



## Supplemental Fifth Grade Science Resources

Materials include DVDs, videos, and models

# ENVIRONMENTS

### Marine Ecosystems

577.5 MAR

1 DVD, 23 minutes

Explores saltwater environments from shorelines to coral reefs learning about the interdependence of fish, plants, mammals and insects, and examines such concepts as salinity and currents and the three life zones in ocean waters. Discussion questions -- Teacher's guide.

Series: Biomes of the World in Action.

### Bill Nye the Science Guy: Fish

597 BIL

1 DVD, 26 minutes.

Explores the depths to study fish and discover how they breathe, grow and survive in their wet environment.

### Bill Nye the Science Guy: Biodiversity

333.7 BIL

1 DVD, 26 minutes.

Bill Nye visits an ocean, a forest and a field to show what happens when one link falls out of nature's chain.

### Environments FOSS Science Stories Book Kit - Spanish

333.7 ENV

Set of 30 Spanish Medio Ambientes. Reserved for 5th grade.

### Bill Nye Earth Science: Water Cycle/Oceanography

551.6 BIL

1 VHS videocassette 52 minutes, 2 teacher's guides

Water Cycle - 26 min - discusses molecules and water as a gas, liquid, and solid.

Oceanography - 26 min - discusses currents, and salt and other minerals.

*Recommended: Oceanography section.*

### Understanding Oceans

551.4 UND

1 VHS videocassette, 51 minutes, 1 teachers guide, grade 6 7 8 9 10.

Explores the ocean environment, including currents, marine life, pollution, and effects on climate, such as El Nino. Closed Captioned.

### Three-Two-One Contact: Ocean Environment 3-D Sea

551.4 THR

1 VHS videocassette, 15 minutes, 1 ditto, 1 teachers guide.

Examines ocean life. Closed Captioned.

1 VHS videocassette 9 minutes, 1 teacher's guide, dittos.

Explores space program, travel, exploration in space, planets, etc.

# LANDFORMS

## Stream Tables

### **Bill Nye the Science Guy: Rivers and Streams**

551.48 BIL

1 DVD, 26 minutes.

Follows the flow of rivers and streams from their origins, showing the impact they have on our lives.

### **Bill Nye the Science Guy: Lakes and Ponds**

551.48 BIL

1 DVD, 26 minutes

Bill Nye answers questions about lakes and ponds, and leads an investigation of the plants, animals, and microscopic organisms that live in them.

### **Bill Nye the Science Guy: Earth's Crust**

550 BIL

1 DVD, 26 minutes.

Using a question and answer format, Bill Nye goes to the depths of the earth to explain how its surface and inner mantle differ.

### **Bill Nye the Science Guy: Erosion**

551.3 BIL

1 DVD, 26 minutes.

Examines the different forces of erosion and how they change the landscape of the earth.

### **Bill Nye Earth Science: Fossils/Erosion**

550 BIL

1 VHS videocassette 52 minutes, 2 teacher's guides.

Fossils - 26 min - illustrates different types of fossils and shows how the study of fossils gives scientists a clue to events of the past.

Erosion - 26 min - shows how water, wind, and chemicals cause erosion, and how soil types erode at different rates.

### **Bill Nye the Science Guy: Rocks and Soil**

552 BIL

1 DVD, 26 minutes.

Explains solid facts on volcanoes, landslides, tectonic plates, rivers and weather, looking at their effects on the creation of rocks and soil.

### **Bill Nye Earth Science: Earth's Crust/Rocks and Soil**

550 BIL

1 VHS videocassette, 52 minutes, 2 teachers guide

Earth's Crust - 26 min - discusses plate tectonics.

Rocks & Soil - 26 min - discusses igneous, sedimentary and metamorphic rocks.

### **3-2-1 Contact: Erosion - Earth is Changing**

551.3 THR

1 VHS videocassette 15 minutes, 1 ditto, 1 teachers guide. Grade Level: 3 - 6

Examines how wind and water cause slow changes, while volcanoes, hurricanes and earthquakes produce sudden landscape changes.

