

## **Junior High**

### **8<sup>th</sup> Grade Physical Science**

#### Aim of Course:

Students will be introduced to the basic principles and theories of the physical sciences.

#### Course Description:

Physical Science is taught as a survey class and students will cover topics including atomic structure, basic chemistry, forces, energy, motion, waves and electricity. Students will complete a variety of activities during the year from simple note taking skills, individual and group labs/projects, and Internet based research projects. Students will be assessed by homework assignments, quizzes, lab reports, and tests.

#### Text:

Holt Science & Technology - Physical Science  
Publisher - 2007 Holt, Rinehart and Winston

#### Assessments:

Students will be assessed by a minimum of 350 points per quarter. The following areas will be included in the 350 points:

Homework /Seatwork /Daily Work - 20-45%

Labs / Projects / Research – 20-30%

Quizzes/ Tests – 35-50%

#### Course Outline:

##### I. First Quarter

##### Unit 1: Introduction to Matter

##### Chapter 1: The World of Physical Science

Exploring Physical Science

Scientific Methods

Scientific Models

Tools, Measurement, and Safety

##### Chapter 2: The Properties of Matter

What is Matter?

Physical Properties

Chemical Properties

##### Chapter 3: States of Matter

The States of Matter

Behavior of Gases

Changes of State

##### Chapter 4: Elements, Compounds and Mixtures

Elements

Compounds

Mixtures

## II. Second Quarter

### Unit 2: Motion and Forces

#### Chapter 5: Matter in Motion

Measuring Motion

What is Force?

Friction: A Force that Opposes Motion

Gravity: A Force of Attraction

#### Chapter 6: Forces and Motion

Gravity and Motion

Newton's Laws of Motion

Momentum

#### Chapter 7: Forces in Fluids

Fluids and Pressure

Buoyant Force

Fluids in Motion

### Unit 3: Work, Machines, and Energy

#### Chapter 8: Work and Machines

Work and Power

What is a Machine?

Types of Machines

## III. Third Quarter

#### Chapter 9: Energy and Energy Resources

What is Energy?

Energy Conversions

Conservation of Energy

Energy Resources

#### Chapter 10: Heat and Heat Technology

Temperature

What is Heat?

Matter and Heat

Heat Technology

### Unit 4: The Atom

#### Chapter 11: Introduction to Atoms

Development of the Atomic Theory

The Atom

#### Chapter 12: The Periodic Table

Arranging the Elements

Grouping the Elements

## IV. Fourth Quarter

### Unit 5: Interactions of Matter

#### Chapter 13: Chemical Bonding

Electrons and Chemical Bonding

Ionic Bonds

Covalent and Metallic Bonds

#### Chapter 14: Chemical Reactions

Forming New Substances

Chemical Formulas and Equations

Types of Chemical Reactions

Energy and Rates of Chemical Reactions

Unit 6: Electricity

Chapter 17: Introduction to Electricity

Electric Charge and Static Electricity

Electric Current and Electric Energy

Electrical Calculations

Electric Circuits

Unit 7: Waves, Sound, and Light

Chapter 20: The Energy of Waves

The Nature of Waves

Properties of Waves

Wave Interactions

\* Please note that the course outline is subject to change. If any changes are made, the students will be notified of those changes.