What Remains Unknown

Analyze how a science report builds purpose, procedure, and limits.

CCSS.ELA-Literacy.RST.11-12.6 "Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline statements that explain why the investigation matters, circle steps or controls in the method, and number each unresolved issue in the final paragraph. Use your marks to analyze why the author includes each kind of information.

Testing Salt and Seed Germination

(1) Road salt can wash from winter streets into soil beside sidewalks. Because dissolved salt makes it harder for many plants to take up water, scientists use germination tests to ask how seedlings may respond. A germination test cannot predict every condition in a field, but it can isolate one factor under controlled conditions. In this investigation, students tested radish seeds, which usually sprout quickly. The report explains the science behind the test, describes the method so another class could repeat it, and discusses what the results can and cannot show.

(2) Each group placed ten radish seeds on a damp paper towel in a labeled plastic bag. The towels received equal amounts of water containing either no added salt, a low salt concentration, or a higher salt concentration. Groups kept the bags in the same location and counted seeds with visible roots after five days. Using several bags for each condition reduced the chance that one unusual bag would determine the pattern. The procedure was designed to make salt concentration the main changing variable, while seed type, water amount, temperature, and observation time stayed as similar as possible.

(3) After five days, the no-salt bags had the highest average number of germinated seeds, and the higher-salt bags had the lowest. This pattern supports the explanation that salt can interfere with water uptake during germination. However, the experiment does not show the exact salt level at which radish seeds fail outdoors, whether older plants respond in the same way, or how rain, soil texture, and repeated salt exposure might alter the result. By reporting these limits, the author prevents readers from treating a small classroom experiment as a complete model of roadside soil.

2 ANSWER WITH EVIDENCE

Use the passage

1. What purpose does the first paragraph's explanation of salt and water uptake serve in the report?

2. Why does the author describe keeping seed type, water amount, temperature, and observation time as similar as possible?

3. How does noting that groups used several bags for each condition advance the author's purpose rather than merely add detail?

4. Name two unresolved issues the author identifies. Why does the author end the report by discussing these limits?

3 YOUR TURN

Your own words

Choose a simple experiment different from the passage. Write exactly three sentences that explain why the author would include background information, describe one procedural detail and what it controls, and identify one unresolved issue the report should admit.

ANSWER KEY

What Remains Unknown

HIGH SCHOOL · RST.11-12.6

PART 1 · READ AND MARK

Underline statements that explain why the investigation matters, circle steps or controls in the method, and number each unresolved issue in the final paragraph. Use your marks to analyze why the author includes each kind of information. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	What purpose does the first paragraph's explanation of salt and water uptake serve in the report?	**It gives readers the scientific reason for testing salt's effect on seed germination and helps them understand the later results.**
2	Why does the author describe keeping seed type, water amount, temperature, and observation time as similar as possible?	**The details show that the procedure was designed to isolate salt concentration as the main changing variable.**
3	How does noting that groups used several bags for each condition advance the author's purpose rather than merely add detail?	**It shows that the design reduces the influence of one unusual bag, making the reported pattern more trustworthy.**
4	Name two unresolved issues the author identifies. Why does the author end the report by discussing these limits?	**Possible issues include the exact outdoor salt threshold, whether older plants respond similarly, and how rain, soil texture, or repeated exposure could change results. The limits prevent readers from treating the classroom test as a complete model of roadside soil.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

The report explains that darker surfaces absorb more solar energy, so readers understand why surface color may affect melting. It describes placing equal ice cubes on black and white trays in the same sunny location, which controls cube size and light conditions. The report should still admit that wind and tray material could affect the melting rate.

Accept responses that distinguish the purpose of background explanation, procedural detail, and discussion of limits. For the open task, accept varied experiments when all three required sentences are present and the unresolved issue is plausible.