1B: Scientific Notation and Unit Conversions

conversion factor - multipliers that allow us to convert a quantity expressed in one kind of unit into an equivalent value expressed in another.

base unit - a fundamental unit of measurement that is defined arbitrarily and not based on other combinations of units. Examples from the SI system include the meter, kilogram, liter, second, and kelvin.

derived units - a unit created by combining base units.

Imperial system - a system of units of measurement that is primarily used in the United States and consists of units like the pound, ounce, mile, and inch.

International System of Units (SI) - a complete metric system of units of measurement used by scientists that is based on multiples of ten.

scientific notation - a mathematical expression used to represent a decimal number between 1 and 10, multiplied by ten to a power of 10, so you can write large or small numbers using less digits.

1C: Significant Figures

significant figures - the important digits in a number that express its precision.

1D: Vectors and Scalars

magnitude - the amount or quantity.

Pythagorean Theorem - a theorem that states that the square of the length of the hypotenuse of a right triangle equals the sum of the squares of the lengths of the other two sides.

scalars - quantities that are described by magnitude alone. Examples include time, speed, mass, and distance.

vectors - quantities that express magnitude and direction.
Unit 1: Introduction to Physics

1E: Graphical Resolution of Vectors

magnitude - the amount or quantity.

Pythagorean Theorem - a theorem that states that the square of the length of the hypotenuse of a right triangle equals the sum of the squares of the lengths of the other two sides.

resultant - a vector quantity that is equal to the addition of two or more vector components acting at the same point.

.scalars - quantities that are described by magnitude alone. Examples include time, speed, mass, and distance.

tip-to-tail method - a method of vector addition where one can add any two vectors by placing the tail of one so that it meets the tip of the other one.

vectors - quantities that express magnitude and direction.

1F: Mathematical Resolution of Vectors

magnitude - the amount or quantity.

Pythagorean Theorem - a theorem that states that the square of the length of the hypotenuse of a right triangle equals the sum of the squares of the lengths of the other two sides.

resultant - a vector quantity that is equal to the addition of two or more vector components acting at the same point.

.scalars - quantities that are described by magnitude alone. Examples include time, speed, mass, and distance.

tip-to-tail method - a method of vector addition where one can add any two vectors by placing the tail of one so that it meets the tip of the other one.

vectors - quantities that express magnitude and direction.

1G: Graphing Relationships

extrapolation - estimating a value beyond a set of data points on a graph.

hypothesis - an educated guess.

independent variable - a variable that is directly changed in an experiment.

dependent variable - a variable that changes in response to the changing independent variable.

.interpolation - estimating a value within a set of data points on a graph.

.scientific method - a methodical way to test a hypothesis, based on data collection and having controlled variables.