

Physics: Learning Objectives

The Science of Physics

1. Define physics and identify its major branches and areas.
2. Identify and describe the fundamental ideas in physics.
3. Identify and describe the major steps of the scientific method.
4. Describe a physical “system” and explain how a “model” functions to describe the system.
5. Describe the relationship between scientific laws, theories and principles.
6. Identify the standard quantities and units of the SI and state how each standard unit is currently define.
7. Distinguish between physical quantities and physical units and identify each based on the type of symbols used to represent them.
8. Use powers of ten to evaluate orders of magnitude for size and scale.
9. Recognize equations and graphs as the mathematical language of physics that describe physical relationships, express behavior of natural phenomena and laws/principles.
10. Apply Dimensional Analysis and mathematical operations to evaluate the validity of equations and to solve equations for a particular quantity.