Name: _____ **Date:** _____

Why Did the Scientist Cross the Metric Sea? Grade 4 Measure Quest

Calculate volume gaps and evaluate precision errors in complex laboratory scenarios to prevent a fictional scientific meltdown.

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1. An oceanographer is measuring the depth of a coral reef. If they record 4.5 meters but the actual depth is 12 meters, their measurement is considered:

A. Highly precise but not accurate
B. Both accurate and precise
C. Neither accurate nor precise
D. Accurate but not precise

2. If a chef needs exactly 1 liter of milk but only has a 250-milliliter measuring cup, they must fill that cup exactly four times to reach the correct volume.

A. True
B. False

3. A botanist notices a sunflower grows 2 centimeters every day. To find out how many _____ the flower grew in 50 days, they would multiply 2 by 50.

A. Millimeters
B. Meters
C. Kilometers
D. Decimeters

4. A baker's digital scale always shows '5 grams' even when nothing is touching it. What must the baker do to ensure their measurements are valid?

A. Add 5 grams to every recipe
B. Calibrate or 'zero' the scale
C. Buy a ruler instead
D. Multiply all weights by five

5. In a scientific experiment, it is possible for a set of measurements to be very precise (consistent) but completely inaccurate (wrong).

A. True
B. False

6. To measure the amount of space a liquid medicine takes up in a beaker, a scientist evaluates the _____ of the liquid.

A. Mass
B. Weight
C. Volume

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D. Length

7. Which of these scenarios requires the highest level of precision to avoid a dangerous mistake?

A. Measuring water for a backyard pool
B. Measuring the distance of a morning jog
C. Measuring chemicals for a new medicine
D. Measuring the height of a blade of grass

8. A kilometer is the best unit to use when measuring the thickness of a single sheet of notebook paper.

A. True
B. False

9. If an astronaut has a mass of 80 kilograms on Earth, their _____ will stay the same on the Moon, even if they feel lighter.

A. Weight
B. Height
C. Mass
D. Volume

10. A meteorologist records the temperature at exactly 22.458 degrees Celsius. Why would they use three decimal places instead of just rounding to 22?

A. To hide that they are unsure of the data
B. To show a higher level of precision
C. Because integers are not allowed in science
D. To make the math harder for others