ONE TOPIC. THREE WAYS IN.

A Cooler Schoolyard

Read the science. Weigh the options. Make a case.



3	reading versions
1	shared decision
18	questions in all; 6 per version

Different reading needs. A discussion everyone can join.

Students investigate how trees and built shade can cool a schoolyard, then use a budget and planning brief to recommend one project. Every reader brings evidence to the same conversation.

INSIDE THE LESSON

One-page articles + matched questions / Shared planning brief
Discussion + opinion writing / Student Sheet: Yes / Not Yet
Answer guidance + rubric / Standards + readability estimates

Grade 5 topic and tasks. Three access versions for flexible grouping. Plan for two lessons. Print guide and teaching sequence: page 2.

Ready for your classroom

Choose one text per student. Keep the final task shared.

CHOOSE A STARTING POINT

Version	Approximate text level*	What changes	Print
A / Supported	About grade 3 FK estimate: 3.1	Short sentences, direct explanations, optional response frames.	3-4
B / Core	About grade 5 FK estimate: 5.2	Academic vocabulary in context; independent evidence responses.	5-6
C / Stretch	About grade 7 FK estimate: 7.3	More complex language; evaluate limits and justify interpretations.	7-8

*Flesch-Kincaid estimates describe the prose, not a student's ability or a certified reading level. These are not Lexile measures. Use classroom evidence to select support; reassess as students work. Method and sources: page 17.

PRINT ONLY WHAT EACH READER NEEDS

One version pair: pages 3-4, 5-6, or 7-8. **For everyone:** pages 9-12. That is six student pages, or three double-sided sheets. Teacher pages: 1-2 and 13-17. The artwork supports the theme; students find evidence in the words and planning table.

A SIMPLE TWO-LESSON SEQUENCE

Lesson 1 / about 35 minutes: introduce vocabulary (5); read and answer (15-20); record two main ideas and supporting details on page 10 (10).
Lesson 2 / about 35 minutes: compare proposals (10); discuss using the page 10 routine (8); write (12); reflect and choose a next step (5). Allow more time or oral responses when needed.

Access without changing the goal: read the common brief aloud; let partners rehearse answers; offer sentence frames. Read the question sheet aloud when decoding gets in the way. All students still connect evidence to a decision.

Teach before reading: Absorb = take in; water vapor = water in its gas form; trade-off = a benefit weighed against a cost or limit. Use spoken examples. The reading checks are different forms, not equivalent tests; compare reasoning, not scores across versions.



A Cooler Schoolyard

How can one outdoor space work better for everyone?

1 **A hot place to play.** A schoolyard needs room for games and places to rest. On a sunny day, dark pavement can absorb, or take in, energy from sunlight. It gets hot and can warm the air above it. Trees could help, but a good plan needs more than trees.

2 **Two ways trees help.** Leaves make shade. They block some sunlight from reaching the ground, so it heats up less. Roots also take up water. Some water is released from the leaves as vapor, a gas. This process uses heat and can cool the air. Shade and water release work in different ways.

3 **Look beyond the leaves.** A new tree needs space and care. It may offer little shade at first. People must water it as its roots become established. Its branches and roots will need more room as it grows. Planting day is only the start of the job.

4 **Make room for everyone.** Trees beside a resting area could leave the middle open for games. A shade canopy is another choice. This cover provides shade once it is installed. It does not release water vapor the way a tree does. It needs inspections and repairs, too.

5 **Plan, then choose.** Students can map where shade falls during recess. They can ask classmates how they use the yard. A trade-off weighs a benefit against a cost or limit. The school must weigh cost, care, and space. A plan should explain what it improves and what it cannot solve yet. A cooler yard begins with careful choices.

Read. Think. Explain.

Name: _____ Date: _____

01 **Which sentence gives the main idea of the whole article?**

A. A schoolyard should add shade wherever trees will fit.
B. A cooler schoolyard needs shade and careful planning.
C. A shade canopy is the best choice for every school.
D. Schools should plan mainly for games and sports.

02 **How do leaves help keep the ground cooler?**

A. They release water vapor through their roots.
B. They draw warm air down into the soil.
C. They block some sunlight from reaching the ground.
D. They keep pavement from releasing any heat.

03 **Why does the author include paragraph 3?**

A. To explain why new trees need space and care.
B. To compare the prices of trees and canopies.
C. To explain how students can collect shade data.
D. To describe how leaves keep the ground cooler.

