

Measure It Fairly

Plan consistent metric measurements for a plant-growth investigation.

5.1.b.iv "planning and carrying out investigations take metric measurements using appropriate tools"

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline the words that name a measuring tool or metric unit. Number 1, 2, and 3 beside the steps Maya uses to measure height accurately.

Measuring Bean Seedlings

- ① To test how shade affects bean seedling growth, Maya plans an investigation with two groups of identical plants. She keeps the soil, pot size, water amount, and starting day the same. One group sits near a sunny window, and the other sits under a shade cloth. She will measure each plant once every three days for twelve days.
- ② Before measuring, Maya places a metric ruler beside one seedling. She lines the ruler's zero mark with the soil surface and reads the mark level with the tallest tip, without bending the plant. She records height in centimeters, written cm. A ruler is appropriate because height is a length, not a mass, temperature, or liquid volume.
- ③ At each check, Maya measures all plants in the same way and writes each result with its unit in a data table. If a seedling is 14 centimeters tall, she writes 14 cm, not just 14. After twelve days, she can compare the groups' height changes. Careful metric measurements make the investigation fair and help others understand her results.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 What tool does Maya use, and what quantity does it measure?

2 How does Maya position and read the ruler to measure a seedling correctly?

3 How should Maya record a seedling that is fourteen centimeters tall?

4 Why does Maya measure every plant in the same way and record the unit with each result?

3 YOUR TURN _____ Your own words

Plan three height checks of one real growing plant: Day 0, Day 3 and Day 6. With your teacher, use a metric ruler to measure it now and at both later checks. Keep the zero mark at the soil surface and read the tallest tip without bending it. Record the real date and height with cm at each check. Use the same plant and method. Use extra paper for your plan or an explanation of its measured change.

CHECK / ACTUAL DATE	PLANT MEASURED	TOOL / CONSISTENT METHOD	ACTUAL HEIGHT (CM)

PART 1 • READ AND MARK

Underline the words that name a measuring tool or metric unit. Number 1, 2, and 3 beside the steps Maya uses to measure height accurately. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What tool does Maya use, and what quantity does it measure?	She uses a metric ruler to measure the seedlings' height, which is a length.
2	How does Maya position and read the ruler to measure a seedling correctly?	She lines the ruler's zero mark up with the soil surface and reads the mark level with the tallest tip without bending the plant.
3	How should Maya record a seedling that is fourteen centimeters tall?	14 cm
4	Why does Maya measure every plant in the same way and record the unit with each result?	Using the same method makes the investigation fair. Recording units makes the results clear and understandable.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Illustrative completed records only; pupils must measure their own plant.

CHECK / ACTUAL DATE	PLANT MEASURED	TOOL / CONSISTENT METHOD	ACTUAL HEIGHT (CM)
Day 0 / Oct 1	Sunflower seedling	Metric ruler; zero at soil, tallest tip	8 cm
Day 3 / Oct 4	Same seedling	Same method	9 cm
Day 6 / Oct 7	Same seedling	Same method	10 cm

Accept equivalent descriptions of lining up the ruler and reading the tallest tip. For the open task, accept any appropriate metric tool and unit that match the quantity measured, provided the method is consistent across checks. Teacher setup: provide a living plant and a metric ruler and arrange access for all three checks. Demonstrate and observe zero alignment and scale reading. Require actual dated numerical readings with cm; unchanged or decreasing height is acceptable if accurately measured. The illustrative changes are 1 cm then 1 cm, or 2 cm overall; do not require those values.