## **Erosion**

551.3 ERO

6 study prints

Titles: What is Mechanical Weathering?; What is Chemical Weathering?; Erosion By Water: How It Takes Place; Erosion By Water: Erosion Forms; Erosion by Waves; Erosion By Wind.

## **Running Water: How it Transports and Erodes**

551.48 RUN

1 videocassette, 41 minutes + teachers guide

Explores the relationship of running water to the land. Investigates suspension, solution, load, rapids, potholes, meanders, braided streams, deltas, alluvial fans, waterfalls and flood plains. Discusses characteristics found in youthful, mature and old streams.

## **Go With the Flow**

### **Landforms of Running Water**

551.4 LAN

8 study prints

Titles: Mature Stream Topography; Youthful Stream Topography; Delta; Braided Stream; Alluvial Fan; Waterfall; Canyon Lands; Natural Bridge.

### **Landform Model**

550 LAN

1 model (8 piece), 1 student booklet, 7 cassettes, 2 teacher's guides

Depicts landform features of geologic structures: coastlines and coastal plains, canyons, fault block, folded mountains, glaciers, and a volcano. Features are numbered and referenced.

## **Build a Mountain**

### **Topography**

551.1 TOP

1 DVD, 23 minutes + teacher's guide

Presents an introduction to the unique features of the Earth's topography, showing how mountains form, as well as providing information on forces that change its surface, such as earthquakes, volcanoes, and water.

### **Measuring Land and Water**

530.8 MEA

1 VHS videocassette, 12 minutes

First segment: Shows how computers and satellites are used to help create up-to-date maps of land and water surfaces.

Second segment: Relates the methods used to measure the depth of commercial waterways at different times of the day and under different weather conditions to make sure they are deep enough for ships and barges to navigate safely.

Explains how measurement is used to find the direction and distance, describes why measurement is necessary to plan communities, and follows ships that measure and map waterways.

## **Bird's Eye View**

### **Stereo Atlases with Stereoscopes**

550 STE

15 stereo atlas books, 15 stereo glasses  
Includes different views of U.S. landforms.

**Relief Maps: United States**

973 REL

15 maps (28"x18"). Grade Level: 3 - 12  
Three-dimensional relief maps illustrate geographical features of the United States.

**Willamette Valley Relief Map**

979.5 WIL

1 map  
Raised relief topographic map of Salem and the Willamette Valley. Shows populated areas, roads and railroads, contour interval contingent on terrain, and woodlands shown by green tint.

**America's National Parks**

973 AME

2 VHS videocassettes 170 minutes  
Explores all 53 of America's National Parks, including the story behind the establishment of each park. Titles: America's Adventurous and Majestic Parks - 85 min; America's Historic and Scenic Parks - 85 min.

**Scenic Wonders of America: Pacific Frontiers**

973 SCE

1 VHS videocassette, 60 minutes  
Explores Death Valley, Sequoias of California, Big Sur, Yosemite, Crater Lake, Mount Rainier, Olympic, Glacier Bay, Haleakala

**Mount Rainier and Olympic**

973 MOU

1 VHS videocassette, 66 minutes  
Overview of the history, geology, geography, wildlife, and rainforest of this great national park.

**Extension:**

**Earth Science Library 3**

550 EAR

10 hardback books, 1 booklet, 1 poster  
Titles: How The Earth Works; Our Violent Earth; Science Fun With Mud and Dirt; Soil Erosion and Pollution; The Sun, the Wind and the Rain.

**Physical Systems**

550 PHY

1 DVD, 23 minutes + teacher's guide  
Examines the nature of Earth's four main physical systems, the atmosphere, lithosphere, hydrosphere and biosphere, explaining how the systems are linked and how they impact life on Earth.

