



Supplemental Fourth Grade Science Resources

Materials include DVDs, videos, models, etc.

ASTRONOMY

#1 The Earth and Its Moon

Bill Nye Earth Science: The Moon/Outer Space

523 BIL

1 VHS videocassette, 52 minutes

The Moon - 26 min - discusses gravity, tides, weight, orbit, rotation and revolution.

Outer Space - 26 min - discusses light year, the North Star, the Great Red Spot on Jupiter, and meteorites.

Bill Nye the science guy: The Moon

525.3 BIL

1 DVD, 26 minutes

Bill Nye explains the orbit and phases of the moon and their effects on Earth.

Bill Nye the science guy: Comets & Meteors

523.6 BIL

1 DVD, 26 minutes

Bill Nye explains how comets and meteors carry important information about the history of our universe and how the impact of these objects with the Earth may have created the oceans, caused the extinction of the dinosaurs, or even Brought life to our planet.

What is an Eclipse?

520 WHA

1 VHS videocassette, 11 minutes + 1 teachers guide

Introduction to solar and lunar eclipses; explores the effect eclipses have on people; uses time-lapse film to show an actual eclipse.

GeoKit: Astronomy

520 GEO

3 VHS videocassettes 67 minutes, 3 maps, 4 National Geographic magazines, 1 teachers guide, 1 teachers guide notebook with dittos and 4 transparencies.

Examines the history and science of astronomy. Includes NASA web sites for additional research.

#2 The Stars and Constellations

Bill Nye the science guy: Outer Space

520 BIL

1 DVD, 26 minutes

Explores the planets, stars, galaxies, and the universe from the Mount Wilson Observatory in California and illustrates how long it takes to travel across the galaxy.

Celestial Sphere / Starlight Theatre

523.1 CEL

1 VHS videocassette, 49 minutes

A narrated tour of the night sky introducing the basic concepts of annual and diurnal motions of the sky; constellations and asterisms; north star and brighter stars; Milky Way galaxy; comets, meteor showers and fireballs; aurorae and solar eclipses. Points out nebulae, star clusters and galaxies that are visible with binoculars from the suburbs or with the unaided eye from a dark rural observing site.

Astronomy, Mythology and the Universe

523.1 AST

1 video, 11 minutes + teacher's guide.
Presents some ancient mythological beliefs about the universe.

Astronomy 101

520 AST

1 VHS videocassette, 25 minutes.
Examines constellations and star charts. Shows how to explore the night sky using binoculars and telescopes.

Mapping the Universe

520 MAP

10 Odyssey magazines (April 1997 issue).
Collection of information, interviews, history, and photos of our galaxy.

Voyage to the Stars

523 VOY

10 Odyssey magazines (May 1997 issue)
Collection of factual information, research, and authentic photos of stars, planets, and space travel. Includes Internet links.

#3 Planets in Our Solar System

Bill Nye the science guy: The Planets

523.4 BIL

1 DVD, 26 minutes
Explores the features and orbits of the planets along with the distances between them.

Astronomy Facts and Fun

520 AST

1 VHS videocassette, 23 minutes + 1 teachers guide
Interviews, graphics, and simple experiments present interesting facts about the stars and planets.

Bill Nye the science guy: The Sun

523.7 BIL

1 DVD, 26 minutes
Discusses solar flares, eclipses, sunspots, fusion, and solar energy and visits an enormous solar power farm in California

Bill Nye Earth Science: The Sun/The Planets

523 BIL

1 VHS videocassette, 52 minutes + 2 teacher guides
The Sun - 26 min - discusses the comparative sizes of the Sun and Earth, solar flares, and solar eclipses.
The Planets - 26 min - discusses time and path of orbits, and Mars, the "rusty planet."

Magic School Bus Gets Lost in Space

523 MAG

1 VHS videocassette, 30 minutes
The class explores the solar system and gets lost in the process.

Our Solar System

523 OUR

1 VHS videocassette 9 minutes, 1 teacher's guide, dittos.
Explores space program, travel, exploration in space, planets, etc.

Solar System 2: Above And Beyond

523 SOL

1 VHS videocassette, 15 minutes + 1 teachers guide.
An overview of our solar system and its components.

Space Exploration: Our Solar System

523 SPA

1 VHS videocassette 31 minutes, 6 dittos, 1 teachers guide.
Traces the development of our solar system, sun, and planets. Includes NASA footage.

Spacewatch

523 SPA

6 VHS videocassettes, 66 minutes, Titles include:
Foundation of the Solar System: Venus and Mercury - 10 minutes;
Solar Eclipse: Sun, Earth and Mars - 6 minutes;
Dinosaurs and Asteroids: Jupiter and Other Planets - 14 minutes;
A Beginner's Guide to the Constellations - 12 minutes;
Summer Stars and the Milky Way - 13 minutes;
Journey into Space: From Sputnik to the Space Shuttle - 11 minutes.

