

Cooler City Plan

Grades 6-8: select, organize and explain information clearly.

CCSS.ELA-Literacy.CCRA.W.2 "Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB This grades 6-8 activity applies anchor standard CCRA.W.2. Underline one detail about shade in paragraph 1 and one about water changing to vapor in paragraph 2. In paragraph 3, circle a detail that limits what tree planting can achieve.

How Trees Cool Cities

- ① Tree shade can reduce heating by sunlight. Leaves and branches intercept sunlight before it reaches pavement, walls or windows. With less sunlight reaching a shaded surface, less energy is available to warm that surface. Shading buildings can also reduce the need for air conditioning. Shade is one way that trees help moderate heat in developed areas.
- ② Trees also contribute to cooling when water changes from liquid to vapor. Water taken up by roots evaporates inside leaves, and the vapor escapes through tiny openings. This loss of water is called transpiration. Evaporation uses energy; in suitable conditions, this process helps cool the surrounding air. Evapotranspiration includes water released by plants and evaporated from other surfaces, such as soil. These processes complement the direct effect of shade.
- ③ A useful explanation also states limits. A small newly planted tree does not immediately shade as much ground as a broad mature canopy. Trees need suitable space and growing conditions, and their effects vary by site. A school should study where shade is needed and choose trees suited to those conditions. Tree planting can be part of a heat-reduction plan; it is not an instant solution for every hot place.

2 ANSWER WITH EVIDENCE _____ Use the passage

- 1** Choose one detail explaining shade and one explaining transpiration. State the difference between the two mechanisms.

- 2** Group three details from the passage into a useful plan for an explanation to students: shade, water-related cooling, and limits.

- 3** A draft says, "Planting one tree will instantly cool every classroom." Explain what is inaccurate and revise the sentence.

3 YOUR TURN

Your own words

Write a two-paragraph explanation for students about how trees can help cool a school site and why planning matters. Use three accurate details from the passage, explain the mechanisms in your own words, and include a limitation. Make the relationship between paragraphs clear; finish with a conclusion supported by your explanation.

Draft your explanation

Write two connected paragraphs, about 100-140 words total. Introduce the topic, group related ideas, and explain how each selected detail helps readers understand it.

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Check and strengthen

Reread the draft. Circle a connecting word or phrase, underline one explained detail, and check the limitation. Rewrite two sentences here to improve clarity or accuracy. State what each revision improves.

PART 1 • READ AND MARK

This grades 6-8 activity applies anchor standard CCRA.W.2. Underline one detail about shade in paragraph 1 and one about water changing to vapor in paragraph 2. In paragraph 3, circle a detail that limits what tree planting can achieve. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	Choose one detail explaining shade and one explaining transpiration. State the difference between the two mechanisms.	Shade intercepts sunlight before it reaches surfaces. During transpiration, water evaporates using energy and escapes from leaves as vapor. Shade changes incoming sunlight; evaporation changes water's state using energy.
2	Group three details from the passage into a useful plan for an explanation to students: shade, water-related cooling, and limits.	Shade: leaves block sunlight. Water-related cooling: evaporation uses energy. Limits: small trees need time and suitable conditions.
3	A draft says, "Planting one tree will instantly cool every classroom." Explain what is inaccurate and revise the sentence.	The claim promises immediate universal cooling. Revision: planting suitable trees may help shade some parts of the school as they grow, but effects depend on location and conditions.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Trees can help cool a school site in two connected ways. First, leaves and branches intercept sunlight that would otherwise reach pavement or a building. This shade reduces the energy reaching those surfaces. Trees also take up water through their roots. When water changes to vapor, it uses energy, which can help cool the surrounding air. Shade and transpiration therefore work through different processes.

However, planting a small tree does not instantly shade a large playground. Trees need room and conditions that suit their growth. A school should consider where students need shade and which locations can support healthy trees. With careful planning, trees can be one part of a cooling strategy.

TEACHER ASSESSMENT NOTES

Designed for grades 6-8; CCRA.W.2 is a K-12 anchor standard. Judge selection, organization, accurate mechanism explanations, connections and qualification, not word count alone. The passage is an instructional synthesis; scientific background checked against U.S. EPA, Benefits of Trees and Vegetation (epa.gov/heatislands/benefits-trees-and-vegetation), and its Trees and Vegetation compendium. Accept supported alternate wording and meaningful revisions. No outside research is required. Revision-stage example (separate from the two-paragraph model): “Trees make schools cold” becomes “Trees can help cool parts of a school site.” The revision removes an unsupported guarantee.