question.

4. Why does the planning paragraph discuss upkeep after choosing where to plant?

3 YOUR TURN

Your own words

A school wants more shade along a busy sidewalk. Write three sentences about what its team should investigate before planting: use a scientific term in one sentence, a historical or planning term in another, and explain why both fields are useful in the third.

ANSWER KEY # Where Shade Falls

GRADE 10 · 10.CL.7

PART 1 · READ AND MARK

Underline two field-specific terms in each paragraph. In the margin, label each paragraph S for scientific process, H for historical cause, or P for planning response. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	What does surface temperature measure, and why do scientists compare shaded and unshaded sites?	**It measures how hot the ground is. Comparing sites helps scientists test the effect of shade on temperature.**
2	How does the historians' paragraph connect redlining, disinvestment, and tree cover?	**It starts with redlining, which helped restrict investment, then describes evidence historians use to trace disinvestment. This history can help explain uneven tree cover.**
3	How does the evidence used by scientists differ from the evidence used by historians? Explain how each fits the field's question.	**Scientists compare temperature measurements to test cooling effects. Historians examine lending maps, budgets, and residents' accounts to investigate why tree cover differs among blocks.**
4	Why does the planning paragraph discuss upkeep after choosing where to plant?	**Planners must address how a chosen tree will be cared for, since a well-placed tree may not survive without upkeep.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

The team should measure surface temperature on shaded and bare stretches of the school sidewalk. It should check whether canopy coverage is lower near entrances used by students who walk to school. Together, those findings can identify a hot spot and help the team choose where new shade is needed.

For marking, accept surface temperature and evapotranspiration for S, redlining and disinvestment for H, and canopy coverage and equity for P. For Your Turn, accept other accurate terms if the response applies both fields to the school sidewalk and explains their combined value.