04 **Explain the second way trees help cool the air. Look back at paragraph 2.**

Start if useful: Water moves from ___ to ___. This can cool the air because ___.

05 **A student says, "A canopy and a tree do exactly the same things." What detail shows that this is not true?**

Use paragraph 4. Start if useful: Both can ___, but only the tree ___.

06 **Why should students map shade during recess before choosing a plan? Give one reason supported by the article.**

Start if useful: A recess shade map would help planners ___ because ___.



A Cooler Schoolyard

How can one outdoor space work better for everyone?

1 **More than an empty space.** A schoolyard can be a basketball court, a meeting place, and a quiet spot to read. Yet the same yard feels different in sunshine and shade. Dark pavement can absorb energy from sunlight and becomes hot. It can then warm the air above it. Across built-up areas, this contributes to a heat island.

2 **Cooling that grows.** Trees help in two ways. Leaves intercept sunlight, so less energy reaches the ground. Roots take up water, and leaves release some of it as water vapor. That release is called transpiration. Evaporating water uses heat and can cool the surrounding air. A tree does more than cast a shadow.

3 **A long-term responsibility.** These benefits come with responsibilities. A young tree may give little shade for years. It needs watering while its roots become established. Its mature size must fit the site: a tree near a playing area could eventually crowd that space. A planting plan must consider tomorrow's yard as well as today's.

4 **Balance the uses.** Trees near seats could preserve an open center for games. A built canopy could shade the seats sooner. Unlike trees, it does not release water vapor. Its supports and fabric need inspections and repairs. Each choice brings a trade-off: a benefit gained alongside a cost or limit.

5 **Let evidence guide the plan.** Mapping shade at recess shows where it falls when students use the yard. Asking classmates where they play or rest adds different evidence. The school can then weigh cost, space, and ongoing care. A strong proposal explains its benefits and limits. It should improve the yard for the people who share it.

Read. Think. Explain.

Name: _____ Date: _____

01 **Which statement best summarizes the article?**

A. Trees cool schoolyards, so planting more should be the main goal.
B. Trees and canopies offer the same benefits once installed.
C. Schools should choose shade projects by cost and speed alone.
D. Cooling a schoolyard means balancing shade, space, time, and care.

02 **Which detail best explains how trees cool the air in addition to making shade?**

A. Evaporating water uses heat.
B. Basketball courts need open space.
C. Young trees may take years to give much shade.
D. Students can ask classmates about recess.

03 **How does paragraph 3 develop the article?**

A. It explains the steps students use to map shade.
B. It explains conditions that a tree-planting plan must address.
C. It compares the costs of the two shade choices.
D. It explains the process that produces a heat island.

04 **Explain one similarity and one difference between a tree and a built shade canopy.**

Use details from paragraphs 2 and 4.

05 **Why would a drawing of the yard today be insufficient for deciding where to plant a tree?**

Explain your inference with a detail from paragraph 3.

06 **Why does the author recommend both a shade map and questions for classmates?**

Explain what each source of evidence adds to the decision.



A Cooler Schoolyard

How can one outdoor space work better for everyone?

1 **A shared space with competing needs.** A schoolyard serves runners, readers, and children seeking a quiet pause. Improving one use can restrict another. Dark pavement can absorb solar energy and heat up, warming nearby air. Across built-up areas, this heat adds to an urban heat island. Cooling a yard calls for choices about its uses, not just its appearance.

2 **Shade is only part of the story.** Trees affect heat through two mechanisms. Leaves intercept sunlight before it reaches the ground. Roots take up water, some of which leaves release as water vapor through transpiration. Evaporation uses heat and can cool nearby air. A built canopy blocks sunlight but lacks this water-release process. Sharing one benefit does not make the choices equal.

3 **Benefits depend on conditions.** New trees generally provide less shade than their mature canopies will. They need water while roots become established, and room for future growth. A drawing of a large tree does not prove that a new planting will shade a lunch area next month. Growth and care belong beside price in a proposal.

4 **Compare choices, not just appearances.** Trees near seats could preserve the game court. An installed canopy could provide shade sooner, but it needs inspections and repairs and cannot cool through transpiration. Neither option meets every need. Shading a quiet area while making a court unusable creates a trade-off. Plans must weigh benefits, limits, and continuing care.

5 **A proposal is an argument.** A recess shade map shows where shade falls during use. Student interviews reveal activities the map cannot explain. Planners must also consider cost, space, and care. A strong proposal separates benefits available now from those expected later. It uses evidence, admits uncertainty, and explains priorities. Its purpose is a reasoned improvement, not a promise to solve every problem.

