

Seed Data Detectives

Find patterns, unusual results, and limits in a germination investigation.

8.2.B “analyze data by identifying any significant descriptive statistical features, patterns, sources of error, or limitations;”

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline statements that show a data pattern or unusual value. Circle each source of error or limitation, then write 1 beside the most important data feature and 2 beside a limitation that affects the conclusion.

Radish Seed Results

- ① A class tested how many radish seeds would sprout in four trays after seven days. Each tray received 20 seeds from the same packet and the same amount of water. The class counted seedlings once, on Friday. Their results are shown in the table. Before deciding that a result is meaningful, scientists look for the overall pattern and unusual values.

RADISH SEEDLINGS COUNTED AFTER SEVEN DAYS

Tray	Seeds Planted	Seedlings Sprouted
A	20	18
B	20	17
C	20	19
D	20	4

- ② Three trays had counts close together, from 17 to 19 seedlings. Tray D had only 4 seedlings, so it is an unusual value compared with the other results. Including that value makes the average 14.5 seedlings per tray, which does not describe the typical tray very well. The middle two counts are 17 and 18, giving a median of 17.5.
- ③ During cleanup, students learned that Tray D was under a shelf for part of the week. Its soil felt drier than the other trays. These conditions could explain the low count, but they prevent a fair test of seed germination. One count after seven days is another limitation. Some seeds may sprout later, and trays are too few for claims.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 What is the range of the seedling counts? Show the subtraction you used.

2 Describe the main pattern in the four tray results. Which tray is the unusual value?

3 Why does the average of 14.5 seedlings not describe a typical tray well? What median does the passage give?

4 Name one condition that made this test unfair, and explain how it could affect the result.

3 YOUR TURN _____ Your own words

Write exactly three sentences that give a cautious conclusion about the radish seed results. Include one data detail, one reason the conclusion is limited, and one change that would improve a repeat test.

PART 1 • READ AND MARK

Underline statements that show a data pattern or unusual value. Circle each source of error or limitation, then write 1 beside the most important data feature and 2 beside a limitation that affects the conclusion. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What is the range of the seedling counts? Show the subtraction you used.	19 - 4 = 15 seedlings.
2	Describe the main pattern in the four tray results. Which tray is the unusual value?	Trays A, B, and C are close together, with 17 to 19 seedlings. Tray D, with 4 seedlings, is the unusual value.
3	Why does the average of 14.5 seedlings not describe a typical tray well? What median does the passage give?	Tray D's very low count pulls the average down. The median is 17.5 seedlings.
4	Name one condition that made this test unfair, and explain how it could affect the result.	Tray D was under a shelf for part of the week, or its soil was drier. Less light or water could lower the number of seedlings that sprouted.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Most trays had 17 to 19 seedlings after seven days, but these results do not show the usual germination rate for all radish seeds. Tray D had only 4 seedlings and was under a shelf with drier soil, so its result may reflect growing conditions. A repeat test should use more trays with equal light and moisture and count seedlings for more days.

Accept equivalent descriptions of the cluster, the unusual low value, and the range calculation. For the open response, accept any cautious claim supported by data, a valid limitation or uncontrolled condition, and a reasonable improvement.