

Phoenix Christian Jr High School Sixth Grade Physical Science/Health Course Scope & Sequence (2010)

COURSE DESCRIPTION: The study of physical science will introduce physics and chemistry. Information and discovery activities will reinforce their vocabulary and scientific inquiry/method skills. Foundational information is the basis for increasing skills and knowledge in these scientific areas. The study of health will introduce the concept of healthy living for God's purpose for our lives.

REQUIRED TEXTS AND *KEY SUPPLEMENTAL MATERIALS:

Explorer Physical Science, Prentice Hall (Pearson) ISBN 0-133668906

Explorer Physical Science Workbook, Prentice Hall (Pearson) ISBN 0-131901982

Health Curriculum will be provided by the teacher.

COURSE SCOPE AND SEQUENCE

First Semester

Introduction to Physical Science 5 Weeks

Key Concepts: Explain what Physical Science involves, identify skills scientists use, describe how scientist investigate, explain the roles of models, laws, and theories, follow lab safety procedures, know what to do if a lab accident occurs, explain how society and technology affect each other, demonstrate the ability to use scientific tools (metric) for measuring.

Assessments: Directed Reading, Quizzes, Homework, Labs, Review, Test

Biblical Integration: Psalms 90:2 teaches us to number our days. "Number" means to measure them to see if they are up to God's standards.

Introduction to Matter 4 1/2 Weeks

Key Concepts: Identify the properties used to describe matter, define elements and explain how they relate to compounds, describe the properties of a mixture, differentiate between weight and mass, identify the units used to express the amount of space occupied by matter, describe how the density of a material is determined, describe what a physical change is, describe what a chemical change is, explain how changes in matter are related to changes in energy, identify forms of energy that are related to changes in matter, describe how chemical energy is related to chemical change.

Assessments: Directed Reading, Quizzes, Homework, Labs, Review, Test

Biblical Integration: God created the universe and everything in it. Everything is subject to God. The orderliness of God is revealed through His creation of substances and their precise structures.

Solids, Liquids, and Gases 4 Weeks

Key Concepts: Describe the characteristics of a solid, a liquid, and a gas, explain what happens to a substance during changes from solid to liquid, liquid to gas, and solid and gas, list the types of measurements used when working with gases, explain how the volume, temperature, and pressure of a gas are related, identify the differences between Charles's Law and Boyle's Law.

Assessments: Directed Reading, Homework, Quizzes, Labs, Review, Test

Elements, Atoms, and Bonding/Periodic Table 4 1/2 Weeks

Key Concepts: Describe how atomic theory developed and changed, describe the modern model of the atom, tell what information about elements is found in the Periodic Table, list the physical properties of metals, explain how the reactivity of metals changes across the Periodic Table, describe the properties of nonmetals, and how metalloids are useful, state what the Periodic Table tells you about atoms and the properties of elements, describe ions, and explain how they form bonds, explain how the formulas and names ionic compounds are written, identify the properties of ionic compounds.

Assessments: Directed Reading, Homework, Quizzes, Labs, Review, Test

Biblical Integration: God's creation of all the earth is based on the structure of the atom and the elements. Studying the structure of matter brings us closer to God's power in all he created. Genesis 1:14 "Then God said, "Let there be lights in the expanse of the heavens to separate the day from the night, and let them be for signs, and for seasons, and for days and years."

Second Semester

Motion 4 1/2 Weeks

Key Concepts: Determine when an object is in motion, describe how scientists measure distance, calculate an object's speed and velocity, demonstrate how to graph motion, describe the motion of an object as it accelerates, calculate acceleration, describe what graphs are used to analyze the motion of an accelerating object.

Assessments: Directed Reading, Homework, Quizzes, Labs, Review, Test

Biblical Integration: Our God is perfect God, and we should work towards that Perfection in our work; in this case, our lab skills and data records/graphing.

Forces 4 1/2 Weeks

Key Concepts: Describe what a force is, describe friction, and identify factors that determine the friction force between two objects, identify the factors that affect the gravitational force between two objects, explain why objects accelerate during free fall, state Newton's First, Second, and Third Law of Motion, explain how an object's momentum is determined, state the Law of Conservation of Momentum.

Assessments: Directed, Reading, Homework, Quizzes, Labs, Review, Test

Biblical Integration:

Forces in Fluids

3 Weeks

Key Concepts: Explain what pressure depends on, explain how fluids exert pressure, and describe how fluid pressure changes with elevation and depth, describe the effect of the buoyant force, explain how the density of an object determines whether it sinks or floats

Assessments: Quizzes, tests, worksheets, checkup questions, healthful hints.

Growth and Fitness

2 Weeks

Key Concepts: How a baby grows and develops inside the womb, how your body grows and develops, the parts of a cell and parts and functions of the endocrine system, how to maintain an active lifestyle, the importance of an active lifestyle and nutrition, and how to work out for an active lifestyle.

Assessments: Directed Reading, Homework, Quizzes, Labs, Review, Test

A Healthy Mind and Body

4 Weeks

Key Concepts: Immunity and disease-causing microorganisms, integumentary system, lymphatic system, central nervous system, the brain, spinal cord, nerves and five senses; drugs, helpful use and abuse, harmful effects of drugs, how to maintain a healthy spiritual life.

Assessments: Directed Reading, Homework, Quizzes, Labs, Review, Test

Biblical Integration: Human beings have value because we are made in the image and likeness of God. This value also brings the responsibility to care for our bodies and use them wisely. Jeremiah 1:5 "Before I formed you in the womb I knew you, And before you were born I consecrated you; ..." 1 Corinthians 3:17 "If any man destroys the temple of God, God will destroy him, for the temple of God is holy, and that is what you are."