

Count It Right

Evaluate data-collection methods by comparing counts to a known total.

LS.1.b.ii “planning and carrying out investigations evaluate the accuracy of various methods for collecting data”

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline words that describe either the quick scan or the grid tally. Circle the evidence that shows which method was more accurate.

Testing Clover Counts

- ① A class tested two ways to count clover plants in one-square-meter garden plots. The teacher confirmed that every practice plot held 24 plants, a known reference total. In each trial, a student used either a quick visual scan or a grid frame with equal squares. The class recorded each count and its difference from 24. The table compares three trials.

CLOVER COUNTS, REFERENCE TOTAL: 24 PLANTS

Method	Trial 1 Count	Trial 2 Count	Trial 3 Count	Average Difference From 24
Quick visual scan	20	28	19	4.3
Grid tally	23	25	24	0.7

- ② Accuracy means closeness to the known reference total, not simply getting the same answer each time. The grid-tally method was closer because students counted one square at a time and marked each plant already counted. To make the comparison fair, the class used the same morning light, frame size, and rule: count rooted clover stems, not separate leaves, and repeated both methods thrice.
- ③ The quick scan sometimes missed small plants near frame edges or counted a spreading stem twice. A grid does not guarantee a correct result, because a student can still overlook a plant or apply the rule incorrectly. However, its smaller errors and clear counting path make it more accurate for these plots. Testing new plots would strengthen a broader claim.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 Why did the teacher confirm that each practice plot had 24 plants before the class compared methods?

2 Which method was more accurate? Use the table's average difference as evidence.

3 Name two conditions the class kept the same. Explain how keeping them the same made the comparison fair.

4 Give one reason a grid tally could still produce an incorrect count.

3 YOUR TURN _____ Your own words

Plan a fair test of two ways to count radish seedlings in a tray. In rows 1 and 2, give each method, how you will check its accuracy against a teacher-confirmed total, and one condition kept the same. In row 3, state the rule you will use to decide which method is more accurate.

PLAN PART	DETAILS

PART 1 • READ AND MARK

Underline words that describe either the quick scan or the grid tally. Circle the evidence that shows which method was more accurate. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	Why did the teacher confirm that each practice plot had 24 plants before the class compared methods?	The known total gave the class a reference for measuring how close, or accurate, each count was.
2	Which method was more accurate? Use the table's average difference as evidence.	The grid tally was more accurate because its average difference from 24 was 0.7 plants, compared with 4.3 plants for the quick visual scan.
3	Name two conditions the class kept the same. Explain how keeping them the same made the comparison fair.	Answers include morning light, frame size, and the rule to count rooted clover stems rather than leaves. Keeping conditions the same means differences in counts are more likely caused by the method, not another variable.
4	Give one reason a grid tally could still produce an incorrect count.	A student could overlook a plant or apply the counting rule incorrectly.

PART 3 • YOUR TURN (SAMPLE ANSWER)

PLAN PART	DETAILS
Method A	Quickly scan the tray and count seedlings three times. Compare each count with the teacher-confirmed total of 18, using the same tray and counting only rooted seedlings.
Method B	Place a grid over the same tray and tally seedlings one section at a time three times. Compare each count with 18, using the same tray and counting rule.
Decision rule	Find each method's average difference from 18. The method with the smaller average difference is more accurate.

Accept equivalent controls and accuracy checks that compare repeated counts with a known or teacher-confirmed total. In row 3, accept a decision rule based on the smaller average difference from the reference total.