Read. Think. Explain.

Name: _____ Date: _____

01 **Which statement best expresses the article's central idea?**

A. A planting plan should give the most space to the largest group.
B. Immediate shade should matter more than every other need.
C. A cooling proposal should weigh evidence, competing uses, and future responsibilities.
D. Student interviews provide enough evidence to choose a project.

02 **Which detail most directly challenges a promise of full shade from new trees next month?**

A. A schoolyard serves readers and basketball players.
B. Roots absorb water.
C. Canopies need inspections and repairs.
D. New trees usually provide less shade than their mature canopies will.

03 **Why does paragraph 4 compare a tree plan with a manufactured canopy?**

A. To show that options can share a benefit but involve different limitations.
B. To show that shade matters more than every other cooling benefit.
C. To establish that a faster project requires less continuing care.
D. To argue that preserving games always rules out trees.

04 **Explain how the two cooling mechanisms in paragraph 2 differ.**

Identify what happens to sunlight in one and to water in the other.

05 **What does the author mean by calling a proposal "an argument"?**

Use evidence from paragraph 5 to explain the kind of argument intended.

06 **Evaluate this claim: "A shade map alone will tell us which schoolyard plan is best."**

Identify what the map can establish and one important question it cannot answer. Support your reasoning with the article.

One yard. Three proposals.

Your decision: Which plan should Cedar School choose?

The goal: shade a place for a group to sit by next September.
The budget: no more than $6,000 for this project.
The space: keep the entire game court available for games.

Cedar School and these prices are fictional. Each price includes installation and the first year of care. Future care costs are not included. Trees may be part of a later project.

Proposal	Cost	What it offers	Limits + care
1 / Tree corner	$4,800	Four young trees beside the seats. Little shade next September; more expected as they grow.	Court stays open. Staff must water and care for the trees.
2 / Seat canopy	$5,700	A canopy over the existing seats. Group seating is shaded by next September.	Court stays open. Staff must inspect and repair the canopy.
3 / Court canopy	$5,900	A larger canopy with new seating. Ready by next September.	Seats and supports use half the court. Full-court games cannot continue.

Plans 2 and 3 use the kind of built shade described in the article. The header artwork is a general schoolyard illustration, not a plan of Cedar School.

CHECK EVERY REQUIREMENT

1. Circle the proposal that meets all three requirements. Underline the evidence for each requirement in the brief or table.

2. Explain why each other proposal falls short. A lower price alone does not settle the decision.

Bring your evidence

Name: _____ Text: A / B / C

BEFORE THE DISCUSSION

Identify **two main ideas** in your article. For each, record a supporting detail and explain how it supports the idea. Then summarize the article in your own words.

Main idea	Detail + how it supports the idea
1.	
2.	

My summary:

Look at the author's reasoning: paragraph 3 shows that planting a tree brings future responsibilities. Point to two details and explain to your partner how each supports that point.

AT THE TABLE / GROUPS OF THREE

Prepare: read the brief and choose a proposal. Assign a facilitator, an evidence finder, and a summarizer. Agree to take turns and let each speaker finish.
Discuss: each person recommends a plan and gives evidence. Ask, "Which requirement does that meet?" Build on a classmate's idea or explain a disagreement with evidence.
Conclude: the summarizer names the group's choice and an important limit. Everyone explains one idea they confirmed or revised.

After listening, I confirmed or revised this idea:

Make the case

Name: _____ Date: _____

Write to the school council. Recommend one proposal. Explain how it meets the goal, budget, and space requirements. Use a relevant detail from **your article** and one from **the planning brief**. Connect each detail to your recommendation, acknowledge one limitation or future responsibility, and give a clear closing sentence.

Organize one developed paragraph. Link your reasons with words such as **because**, **also**, or **therefore**. Rehearse with a partner if that helps.

Before you finish: clear choice / three requirements / both sources / reasons explained / limitation / closing

Student Sheet

Name: _____ Text: A / B / C

After feedback, look back at each answer. Circle **Yes** if your answer meets the goal, or **Not Yet** if you need to revise. A correct guess still needs an explanation during review.