**Junior Geologist**

550 JUN

4 VHS videocassettes 32 minutes, 23 dittos, 1 teacher's guide.  
Examines plate tectonics, earth structure, rock cycle, erosion and minerals.

## **Glaciers**

551.3 GLA

6 study prints.

Titles: What are Icebergs?; What Changes do Glaciers Make in the Surface of the Earth?; What are Some of the Features of Glaciers?; How are Valley and Continental Glaciers Formed?; What Are Continental Glaciers?; What are Valley Glaciers?

## **Bill Nye the Science Guy: Volcanoes**

551.21 BIL

1 DVD, 26 minutes.

Bill Nye explains volcanoes: what they are, how they are formed, and the different types that exist.

## **Bill Nye Earth Science: Spinning Things/Earthquakes**

551.2 BIL

1 VHS videocassette 52 minutes, 2 teachers guides. Grade Level: 4 - 9

Spinning Things - 26 min. - discusses centripetal and centrifugal force.

Earthquakes - 26 min - discusses plate tectonics.

## **Eyewitness: Volcano**

551.2 EYE

1 VHS videocassette, 35 minutes.

Examines volcanic eruptions and earthquakes around the world. Discusses why and how volcanoes erupt and the rebuilding that goes on in the aftermath. Includes actual photos of the Mt. St. Helens explosion.

## **Bill Nye the Science Guy: Earthquakes**

551.22 BIL

1 DVD, 26 minutes

Bill Nye explains what makes the big pieces of the Earth's crust move and what you should have on hand in case of a quake.

## **Earth Science: Volcanoes - Understanding the Hazards**

551.2 EAR

1 VHS videocassette, 20 minutes + 1 teacher's guide.

Examines processes that cause volcanic eruptions; various types of volcanoes; and the effects on humans of volcanic eruptions.

## **Three-Two-One Contact: Volcanoes - Too Hot to Handle**

551.2 THR

1 VHS videocassette, 15 minutes, 1 ditto, 1 teachers guide.

Examines how volcanoes create new land masses. Includes Mount St. Helens.

## **Mt. St. Helens**

551.2 MTS

3 study prints, 3 maps

Black and white photos of Mt. St. Helens before and after eruption, map features and blast zone, mud, ash and pyroclastic flows, craters, eruption, stages and time line of major events.

## **Volcanoes**

551.2 VOL

6 study prints, grade 3 - 9

Titles: A Volcanic Neck; Development of a Caldera; The Shield Type Volcano; A Dormant Volcano in the United States; Volcanic Activity: Surface Evidence of Internal Unrest; Birth of the Paricutin Volcano.

# MIXTURES AND SOLUTIONS

## **3-2-1 Contact: Crystals - They're Habit Forming**

552 THR

1 VHS videocassette 15 minutes, 1 ditto, 1 teacher's guide.

Examines the types, forms and growth of crystals.

## **Mr. Wizard's World: Chemical Reactions**

540 MRW

1 VHS videocassette 18 minutes, 2 dittos, 1 teacher's guide.

Activity segments: Homemade Hydrogen; Homemade Fire Extinguisher; Oven Cleaner and Aluminum Reaction; "Burning" Sugar; Cleaning Silver. Activities progress from simple to complex scientific principles.

## **Bill Nye Physical Science: Chemical Reactions/ Phases Of Matter**

530 BIL

1 VHS videocassette 52 minutes, 2 teacher's guides.

Chemical Reactions - 26 min - discusses elements, how new chemicals are formed, and how energy is released in a chemical reaction. Phases of Matter - 26 min - discusses energy and the three phases of matter.

## **Mr. Wizard's World: Chemistry in the Kitchen**

540 MRW

1 VHS videocassette 26 minutes, 1 ditto, 1 teacher's guide.

Activity segments: The Effect of Salt on Ice; How Much Gas in Soda?; Making Glue from Milk; Bleach Art; Secret Inks; Explosive Flour; Steel Wool "Fireworks". Activities progress from simple to complex scientific principles.

