

Measure a Seedling

Plan a fair plant investigation with the right tools and units.

3.1.b.iv “planning and carrying out investigations measure length, mass, volume, and temperature in metric and U.S. Customary units using proper tools”

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each measuring tool, circle each unit, and write L, M, V, or T beside the tool for length, mass, volume, or temperature.

A Bean Seedling Plan

- ① A class plans an investigation about bean seedlings. They ask, “Does the amount of water change a seedling’s growth?” Each cup gets the same kind of seed, soil, light, and growing time. The class changes only the water amount. Keeping these parts the same helps them make a fair comparison. They make a plan before they plant the seeds.
- ② First, the class puts 100 grams of soil in each cup. A balance measures mass. They can also record this mass as about 3.5 ounces, a U.S. Customary unit. For water, students use a graduated cylinder and record milliliters, or mL. They could use a measuring cup to record water in fluid ounces. These tools help each group give every cup the planned amount.
- ③ On planting day, students use a ruler to measure each seedling from the soil to its tip. They record height in centimeters and may also use inches. A thermometer checks the air temperature near the cups each day. Students record temperature in degrees Celsius or degrees Fahrenheit. After seven days, the class compares the measurements to see whether different water amounts changed growth.

2

ANSWER WITH EVIDENCE

Use the passage

1

What tool measures the mass of soil, and what two units can the class record?

2

What tool can students use to measure water in milliliters?

3

How should students measure the length of each seedling?

4

What tool checks the air temperature, and what units can students use?

3

YOUR TURN

Your own words

Plan a fair investigation to test which of two surfaces melts an ice cube faster. In the table, name four things you would measure, the proper tool, and a metric or U.S. Customary unit. Include length, mass, volume, and temperature.

WHAT TO MEASURE	TOOL	UNIT

PART 1 • READ AND MARK

Underline each measuring tool, circle each unit, and write L, M, V, or T beside the tool for length, mass, volume, or temperature. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What tool measures the mass of soil, and what two units can the class record?	A balance measures the soil mass. The class can record grams or ounces.
2	What tool can students use to measure water in milliliters?	A graduated cylinder.
3	How should students measure the length of each seedling?	Use a ruler to measure from the soil to the seedling's tip. Record centimeters or inches.
4	What tool checks the air temperature, and what units can students use?	A thermometer checks the air temperature. Students can use degrees Celsius or degrees Fahrenheit.

PART 3 • YOUR TURN (SAMPLE ANSWER)

WHAT TO MEASURE	TOOL	UNIT
Side length of each ice cube	ruler	centimeters
Mass of each ice cube	balance	grams
Volume of melted water after 10 minutes	graduated cylinder	milliliters
Temperature near each surface	thermometer	degrees Celsius

Accept correct tool and unit pairs that match each type of measurement. For the open task, accept metric or U.S. Customary units when the chosen tool and unit fit the measurement.