



PHYSICAL SCIENCE EXPLORED

Scope & Sequence

Lesson 1: Introduction to Physical Science

What is Physical Science?
Scientific Method

Lesson 2: Measurements and Unit Conversions

SI vs. English Unit Systems
Unit Conversions Using the Factor-Label Method

Lesson 3: Tools for Scientific Study

Accuracy and Precision
Scientific Notation

Lesson 4: Classification and Properties of Matter

Matter, Mass, and Weight
Pure Substances and Mixtures
Physical and Chemical Properties and Changes

Lesson 5: Density & States of Matter

Calculating Density
States of Matter and their Properties
Phase Changes

Lesson 6: Structure of the Atom

Subatomic Particles
Bohr Model

Lesson 7: Introducing the Periodic Table

Reading the Periodic Table

Identifying Periods, Groups, and Types of Elements

Lesson 8: Stability and Types of Bonding

Valence Electrons and Dot Diagrams

Ionic, Covalent, and Metallic Bonding

Lesson 9: Exam 1

Lesson 10: Reading and Writing Chemical Formulas

Understanding Chemical Formulas

Writing Chemical Formulas from Names

Lesson 11: Naming Ionic Compounds

Fixed and Variable Charged Ions

Naming Ionic Compounds

Lesson 12: Names and Formulas for Molecular Compounds

Why Do Nonmetals Have Different Charges?

Naming and Writing Formulas for Molecular Compounds

Lesson 13: Balancing Chemical Equations

Law of Conservation of Mass

How to Balance Chemical Equations

Lesson 14: Types of Chemical Reactions

Identifying Types of Reactions: Synthesis, Decomposition, Single Replacement,

Double Replacement, and Combustion

Lesson 15: Solutions

Review of Pure Substances and Mixtures

Solubility and Types of Solutions

Calculating Molarity

Lesson 16: Acids and Bases

Properties of Acids and Bases
Acids and Bases in your Home

Lesson 17: Nuclear Changes

Types of Nuclear Decay
Half Life Calculations

Lesson 18: Exam 2

Lesson 19: Describing Motion

Intro to Physics
Velocity and Motion
Velocity Graphs

Lesson 20: Acceleration

What is Acceleration?
Acceleration Graphs

Lesson 21: Newton's 1st and 2nd Laws

Inertia (Newton's 1st Law)
Net Force (Newton's 2nd Law)
Force Diagrams

Lesson 22: Gravity and Projectile Motion

Calculating Force of Gravity
Force Diagrams
Projectile Motion

Lesson 23: Newton's 3rd Law

Action and Reaction (Newton's 3rd Law)
Review of Forces

Lesson 24: Work and Power

Work and Energy
Calculating Power

Lesson 25: Simple Machines

What is a Simple Machine?

Types of Simple Machines

Lesson 26: Exam 3**Lesson 27: Heat and Temperature**

Energy and Heat Transfer

Heat vs. Temperature

Lesson 28: Waves

Transverse vs. Longitudinal Waves

Parts of a Wave

Wave Calculations

Lesson 29: Sound and Light

Properties of Sound Waves

Properties of Light Waves

Lesson 30: Reflection and Color

What is Reflection?

Reflection diagrams

How we See Colors

Lesson 31: Refraction, Lenses, and Prisms

What is Refraction?

Types of Lenses and Lens Diagrams

Prisms

Lesson 32: Measuring Electricity

What is Electricity?

Voltage, Current, Resistance, and Ohm's Law

Transformers

Lesson 33: Electric Circuits

How do Circuits Work?

Circuit Diagrams

Lesson 34: Magnetism

Intro to Magnets

Magnetic Field Diagrams

Electromagnets

Lesson 35: Exam 4