## **Mr. Wizard's World: Chemical Tests**

540 MRW

1 VHS videocassette (26 minutes), 1 ditto, 1 teacher's guide,

Activity segments: What Makes a Candle Burn?; Testing for Hydrogen; Kitchen Chromatography; Cabbage Juice Indicator; Starch Iodine Test; Iodine Clock Reaction. Activities progress from simple to complex scientific principles.

# MODELS AND DESIGNS

## **3-2-1 Contact: How Do You Know? Make a Model**

500 THR

1 VHS videocassette 15 minutes, 1 ditto, 1 teacher's guide.

Examines how scientists use models to test their theories.

## **Bill Nye Physical Science: Science of Music/ Architecture**

530 BIL

1 VHS videocassette 52 minutes, 2 teacher's guides.

Science of Music - 26 min - looks at the physics and mathematics of sound, including wavelength, pitch, and rhythm. Architecture - 26 min - explores the merging of art and science in the work of architects, the use of 3D models and 2D plans, and how "form follows function" in the design of a structure.

## **Extension: Inventors and Inventions**

### **Eyewitness: Inventions**

608 EYE

8 hardback books, 1 poster, 8 help cards, 16 project cards, 1 teacher's guide,  
Book titles: Invention; Smithsonian Visual Timeline of Inventions.  
Students explore a variety of inventions, then design and make their own creations.

### **Inventors and Inventions**

608 INV

1 VHS videocassette 22 minutes, 1 teacher's guide. Grade Level: 5 - 7

Looks at inventions and inventors, and their impact on modern life. Explores inventions that help us live longer, learn better, improve productivity, or help enjoy leisure time.

### **Inventions and Inventing**

608 INV

9 hardback books, 16 paperback books, 8 dittos, 2 teacher's guides.

An integrated enrichment unit on inventions, inventors, interactions and systems.

### **Inventing in Today's World**

608 INV

1 VHS videocassette 22 minutes + 1 teacher's guide.

Looks at how the process of invention has changed throughout history and includes interviews with modern-day inventors.

### **A History of Invention**

608 HIS

1 VHS videocassette 26 minutes + 1 teacher's guide.

Presents the lives of famous inventors and the inventions made in communication, medicine, agriculture, and transportation.

### **American Inventors**

608 AME

1 VHS videocassette, 45 minutes

Explores how inventors changed the way we live: agriculture, communications, transportation, homes, industry and energy, military and health.

### **Be an Inventor**

608 BEA

1 VHS videocassette 20 minutes, 1 hardback book, 4 dittos, 1 teacher's guide

Book title: Smithsonian Visual Timeline of Inventions.

Program demonstrates steps students will go through to become an inventor. Discusses qualities of inventors.

### **Bill Nye Physical Science: Inventions/Computers**

600 BIL

1 VHS videocassette 52 minutes + 1 teacher's guide

Inventions - 26 min - looks at the inventing process.

Computers - 26 min - shows how computers work and various methods of storing information.

### **Gizmo!**

608 GIZ

1 VHS videocassette, 76 minutes

A tribute to unusual inventions and inventors. Includes original footage from early 1900's to the present. Use with CIMC kit KT 608 INVENTIONS AND INVENTING.

### **Scientists and Inventors**

608 SCI

13 hardback books

Examines the times, lives and inventions of Galileo, Pasteur, Curie, da Vinci, Franklin, and Whitney. Includes information on inventors and inventions from the past and present.

### **Inventors**

608 INV

1 VHS videocassette, 30 minutes + 1 teacher's guide

Discusses what stimulates the impulse to create - to turn ideas into new products and services. Host Bill Moyers speaks with inventors and follows the process of invention, from original thought to the drawing board and finally to production. Good follow through activities in guide.

### **Inventors and Inventions 1**

608 INV

1 VHS videocassette, 21 minutes + 1 teacher's guide

Segments: Animal Tracking - 6 minutes; Baby Stretcher - 3 minutes; Biodegradable Golf Tee - 4 minutes; Boomerang - 5 minutes; Velcro - 3 minutes.