Item	What I practiced	My check
1	Find the article's main message.	Yes / Not Yet
2	Use a relevant detail from the article.	Yes / Not Yet
3	Explain why the author included part of the text.	Yes / Not Yet
4	Explain connections between ideas or processes.	Yes / Not Yet
5	Explain or compare using a text detail.	Yes / Not Yet
6	Use or evaluate evidence for a decision.	Yes / Not Yet

One answer I improved: Item ____
My corrected answer and the evidence that helped:

In our shared task, I...

used both sources: Yes / Not Yet explained my reasons: Yes / Not Yet

built on a classmate's idea: Yes / Not Yet

My next step: Next time, I will...

Answer guidance / A

Accept accurate paraphrases. Credit the reasoning, not copied wording.

1 / B / MAIN IDEA

B includes cooling and the planning needed for different uses. A considers only where trees fit; C claims one choice is always best; D leaves out shade and rest.

2 / C / CAUSE AND EFFECT

Leaves block some sunlight from reaching the ground (paragraph 2). The other choices misdescribe the movement of water or heat.

3 / A / PARAGRAPH PURPOSE

Paragraph 3 explains growing space, watering, and delayed shade. It adds responsibilities to the benefits, rather than rejecting trees.

4 / COOLING PROCESS

Example: Roots take up water, and some water is released through the leaves as vapor. This process uses heat and can cool nearby air (paragraph 2).
2 points: describes the water movement and connects the process to heat/cooling. 1 point: one part is correct. 0: neither.

5 / COMPARING OPTIONS

Example: Both can make shade, but a canopy does not release water vapor the way a tree does (paragraph 4).
2 points: gives a correct contrast supported by the paragraph. 1 point: identifies only a shared benefit or gives an incomplete contrast. 0: inaccurate or absent.

6 / APPLYING EVIDENCE

Example: A map shows which places have shade when students are outside, so planners can choose a useful location (paragraph 5).
2 points: connects shade during recess to a planning decision. 1 point: identifies shade location without explaining its use. 0: inaccurate or absent.

Reading check: items 1-3 = 1 point each; items 4-6 = 2 points each (9 total). These forms differ in language and support. Use the Student Sheet to choose a next step; do not compare totals as equivalent measures of reading ability.

Answer guidance / B

Accept accurate paraphrases. Credit the reasoning, not copied wording.

1 / D / SUMMARY

D includes cooling and the planning needs across the article. A makes tree count the goal; B overlooks differences between the options; C leaves out space and care.

2 / A / SUPPORTING EVIDENCE

The use of heat during evaporation explains the cooling effect (paragraph 2). The other details concern space, timing, and information gathering.

3 / B / TEXT DEVELOPMENT

Paragraph 3 qualifies the benefits by explaining care, growth, and location. It does not dismiss trees or establish a cheapest option.

4 / COMPARING MECHANISMS

Example: Both trees and canopies block sunlight. Trees also release water vapor, while built canopies do not (paragraphs 2 and 4).
2 points: one accurate similarity and one accurate difference. 1 point: one is accurate. 0: neither.

5 / DRAWING AN INFERENCE

Example: A tree needs more room as it grows. A drawing of only today's yard may hide future crowding near a playing area (paragraph 3).
2 points: combines a growth detail with the inference about future space. 1 point: gives either alone. 0: neither.

6 / COMBINING EVIDENCE

Example: The map shows shade during recess, while classmates explain where they play or rest. Together these identify both conditions and uses (paragraph 5).
2 points: explains each source's distinct contribution. 1 point: explains only one. 0: neither.

Reading check: items 1-3 = 1 point each; items 4-6 = 2 points each (9 total). These forms differ in language and support. Use the Student Sheet to choose a next step; do not compare totals as equivalent measures of reading ability.

Answer guidance / C

Accept accurate paraphrases. Credit the reasoning, not copied wording.

1 / C / CENTRAL IDEA

C connects evidence, competing uses, and future obligations. A and B make one priority control the decision; D overlooks evidence that interviews cannot supply.

2 / D / RELEVANT EVIDENCE

Limited shade from young trees directly challenges the timeline (paragraph 3). Roots, users, and canopy maintenance do not establish when tree shade will arrive.

3 / A / AUTHOR'S REASONING

The comparison reveals a shared benefit alongside differences in timing, cooling mechanisms, maintenance, and space (paragraph 4).

4 / EXPLAINING MECHANISMS

Example: Leaves intercept sunlight before it reaches the ground. Water moves through a tree and evaporates, a process that uses heat (paragraph 2).
2 points: accurately distinguishes both processes. 1 point: explains only one. 0: neither.

