Name: _____ **Date:** _____

Crush These SI Standards: A 10th Grade Measurement Challenge

Dimensional analysis, base unit identification, and magnitude recognition. Build the foundational precision required for advanced laboratory chemistry and physics simulations.

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1. In the laboratory, you are asked to measure the potential difference across a terminal. Which SI unit will you use to record your data?

A. Watt
B. Volt
C. Ohm
D. Ampere

2. The kilogram is unique among SI base units because it is the only one defined by a physical artifact rather than a fundamental constant of nature.

A. True
B. False

3. Scientists measuring the frequency of light waves utilize the _____ as the standard unit of measurement.

A. Joule
B. Newton
C. Hertz
D. Pascal

4. When measuring the distance between stellar bodies in our galaxy, astronomers often convert light-years into which SI base unit?

A. Kilometers
B. Miles
C. Meters
D. Astronomical Units

5. To calculate the pressure of a gas inside a sealed chamber, a 10th-grade student should record the final value in _____.

A. Liters
B. Pascals
C. Kelvins
D. Moles

6. The Kelvin scale is an absolute temperature scale where 0 K represents the point at which all molecular motion ceases.

A. True

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B. False

7. Which of the following is considered a 'supplementary' or 'derived' unit rather than one of the seven fundamental SI base units?

A. Candela
B. Newton
C. Mole
D. Ampere

8. The prefix 'nano-' in the metric system represents a factor of _____.

A. One millionth
B. One thousandth
C. One billionth
D. One trillionth

9. An measurement that is 'precise' must also be 'accurate' according to scientific standards.

A. True
B. False

10. If a chemist is measuring the 'luminous flux' or the total amount of light emitted by a source per unit time, they utilize the:

A. Lumen
B. Watt
C. Candela
D. Lux