### **Inventors and Inventions 2: Air and Space**

608 INV

1 VHS videocassette, 28 minutes +, 1 teacher's guide

Segments: Leonardo Da Vinci - 8 min; Galileo's Telescope - 3 min; The Wright Brothers - 8 min; Lowell's Observatory - 9 min.

### **Inventors and the Industrial Revolution**

608 INV

1 VHS videocassette, 14 minutes + 1 teacher's guide

Overview of the key inventions of Edison, Ford, Wright Brothers, Fulton, Morse, Whitney and Bell. Emphasis on Edison. Includes authentic photos, rare film footage, songs and narration by older people who remember these early inventions and their use. Examines the creative and practical process of invention.

### **Machine Story**

608 MAC

1 VHS videocassette, 3 minutes + 1 paperback book

Animated graphics illustrate the historical development of mechanical inventions. Includes timeline and projects book.

## **SOLAR OVENS**

### **Solar Energy: a Bright Future**

621.47 SOL

1 VHS videocassette, 14 minutes + teacher's guide. Grades 6-12, *Note: preview to see if appropriate for your class.*

Describes technologies that promise to make clean, renewable solar energy more viable as a large-scale power source.

### **All about the uses of energy**

333.79 ALL

1 VHS videocassette, 23 minutes. Grades K-5

Looks at the uses of energy, discussing how the availability of electricity transformed lives. Shows how electricity is created from the mechanical energy of wind and water, and from steam, nuclear, and solar energy.

### **Energy everywhere**

531 ENE



1 VHS videocassette, 16 minutes. Grades 4-8

A bolt of lightning, a rolling stone, boiling water, energy is all around us. Students learn about electrical, chemical, nuclear and mechanical energy, the principles of potential and kinetic energy, how the Law of Conservation of Energy works. They see why roads and bridges have expansion joints. The program explains conduction, convection and radiation, and discusses solar, nuclear and wind energy.

## VARIABLES

### **Three-Two-One Contact: How do You Know? Experiment!**

500 THR

1 VHS videocassette, 15 minutes, 1 ditto, 1 teacher's guide, grade 3-6.

Shows students why and how to set up a controlled experiment. Closed Captioned

### **Three-Two-One Contact: How Do You Know? Collect the Data**

500 THR

1 VHS videocassette, 15 minutes, 1 ditto, 1 teacher's guide, grade 3-6.

Students meet scientists collecting data deep in the woods and deep underwater.

### **Bill Nye: Motion**

531 BIL

DVD 26 minutes, includes Spanish track. DVD includes interactive glossaries and quizzes as well as NSS correlated chapters.

Motion illustrates the concept of force and inertia, and demonstrates Newton's Three Laws of Motion.

### **Bill Nye General Science: Measurement / Patterns**

510 BIL

1 VHS videocassette 52 minutes, including paperback book. 2 teacher's guides. Grades 4-9.

Measurements- 26 minutes- illustrates the importance of standard units of measure and shows the relationship between units of length, area, volume, and mass. Patterns- 26 minutes- introduces the concept of repetition in patterns, recognizes patterns in daily life and examines how patterns lead to an understanding of the world around us. Closed captioned. Walt Disney, 1997.

### **Bill Nye General Science: Probability and Time**

500 BIL

1 VHS videocassette 52 minutes (26 min. ea.), 2 teacher's guides, grade 4-9.

Probability - 26 min - shows how scientists use probability to predict future events or results. Time - 26 min - looks at devices and indicators used to measure time, Einstein's Theory of Relativity, and how time factors affect space exploration.

### **Scientific Method**

500 SCI

1 VHS videocassette, 20 minutes, 1 teacher's guide, grade 4-12.

Introduces students to the scientific method process. Follows the work of a chemist, biologist, and a geologist, and their use of the scientific method.