

2010-2011 WHRO VideoClassroom Preview

Series Title:	Elementary Physical Science
Curriculum Area:	Science
Grades:	3-5
# of Programs/Length:	5/15:00 minute programs

This 5-part science series explores the major concepts in physical science relating to force, energy, waves, and sound. The skills and steps used to solve problems and answer questions using the scientific method are outlined using appropriate terminology for students in the elementary grades. Each program includes a 5-question end of video assessment, periodic discussion questions that engage students, and a comprehensive downloadable 25-page teacher's guide that includes assessments, vocabulary, lab investigations and lesson plans.

Correlated to state and National Science Standards and AAAS Benchmarks for Science Literacy. Recommended by the National Science Teacher's Association <http://www.nsta.org/recommends/>

1.) **What Is Sound? (Preview Title)**

When you hear the roar of traffic, the bark of a dog, or your teacher's voice, you are experiencing sound. Colorful animations help viewers understand the different features of sound waves. Important characteristics of sound, including intensity, loudness, pitch, and frequency, are also discussed. Special attention is given to caring for your ears and hearing.

2.) **Forces In Fluids**

Using colorful animations, this video explores the fascinating characteristics of fluids. Pressure and its impact on the behavior of fluids is emphasized. Bernoulli's and Pascal's principles are highlighted, offering real-life examples of both. Finally, density and its effect on buoyancy are explored. Additional concepts and terminology: hydraulic devices, particles, differences in pressure, air pressure, and buoyant force.

3.) **Exploring Energy**

Everyday we use many types of energy to accomplish different tasks. This program uses real-life examples to differentiate between potential and kinetic energy, and to demonstrate different forms of energy, including mechanical, thermal, chemical, electromagnetic, sound, and nuclear energy. Energy conversions, in which energy changes from one form to another, are also discussed.

4.) **The Nature Of Waves**

When we think of waves, we often think of the ocean or another large body of water. In this video, students learn that waves are all around us and are responsible for many of the sounds we hear and the light we see. Real-life examples are used to explain how waves move and travel through different mediums. The different types of waves, and the ways in which they interact with one another, are discussed. The program also emphasizes important properties of waves, including amplitude, frequency, and wavelength. Additional concepts and terminology: energy, transverse wave, longitudinal wave, reflection, refraction, and interference.

5.) **Scientific Method**

We are faced with problems and questions every day of our lives. This video introduces students to the scientific method, which scientists use to solve problems and answer questions they have about our world. Real-life examples are used to outline the various steps of the scientific method, including defining a problem or question, gathering information, forming and testing a hypothesis, recording and analyzing data, and stating a conclusion. Additional concepts and terminology: measuring, experiment, control, variable, data analysis, and graph.