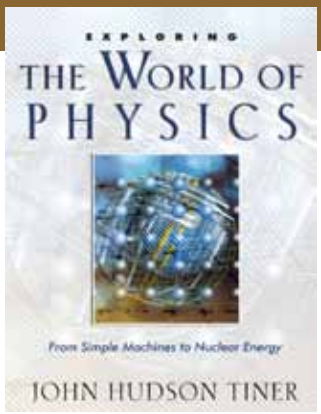

Science/Physics

GRADE LEVEL:
Jr. High and High School

Scope and Sequence

COURSE OVERVIEW:

Physics is a branch of science that many people consider to be too complicated to understand. In this exciting text, John Hudson Tiner puts this myth to rest as he explains the fascinating world of physics in a way that students can truly comprehend. Learn about the history of physics from Aristotle to Galileo to Isaac Newton to the latest advances. Discover how the laws of motion and gravity affect everything from the normal activities of everyday life to launching rockets into space. Learn about the effects of inertia firsthand during fun and informative experiments.

FEATURES:

Filled with photos and illustrations to enhance the learning perspectives, this text contains concepts for discussion and review, detailed content explanations, chapter exams, and a thorough glossary of terms that can be utilized for reviewing vocabulary or spelling ability. Answers to the chapter tests are available in the back of the book. This title is available as a stand-alone text or in a special *"Exploring Series"* package that includes: biology, chemistry, Earth science, ecology, mathematics, history of medicine, and physics.

CONTENT FOCUS:

Chapter 1: Motion

Concepts for discussion:

- How do modern scientists test new ideas?
- What discovery helped clocks keep better time?
- How did Galileo slow the motion of falling balls?

Chapter 2: Laws of Motion

Concepts for discussion:

- How does a push or pull change motion?
- Why do dump trucks have powerful engines?
- Why does a ball player follow through as he swings a bat?

Chapter 3: Gravity

Concepts for discussion:

- Why did Kepler fail at first to calculate the orbit of Mars?
- How are motions in space and those on earth alike?
- How can astronomers find unseen planets around distant stars?

Chapter 4: Simple Machines

Concepts for discussion:

- Can a small force move a heavy load?
- Do simple machines give something for nothing?
- How did ancient Egyptians build the pyramids?

Chapter 5: Energy

Concepts for discussion:

- How is an electric battery like water behind a dam?
- How is a watt like a horsepower?
- Does a moving object have energy?

Chapter 6: Heat

Concepts for discussion:

- What is heat?
- What stores heat better than most other everyday substances?
- Why do islands in the ocean usually have a pleasant sea breeze?

Chapter 7: States of Matter

Concepts for discussion:

- How can cars ride more smoothly?
- What gives the strong spray to water from a shower nozzle?
- What causes a hot air balloon to rise?

Chapter 8: Wave Motion

Concepts for discussion:

- What causes sound?
- Can sound be reflected?
- How can birdwatchers use sound to identify a bird?

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Chapter 9: Light

Concepts for discussion:

- Is sunlight pure and colorless?
- How does the eye see all colors?
- Is the speed of light the same in all substances?

Chapter 10: Electricity

Concepts for discussion:

- What causes static electricity?
- Which is weaker, static electricity or gravity?
- How can energy be sent through wires?

Chapter 11: Magnetism

Concepts for discussion:

- What attracts a compass needle?
- What is the cause of magnetism?
- Can magnetism be used to make electricity?

Chapter 12: Electromagnetism

Concepts for discussion:

- How do radio waves carry sound?
- Can light put electrons in motion?
- Can a spaceship sail on sunlight?

Chapter 13: Nuclear Energy

Concepts for discussion:

- Can the nucleus of an atom be changed?
- Is it possible to split an atom?
- Does anything good come of nuclear reactors?

Chapter 14: Future Physics

Concepts for discussion:

- Which color gives off heat better?
- Can we measure all of the properties of an object?
- Is anything left to discover in physics?

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