Starbase Earth

523 STA

1 VHS videocassette 24 minutes
Uses views from space probes and telescopes, along with computer simulations, to tour our solar system.

Space Contracts

629 SPA

33 student guides, 1 teachers guide.
A space projects activity program based on Howard Gardner's theory of multiple intelligences.

Scale

511 SCA

1 videocassette, 9 minutes. Series Title (Math concepts for students)
Provides an introduction to scales models and the different ways they can be used to illustrate concepts relating to large spaces and objects, like the size of planets and their location in relation to the sun and each other in the solar system.

Bill Nye the science guy: Space exploration

629.4 BIL

1 DVD, 26 minutes
Answers questions about space exploration, discusses instruments used to look at the night sky, space exploration vehicles, whether people can breathe in space, and other topics.

LEVERS AND PULLEYS

Pulleys

621.8 PUL

1 DVD, 13 minutes.

The inhabitants of Mammoth Island need to lift their mammoths so Olive decides to use a simple machine called a pulley to get the job done. Discussion questions and activities -- Downloadable teacher's guide. Series: The Way Things Work.

Levers

621.8 LEV

1 DVD, 13 minutes.

The inhabitants of Mammoth Island need to weigh their mammoth and discover the three classes of levers in the process. Discussion questions and activities -- Downloadable teacher's guide. Series: The Way Things Work.

Bill Nye the Science Guy: Simple Machines

621.8 BIL

1 DVD, 26 minutes.

Demonstrates the principles behind a variety of simple machines such as ramps, levers, pulleys and wheels, and shows how simple machines doing complicated things can be found everywhere.

Bill Nye Physical Science: Friction/Simple Machines (Revised)

531 BIL

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

Friction - 26 min - discusses force, energy, and atomic particles.

Simple Machines - 26 min - discusses wheel and axle, pulley, inclined plane, screw, wedge, and lever.

Bill Nye Friction

531 BIL

DVD- 26 minutes, includes **Spanish** track

Discusses force, energy, and atomic particles.

Energy

531 ENE

1 VHS videocassette 20 minutes + 1 teacher's guide

In this video students learn about the five main forces of energy.

Mechanical Energy

531 MEC

1 VHS videocassette 23 minutes + 1 teacher's guide

Learn what energy is, how it behaves, and why it is important in our daily lives.

Mr. Wizard's World: Simple Machines

531 MRW

1 VHS videocassette 25 minutes, 2 dittos, 1 teacher's guide.

Activity segments: Household Levers; Mobile Challenge; Spoon Flip; How Many Wheels on a Bicycle?; Pulleys Help You Lift; Gears on a Bicycle. Activities progress from simple to complex scientific principles.

Simple Machines

531 SIM

1 VHS videocassette 20 minutes, 1 teacher's guide

Introduces students to simple machines: the lever, inclined plane, wedge, screw, pulley, wheel and axle. Animation and live action illustrate the principles and their usefulness. Includes scenes from Corvallis, Philomath, and other parts of Oregon.

Simple machines

621.8 SIM

1 VHS videocassette, 25 minutes + 1 teacher's guide

Describes how the principles behind a variety of simple machines such as ramps, levers, pulleys, and the wheel and axle assist humans in making their work easier.

Three-Two-One Contact: Friction - Getting a Grip

531 THR

1 VHS videocassette (15 minutes), 1 ditto, 1 teacher's guide
Examines the process and purpose of friction in movement.

MACHINES ENGINEERING

Bill Nye the Science Guy: Simple Machines

621.8 BIL

1 DVD, 26 minutes.

Demonstrates the principles behind a variety of simple machines such as ramps, levers, pulleys and wheels, and shows how simple machines doing complicated things can be found everywhere.

Simple Machines

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1 VHS videocassette 20 minutes, 1 teacher's guide

Introduces students to simple machines: the lever, inclined plane, wedge, screw, pulley, wheel and axle. Animation and live action illustrate the principles and their usefulness. Includes scenes from Corvallis, Philomath, and other parts of Oregon

Simple Machines

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Describes how the principles behind a variety of simple machines such as ramps, levers, pulleys, and the wheel and axle assist humans in making their work easier.

Mechanical Energy

531 MEC

1 VHS videocassette, 23 minutes + teacher's guide

Through after school exploits of an aspiring young scientist, learn what energy is, how it behaves, and why it's important to our daily lives. Understand mechanical energy as one of the important sources of power in nature as well as man's machines. Includes demonstration and experiment.

MAGNETISM AND ELECTRICITY

#1 The Force

Bill Nye Physical Science: Magnetism/Static Electricity

537 BIL

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

Magnetism - 26 min - discusses north and south poles, compasses, magnetic metals, and electrons.

Static Electricity - 26 min - discusses electrons, grounding, and lightning.

