

Questions That Grow

Follow how focused questions guide short and sustained research.

CCSS.ELA-Literacy.CCRA.W.7 "Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB High-school practice for this K-12 anchor standard. This two-lesson investigation uses invented school records. Lesson 1: read Sources A and B, underline useful evidence, and answer questions 1-3. Keep Source C covered until the next lesson; then complete question 4 and Your Turn.

Cooling the Schoolyard

- ① **Source A: student science team's field log.** In this classroom simulation, the team measured three schoolyard surfaces at 12:30 p.m. on one clear June day. The same infrared thermometer was used at each site. The table reports surface temperature, not air temperature or student comfort. The team also counted lunchtime users. These observations can help locate a problem, but one day cannot establish a year-round pattern. Begin a short investigation: which site deserves the first temporary shade trial, and why? Record your evidence before reading the later survey.

SOURCE A: SIMULATED ONE-DAY SCHOOLYARD OBSERVATIONS

Site	Surface temperature	Lunchtime users
Lunch patio	46 C	60
Basketball court	49 C	25
Garden path	35 C	15

- ② **Source B: facilities manager's planning memo.** The invented memo estimates a temporary shade structure at \$4,000 per site and a young tree at \$500 plus watering and care. The structure could shade a seating area this term; a young tree would take several years to provide comparable cover. The school has \$4,500 for one initial trial. The manager favors a structure because it can be installed quickly, but has not inspected every site's underground services or maintenance needs. Treat costs as preliminary estimates, not a final quote or proof that installation is feasible.
- ③ **Source C: later student survey.** Read this in the next lesson. Of 50 voluntary respondents, 32 asked for shade at the lunch patio, 12 at the basketball court, and 6 at the garden path. Most responses came from students waiting by the cafeteria; absent students and people elsewhere were not systematically sampled. The survey adds information about preferences but does not measure temperature or represent every student equally. Revisit the first question and investigate whether immediate shade should prioritize the hottest measured surface, the largest lunchtime group, or both. Use all three records to separate a supported recommendation from an unanswered question.

2 ANSWER WITH EVIDENCE Use the passage

- 1 From Source A, which site was hottest? How much hotter was it than the garden path?
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- 2 Which option in Source B could provide shade this term within the trial budget? Identify one uncertainty before choosing it.
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- 3 Lesson 1: write a focused short-investigation question and answer it using one detail from A and one from B. Explain one limit.
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4 Lesson 2: what does Source C add, and why must its sampling method qualify your conclusion?

3 YOUR TURN

Your own words

Continue the investigation in the next lesson. Date both your original and revised questions. Write a 150-180-word research brief answering the revised question with evidence from A, B and C. Explain how the new source changed or strengthened your earlier answer, distinguish a finding from an uncertainty, and describe the next evidence collection needed for a longer project. Record source labels beside evidence; do not invent extra findings.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

PART 1 • READ AND MARK

High-school practice for this K-12 anchor standard. This two-lesson investigation uses invented school records. Lesson 1: read Sources A and B, underline useful evidence, and answer questions 1-3. Keep Source C covered until the next lesson; then complete question 4 and Your Turn. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	From Source A, which site was hottest? How much hotter was it than the garden path?	The basketball court was hottest at 49 C, which is 14 C above the garden path's 35 C.
2	Which option in Source B could provide shade this term within the trial budget? Identify one uncertainty before choosing it.	The \$4,000 structure fits the \$4,500 budget and could provide immediate shade. Installation feasibility, actual quoted cost or maintenance still needs checking.
3	Lesson 1: write a focused short-investigation question and answer it using one detail from A and one from B. Explain one limit.	Example: Should the first shade trial serve the lunch patio this term? Its 60 users and 46 C surface suggest need, and a \$4,000 structure fits the budget. One day's surface measurements do not establish comfort or year-round need.
4	Lesson 2: what does Source C add, and why must its sampling method qualify your conclusion?	It adds preferences: 32 of 50 respondents chose the patio. Voluntary responses collected mainly near the cafeteria may overrepresent patio users, so the result cannot stand for all students.

PART 3 · YOUR TURN (SAMPLE ANSWER)

Lesson 1 question: Should the lunch patio receive temporary shade this term? Lesson 2 revision: Does the patio deserve the first trial when temperature, use, preferences and cost are considered together? I recommend investigating a patio structure first, rather than treating the hottest surface as the only priority. Source A records 60 patio users and a 46 C surface, compared with 25 users and 49 C at the court. Source B's \$4,000 structure fits the \$4,500 trial budget and could help this term, while trees need years. Source C strengthens the patio case because 32 of 50 respondents chose it. However, surveying mainly near the cafeteria may favor patio users, and a single day's surface readings do not measure comfort. The added source supports a provisional recommendation, not certainty. A longer project should repeat comparable measurements on several days, sample students at all sites and obtain a site inspection and firm maintenance estimate before a final decision.

Designed for high school; the header identifies the K-12 anchor standard's scope. Run the two inquiry rounds in separate lessons and require students to revisit their recorded question and finding after Source C. Accept different sites if evidence and limits support the choice. The brief is a short staged research exercise and a starting point for a sustained project, not a claim that fictional records are real fieldwork. Assess actual source use, refinement and synthesis; reject claims based on invented additional research. Dates depend on the class schedule.