From Question to Plan

Track how researchers refine an inquiry and combine evidence.

9-10W6 "Conduct research to answer questions, including self-generated questions, or solve a problem; narrow or broaden the inquiry when appropriate. Synthesize multiple sources, demonstrating understanding of the subject under investigation."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline each research question, circle each source or piece of local evidence that changes the inquiry, and number 1, 2, and 3 beside the ideas combined in the final answer so your marks show how the research develops.

Cooling a School Courtyard

1 When ninth-grade students at Harbor High noticed that their courtyard became hot at lunch, they began with a broad research question: How can cities reduce summer heat? A city-planning report explained that pavement absorbs and releases heat, while tree shade can lower surface temperatures. The report gave the students a useful starting point, but it did not show whether trees would help their particular courtyard. They narrowed their inquiry: Which changes could make Harbor High's courtyard cooler during lunch without removing space for students? This revision turned a huge city issue into a local problem they could investigate.

2 Next, the students compared two sources. A peer-reviewed study of schoolyards found that shade trees lowered radiant heat for people nearby, although results varied with canopy size and time of day. A district facilities map showed that Harbor's courtyard had only three young trees and a large paved center. Together, these sources suggested that shade might matter, yet the students could not assume the study's results would occur at their school. They added a need for local evidence: temperatures in sunny and shaded courtyard spots at lunchtime. They also planned to learn whether new trees could grow in the available soil.

3 Finally, the group read a local newspaper article about another school that installed fabric shade sails instead of trees. The article described quick cooling benefits but noted that the sails required maintenance and replacement. The students broadened their inquiry slightly to include both trees and shade structures. Their emerging answer was cautious: Harbor High should measure local temperatures, check soil conditions, and compare the long-term costs of several shade options. By connecting research findings, site details, and a practical example, they avoided treating one source as a complete answer.

2 ANSWER WITH EVIDENCE

Use the passage

1. How did the students narrow their first research question?

2. What conclusion did the students reach by connecting the peer-reviewed study with the district facilities map?

3. Why did the students broaden their inquiry after reading the newspaper article?

4. Name the three actions in the students' emerging answer, and explain how these actions use more than one source.

3 YOUR TURN

Your own words

Choose a school problem. In 5 or 6 sentences, write a broad research question and a narrower question, name two sources you would consult and the useful evidence each could provide, explain how you would combine the evidence, and state one reason you might narrow or broaden the inquiry again.

ANSWER KEY

From Question to Plan

PART 1 · READ AND MARK

Underline each research question, circle each source or piece of local evidence that changes the inquiry, and number 1, 2, and 3 beside the ideas combined in the final answer so your marks show how the research develops. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How did the students narrow their first research question?	**They changed a broad question about reducing city heat into a local question about cooling Harbor High's courtyard during lunch without taking away student space.**
2	What conclusion did the students reach by connecting the peer-reviewed study with the district facilities map?	**They concluded that shade might help the courtyard, but they needed local evidence because Harbor had only three young trees and a large paved area, and study results varied.**
3	Why did the students broaden their inquiry after reading the newspaper article?	**The article showed that fabric shade sails could cool an area quickly, although they needed maintenance and replacement. The students therefore considered both trees and shade structures.**
4	Name the three actions in the students' emerging answer, and explain how these actions use more than one source.	**They would measure local temperatures, check soil conditions, and compare long-term costs of shade options. These actions connect research on shade, details about the Harbor site, and the example of shade sails at another school.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

How can our school reduce lunchtime food waste? Which cafeteria change could cut the number of unopened milk cartons discarded during one month? I would examine cafeteria disposal records to learn how many cartons are thrown away and when. I would consult county health department guidance to learn which safe donation or sharing practices are allowed. If records show that most cartons are unopened, I would combine both sources to judge whether a supervised sharing table is practical. If many cartons are opened, I would broaden the inquiry to include serving sizes and student choices.

For Questions 1 through 4, accept equivalent answers that accurately connect the stated sources, evidence, and inquiry changes. For the open task, accept any plausible school issue with a broad and narrowed question, two relevant sources, a plan for synthesis, and a justified possible revision to the inquiry.