Roof Science Report

Study how a model explanation selects and organizes information.

CCSS.ELA-Literacy.W.6.2 "Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline the sentence that states each paragraph's main point, then number two details in each paragraph that explain or qualify that point.

How Cool Roofs Help Buildings

1. On a sunny day, a dark roof can become much hotter than air around it. A cool roof is designed to reflect more sunlight and absorb less heat than a typical dark roof. It may be covered with white coating, light-colored tiles, or reflective materials. The roof does not create cold air. Instead, it reduces the amount of solar energy that enters the building, which can help rooms below stay more comfortable during hot weather.

2. Reflection is the key process. When sunlight reaches a light, reflective roof, more of the sun's energy is sent back into the atmosphere instead of heating the roof surface. Because the surface stays cooler, less heat moves from the roof into the attic or upper rooms. This can lower the need for air conditioning during warm months. A cooler roof may also last longer because repeated heating and cooling can make roofing materials expand and contract again and again.

3. Cool roofs work best as one part of a larger plan for managing heat. Trees, shade structures, insulation, and efficient air conditioning can also reduce indoor temperatures or energy use. Before choosing a roof, a building owner must consider local weather, roof condition, cost, and the building's design. In a cool climate, a highly reflective roof may reduce helpful winter warming from sunlight. These details show why an explanation of cool roofs should include both benefits and limits.

2 ANSWER WITH EVIDENCE

Use the passage

1. What is the central idea of the passage? Write one sentence that explains what cool roofs do and why they can be useful.

2. How is paragraph 2 organized? Explain how the paragraph connects reflection to a result for the building.

3. State two details from paragraph 2 that support the idea that a cool roof can help a building.

4. Why does paragraph 3 include information about local weather, cost, and possible limits of cool roofs?

3 YOUR TURN

Your own words

Write a five-sentence explanation for a building owner about cool roofs. Use at least three accurate details from the passage, including one benefit and one condition the owner should consider.

ANSWER KEY

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GRADE 6 · W.6.2

PART 1 · READ AND MARK

Underline the sentence that states each paragraph's main point, then number two details in each paragraph that explain or qualify that point. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	What is the central idea of the passage? Write one sentence that explains what cool roofs do and why they can be useful.	**Cool roofs reflect more sunlight and absorb less heat, which can help buildings stay more comfortable and use less air conditioning in warm weather.**
2	How is paragraph 2 organized? Explain how the paragraph connects reflection to a result for the building.	**It uses cause and effect: reflecting sunlight keeps the roof surface cooler, so less heat moves into the building and less air conditioning may be needed.**
3	State two details from paragraph 2 that support the idea that a cool roof can help a building.	**Possible details: more solar energy is reflected instead of heating the roof surface; less heat moves into the attic or upper rooms; air conditioning may be needed less; roofing materials may last longer.**
4	Why does paragraph 3 include information about local weather, cost, and possible limits of cool roofs?	**It gives readers a complete explanation by showing that a cool roof has benefits but may not be the best choice for every building or climate.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

A cool roof helps a building manage heat by reflecting more sunlight and absorbing less heat than a dark roof. Because its surface stays cooler, less heat moves into the attic or upper rooms. This can reduce the need for air conditioning during warm months. However, an owner should consider local weather because a highly reflective roof can reduce helpful winter warming in a cool climate. Roof condition, cost, and building design also matter.

Accept accurate paraphrases of passage details and reasonable organization language, such as cause and effect or problem and solution. For the open response, look for exactly five sentences, a clear topic, at least three passage-based details, a benefit, and a condition or limit.