

Snowy Surface Debate

Use data and reasoning to evaluate a school recommendation.

6.1.f.iii "obtaining, evaluating, and communicating information construct, use, and/or present an argument supported by empirical evidence and scientific reasoning"

NAME _____ DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each measurement or test condition, circle the group's claim, and number the sentences that explain how the evidence supports the claim.

Which Walkway Surface?

- ① At Cedar Grove Middle School, students wondered whether dark pavement helps snow melt faster than light pavement. They placed equal cups of snow on black and white tiles outdoors at 10:00 a.m. Both tiles were the same size and sat in sunlight. The students measured the water in each cup every hour. By noon, the cup on the black tile held 38 milliliters of melted water. The cup on the white tile held 21 milliliters. The students repeated the test on three sunny days.
- ② The group argued that a school could clear thin snow more quickly by using dark, safe walkway material in sunny places. Their evidence was the larger amount of melted water on the black tile at noon, 38 milliliters compared with 21 milliliters on the white tile. Their reasoning was that dark surfaces absorb more sunlight energy than light surfaces. More absorbed energy warms the snow and causes more melting. Repeating the test on three days made the evidence more dependable, because one unusual day would be less likely to control the result.
- ③ However, the investigation did not prove that black pavement is always the best choice. The students tested only two colors, one type of tile, and sunny weather. A dark surface might become too hot in summer, or it might cost more than another material. Before changing a walkway, the school should test several safe materials in different weather and record temperature, melting, cost, and slip resistance. This added evidence would help the school make an argument that considers both faster melting and safety.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 What claim did the student group make about walkway material?

2 What two noon measurements are direct evidence for the group's claim?

3 Explain how the passage connects the evidence to the claim. Use the idea of absorbed sunlight energy.

4 Name one limit of the investigation. What additional evidence does the passage say the school should collect?

3 YOUR TURN _____ Your own words

During two similar five-day periods, a cafeteria placed either a picture sign or a word-only sign near the fruit bin. With the picture sign, 18 apples were left uneaten, and with the word-only sign, 31 were left. Write a four-sentence argument recommending one sign. Include a claim, both data values, scientific reasoning, and one limit or next test.

PART 1 • READ AND MARK

Underline each measurement or test condition, circle the group's claim, and number the sentences that explain how the evidence supports the claim. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What claim did the student group make about walkway material?	A school could use dark, safe walkway material in sunny places to clear thin snow more quickly.
2	What two noon measurements are direct evidence for the group's claim?	The black tile cup held 38 milliliters of melted water, and the white tile cup held 21 milliliters.
3	Explain how the passage connects the evidence to the claim. Use the idea of absorbed sunlight energy.	Dark surfaces absorb more sunlight energy than light surfaces. The added absorbed energy warms the snow, causing more melting.
4	Name one limit of the investigation. What additional evidence does the passage say the school should collect?	One limit is that the students tested only sunny weather, only two colors, or one type of tile. The school should test safe materials in different weather and record temperature, melting, cost, and slip resistance.

PART 3 • YOUR TURN (SAMPLE ANSWER)

The cafeteria should use the picture sign near the fruit bin. During five days with that sign, students left 18 apples uneaten, compared with 31 apples during five days with a word-only sign. Because pictures can be noticed quickly, the picture sign may have helped students choose fruit they planned to eat, which could reduce waste. The cafeteria should repeat the test with the same fruit choices and count how many students take apples.

Accept claims that accurately match the passage and evidence that includes the correct comparison. For the open response, accept a supported recommendation for the picture sign when it uses both data values, a logical explanation, and a reasonable limit or next test.