5 / INTERPRETING A PHRASE

An argument is a reasoned case for a choice, not a quarrel. The author describes using evidence, explaining priorities, and acknowledging uncertainty (paragraph 5).
2 points: explains the meaning and supports it with a text detail. 1 point: supplies only one. 0: neither.

6 / EVALUATING A CLAIM

The map establishes where shade falls at recess. It cannot alone explain student activities, costs, or ongoing care, so it cannot settle the whole decision (paragraph 5).
2 points: identifies what the map establishes and a relevant limitation, using the text. 1 point: gives only one. 0: neither.

Reading check: items 1-3 = 1 point each; items 4-6 = 2 points each (9 total). These forms differ in language and support. Use the Student Sheet to choose a next step; do not compare totals as equivalent measures of reading ability.

What strong thinking looks like

Use examples as guidance. Other accurate explanations can earn credit.

PLANNING BRIEF / PAGE 9

Proposal 2: $5,700 is within $6,000; the group has shade by next September; the entire court stays open. Proposal 1 misses the shade deadline. Proposal 3 prevents full-court games. Future canopy care remains a responsibility.

MAIN IDEAS + AUTHOR'S EVIDENCE / PAGE 10

Idea 1: trees can cool a yard in two ways. Leaves block sunlight; water release uses heat. These details explain the cooling mechanisms.
Idea 2: shade projects require planning for competing needs. Growth, cost, care, and play space affect the choice. These details explain why cooling alone is not enough.
Summary: trees cool through shade and water release, but schools must compare benefits and responsibilities before choosing a project.
Author's point in paragraph 3: watering shows ongoing care; future growth shows a need to plan for space. Both support responsibility beyond planting day.

ONE POSSIBLE OPINION PARAGRAPH / PAGE 11

I recommend the seat canopy for Cedar School. The planning brief says it costs $5,700, shades the group by next September, and keeps the court open, so it meets all three requirements. The article explains that an installed canopy gives shade sooner than young trees. That matters because the school has a deadline. The canopy will still need inspections and repairs, so the school must plan for future care. For this project, the seat canopy best meets the school's needs.

WRITING RUBRIC / 8 POINTS

Dimension	2 points	1 point	0 points
Recommendation	Clear choice; addresses all three requirements.	Choice; misses some requirements.	No workable choice.
Evidence	Relevant, accurate detail from both sources.	Relevant detail from one source.	No relevant evidence.
Reasoning + limit	Connects evidence to choice; explains a limit or responsibility.	Explains support or a limit.	Neither explained.
Organization	Logical reasons, linking language, and a closing.	Ideas present; connections or closing unclear.	No coherent explanation.

Next step: model how a detail supports a choice, then ask students to revise.

Purposeful practice

Alignment describes the work in this lesson, not proof of mastery.

Standard	Where students practice it
RI.5.2	Page 10: identify two main ideas, explain supporting details, and summarize.
RI.5.3	A4-5, B4-5, C4: explain scientific relationships, differences, or growth effects.
RI.5.8	Page 10: connect the author's two details to the point about future responsibilities.
W.5.1a-d	Page 11: introduce an opinion; organize and link reasons; support them; conclude.
SL.5.1a-d	Page 10: prepare, use roles and turn-taking, ask and answer questions, review ideas.

RI.5.7 is also practiced through the article-plus-table decision. C5 practices RI.5.4 through the contextual meaning of "argument." These version-specific opportunities do not make every question an assessment of every listed standard.

READABILITY / TEACHER PLANNING ONLY

Flesch-Kincaid Grade Level estimates: **A 3.1 / B 5.2 / C 7.3**. Calculated on article prose only, excluding titles, section headings, directions, and questions, with textstat 0.7.13 (US English, CMU pronunciation dictionary). Estimates reflect sentence length and syllables, not knowledge demands, quality of reasoning, or a student's reading ability. No certified grade band or Lexile measure is claimed.

CONTENT + ARTWORK

Original MyPaths lesson text, revised for this pilot. Schoolyard illustration generated with OpenAI image generation; it is thematic artwork, not evidence about Cedar School. The school, costs, and proposals are fictional. The Student Sheet adapts the Yes / Not Yet reflection used in MyPaths reading products.

SOURCE NOTES / LINKS

Science: EPA on heat islands, tree cooling, and planning. Tree care: Arbor Day Foundation on watering and mature size. Standards: Common Core State Standards Initiative. Sources checked September 10, 2026.

Heat islands **Tree benefits** **Planning** **Watering** **Tree selection** **Reading standards** **Writing standards** **Discussion standards** **Readability method**