# Shade Decisions

Trace how evidence becomes a useful research recommendation.

**10.R.1.E** "Create research products aligned with the demands of the reading and writing standards."

NAME _____ DATE _____

## 1 READ AND MARK

Read it twice

**YOUR JOB** Underline the passage's main claim, circle each source name, and number the details that show how a source supports or limits a recommendation. These marks will help you see how a research product turns evidence into a decision.

### Trees, Heat, and City Choices

1 Street trees can make hot neighborhoods safer, but planting plans should focus on places with the greatest heat exposure. In a 2021 study of U.S. cities, researchers at The Nature Conservancy found that neighborhoods with less tree cover often had higher summer surface temperatures. Surface temperature is not the same as air temperature, yet it shows where pavement and roofs absorb heat. The study combines satellite images with local demographic data, so it helps cities identify blocks where shade is scarce and residents may face greater risk during heat waves.

2 Trees lower heat in two main ways. Their canopies block sunlight from sidewalks and buildings, and water released from leaves cools the surrounding air through evapotranspiration. The U.S. Environmental Protection Agency describes both processes in its guidance on heat islands, making it a useful source for explaining how trees work. However, that guidance does not prove that every new planting will cool a particular block. Cooling depends on tree species, canopy size, water, pavement, and the time needed for young trees to grow. A careful report separates this general explanation from local results.

3 To create a useful recommendation, a student researcher would combine broad evidence with local evidence. The Nature Conservancy study can help choose priority areas, while city temperature measurements, a tree inventory, and resident interviews can show conditions on specific streets. The final product should state a claim, cite each source, and explain one limitation, such as missing temperature readings at night. For example, a city might begin by protecting mature trees near apartment buildings and bus stops, then collect data before deciding where to plant more. This approach turns sources into a decision rather than a list of facts.

## 2 ANSWER WITH EVIDENCE

Use the passage

1. What is the passage's central claim about planning for street trees? Name the source that supports this claim.

2. Why is the Nature Conservancy study useful for choosing priority areas? Use one detail about its evidence.

3. Why should a researcher avoid using the EPA guidance as proof that a new tree planting will cool one specific block?

4. What three kinds of local evidence does the passage suggest collecting, and what can they reveal?

## 3 YOUR TURN

Your own words

Write a 70-90 word research recommendation for reducing heat at one outdoor location at your school. State a claim, use the EPA information from the passage and one kind of local evidence you would collect, then explain one limitation of that local evidence.

ANSWER KEY

# Shade Decisions

GRADE 10 · 10.R.1.E

## PART 1 · READ AND MARK

Underline the passage's main claim, circle each source name, and number the details that show how a source supports or limits a recommendation. These marks will help you see how a research product turns evidence into a decision. Accept any marking that follows this job and points at the right text.

## PART 2 · ANSWERS

| # | QUESTION | ANSWER |
|---|---|---|
| 1 | What is the passage's central claim about planning for street trees? Name the source that supports this claim. | **Planting plans should focus on places with the greatest heat exposure. The Nature Conservancy's 2021 study supports the claim.** |
| 2 | Why is the Nature Conservancy study useful for choosing priority areas? Use one detail about its evidence. | **It combines satellite images with local demographic data, helping cities find blocks with scarce shade and residents who may face greater heat risk.** |
| 3 | Why should a researcher avoid using the EPA guidance as proof that a new tree planting will cool one specific block? | **The guidance explains general cooling processes, but local cooling depends on species, canopy size, water, pavement, and the time young trees need to grow.** |
| 4 | What three kinds of local evidence does the passage suggest collecting, and what can they reveal? | **City temperature measurements, a tree inventory, and resident interviews can reveal conditions on specific streets.** |

## PART 3 · YOUR TURN (SAMPLE ANSWER)

To make the west bus line safer in September, our school should add shade near the benches and protect the existing maple trees. The EPA explains that tree canopies block sunlight and evapotranspiration cools nearby air. Our facilities team should measure afternoon air temperature at the benches and in a shaded area for two weeks. These local readings would show whether the site needs more shade. Because two weeks may not include the hottest days, the school should repeat the measurements during a heat wave.

Accept responses that make a specific, workable claim and connect both broad source information and proposed local evidence to that claim. The limitation must explain what the local evidence might fail to show.