

Mulch Message

Use science information to explain a design idea clearly.

5.1.f.ii "obtaining, evaluating, and communicating information communicate scientific information, design ideas, and/or solutions with others"

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline the science facts that support the idea, circle the design and test steps, and put a star beside the claim and the limit that help the principal make a decision.

A Garden Team Shares a Solution

- ① The school garden's bean plants wilted during a hot week because the soil dried quickly. The Garden Team wanted to share a solution with the principal. First, they explained the science: plant roots take in water from soil, and water leaves plant leaves as water vapor. On sunny days, this water loss can be faster, so plants need enough moisture near their roots.
- ② Next, the team described its design idea. Students would place a layer of dry leaves around each plant, leaving a small space around the stem. This mulch would shade the soil and slow evaporation, which is liquid water changing into water vapor. The team also said they would measure soil moisture twice a week for three weeks and compare mulched plants with plants without mulch.
- ③ To make the message clear, the team gave the principal a clear explanation and a short claim. Their claim was that leaf mulch could help bean plants keep more water in the soil. They included the reason, the test plan, and a limit: mulch may not help enough during a long drought, so gardeners might still need to water. The principal could use this information to decide whether to try the design.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 What science information supports the team’s idea to use leaf mulch?

2 What exactly would students do to make the mulch design?

3 How would the team test whether its design works?

4 What limit did the team communicate, and why could that help the principal decide?

3 YOUR TURN _____ Your own words

A class notices that seedlings near a sunny window droop often. Write a three-sentence message to the custodian that recommends a testable solution. Include one science fact, one design idea, and a plan for testing the idea.

PART 1 • READ AND MARK

Underline the science facts that support the idea, circle the design and test steps, and put a star beside the claim and the limit that help the principal make a decision. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What science information supports the team's idea to use leaf mulch?	Mulch shades the soil and slows evaporation, so more water can remain in the soil near plant roots.
2	What exactly would students do to make the mulch design?	They would place dry leaves around each plant and leave a small space around the stem.
3	How would the team test whether its design works?	They would measure soil moisture twice a week for three weeks and compare mulched plants with plants that have no mulch.
4	What limit did the team communicate, and why could that help the principal decide?	Mulch may not help enough during a long drought, so watering may still be needed. This helps the principal consider the design's limit before deciding.

PART 3 • YOUR TURN (SAMPLE ANSWER)

The seedlings may dry quickly in direct afternoon sun because warmth can speed evaporation from soil. Place a light shade screen beside half the trays during afternoon hours, while giving all trays the same amount of water. For two weeks, measure soil moisture and count drooping plants in shaded and unshaded trays to see whether the screen helps.

Accept equivalent answers that identify the science support, design details, comparison test, and drought limit from the passage. For the open response, accept a reasonable science fact connected to a design and a clear plan that compares or measures results.