

Data Detective

Choose the measurements that can answer a testable question.

5.1.b.iii "planning and carrying out investigations determine data that should be collected to answer a testable question"

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each measurement or comparison Maya needs to collect or calculate. Circle the details she keeps the same so you can see which data will answer her question.

Maya's Sunlight Investigation

- ① Maya wants to test whether the number of hours of sunlight changes how tall bean seedlings grow in 14 days. She plants similar bean seeds in identical cups with the same soil. One group will get four hours of sunlight each day, and another group will get eight hours. She plans to keep water amount, cup size, and room temperature the same.
- ② To answer her question, Maya will measure each seedling's height in centimeters before the sunlight plan begins. Then she will measure every seedling on days 3, 6, 9, 12, and 14. In her data table, she will record each plant's group, sunlight hours, and height for each measuring day. Recording several plants in each group will make one unusual plant less important.
- ③ After 14 days, Maya can find how much each seedling grew by subtracting its starting height from its final height. She can compare the average growth of the four-hour group with the average growth of the eight-hour group. The plants' favorite color or the date each seed was purchased would not help answer her sunlight-and-height question directly.

2

ANSWER WITH EVIDENCE

Use the passage

1

What two things must Maya's data show to answer her question?

2

Why does Maya measure the seedlings before the sunlight plan begins and again on day 14?

3

Name two details Maya records in her data table besides height.

4

Name one piece of information that would not help Maya answer her question. Explain why.

3

YOUR TURN

Your own words

Create two testable investigation questions. For each one, name the factor you would change, the data you would collect with units, and at least two details you would keep the same.

TESTABLE QUESTION	FACTOR CHANGED	DATA TO COLLECT, WITH UNITS	KEEP THE SAME

PART 1 • READ AND MARK

Underline each measurement or comparison Maya needs to collect or calculate. Circle the details she keeps the same so you can see which data will answer her question. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What two things must Maya's data show to answer her question?	The number of sunlight hours and the seedlings' heights or growth.
2	Why does Maya measure the seedlings before the sunlight plan begins and again on day 14?	She needs the starting and final heights to find how much each seedling grew.
3	Name two details Maya records in her data table besides height.	Any two: the plant's group, sunlight hours, or measuring day.
4	Name one piece of information that would not help Maya answer her question. Explain why.	The plants' favorite color or the date each seed was purchased, because it does not show the effect of sunlight hours on height.

PART 3 • YOUR TURN (SAMPLE ANSWER)

TESTABLE QUESTION	FACTOR CHANGED	DATA TO COLLECT, WITH UNITS	KEEP THE SAME
Does the amount of water each day affect basil plant height after 21 days?	Water amount each day, mL	Starting and final height of each plant, cm	Seed type, pot size, soil, sunlight
Does ramp height affect the distance a toy car travels?	Ramp height, cm	Distance traveled by the car, cm	Toy car, surface, release place on the ramp