Bill Nye Physical Science: Magnetism

538 BIL

1 DVD, 26 minutes.

Defines magnetism, explores the Earth's magnetic properties, demonstrates how to make a compass and illustrates why opposites attract.

Bill Nye Physical Science: Static Electricity

537 BIL

1 DVD, 26 minutes.

Looks at why socks stick together when taken from the dryer by exploring static electricity.

Science Essentials: Electricity and Magnetism

537 SCI

4 VHS videocassettes 32 minutes, 8 dittos, 4 teacher's guides.

Titles: What is Electricity? - 8 minutes; How Does Electricity Travel? - 8 minutes; What is Magnetism? - 8 minutes; What is Electromagnetism? - 8 minutes.

Magic of Magnetism

538 MAG

1 VHS videocassette 15 minutes + teacher's guide

A magician helps children understand the basic concepts of magnetism.

Primary Science: Magnets

538 PRI

1 cassette book, 1 paperback book, 1 teacher's guide, 4 small magnets

Explores the basic properties of magnets.

Earth is a Giant Magnet

538.7 Ear

DVD 15 minutes + teachers guide

Uses live classroom experiments to illustrate the basic principles of magnetism.

#2 Making a Connection

Elementary Electricity

537 ELE

1 VHS videocassette 23 minutes, 1 teacher's guide.

Introduces basic concepts in electricity: current, conductivity, circuits, and magnetism. Discusses modern electric power systems. Historical overview.

#3 Advanced Connections

Electrical Circuits: You Can Do It!

537 ELE

1 VHS videocassette 12 minutes, 1 teacher's guide.

Examines static and current electricity; sources of electrical power. Includes experiments.

Introduction to Circuits

621.3 INT

1 VHS videocassette 21 minutes.

Meet special agents Muldoon and Kelly, skilled probers of the unknown, as they try to solve the mystery of a series of blackouts. Their investigation reveals that circuits are energy transfer mechanisms and have a myriad of wonderful and astonishing applications.

#4 Current Attractions

Electromagnetic Energy

539.2 ELE

1 videocassette, 23 minutes + guide. Series Title

Through after school exploits of an aspiring young scientist, learn what energy is, how it behaves, and why it's important to our daily lives. Learn how electromagnetic energy behaves and how it's used to power many different objects.

Mr. Wizard's World: Current Electricity

537 MRW

1 VHS videocassette 21 minutes, 2 dittos, 1 teachers guide,

Activity segments: Electrocutted Hot Dog; Making an Electromagnet; Making a Motor; Fuses; Supercooled Conductors. Activities progress from simple to complex scientific principles.

#5 Click It

Thomas Edison 1847-1931

608 THO

28 paperback Cobblestone Magazines February 1980 issue, 3 dittos.

Collection of factual information, photos, and maps on the life, times and inventions of Thomas Alva Edison. Includes a play based on incidents that really happened in Edison's life; biographical information; how to make a telegraph sender and receiver; and a bibliography.

Extention Topics

Bill Nye Physical Science: Electrical Current/ Light and Optics

535 BIL

1 VHS videocassette 52 minutes, 2 teachers guides.

Electrical Current - 26 min - discusses electron particles, circuits, voltage, amps, and watts. Light and Optics - 26 min - discusses reflection, refraction, and concave and convex lenses.

Note: Only Electrical Current section recommended.

3-2-1 Contact: Generating Electricity - More Power to You

537 THR

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

Explores how electricity is generated.

PHOTOVOLTAIC CELLS

Kill a Watt Energy Efficiency Kit

537 KIL

1 tub of materials. Kit includes eight meters, CD with lessons, energy use quizzes, and operating manual.

Use Kill a Watt meters to monitor electricity use around your classroom and school.

STRUCTURES OF LIFE

Seed Fruits

582 SEE

1 seed fruits model

Displays twelve different types of fruit. Labeled. Titles: Sunflower; Maple; Pecan; Wheat; Apple; Pea; Cherry; Lily; Mulberry; Huckleberry; Blackberry.

What do Seeds do?

582 WHA

1 VHS videocassette, 11 minute

Shows how a seed grows into a plant capable of supplying its own food and producing its own seed. Gives examples of corn, bean, maple tree, foxtail, and milkweed seeds.

Bean Germination Biosmount

630 BEA

1 bean model, Model shows three stages of lima and broad bean plant germination.

Corn Germination Biosmount

630 COR

1 corn model, Model shows seven stages of corn germination.

Dicot Seed

582 DIC

1 dicot seed model. Exhibits a large buckeye dicot seed that has been germinated and opened to show structures.

Leaf and Root Systems Models

581 LEA

4 models, Titles: Root System; Leaf Morphology; Leaves; Leaf Skeleton.

Plant Structure and Growth

581 PLA

1 VHS videocassette 23 minutes + teacher's guide

Introduction to structure of plants that allows them to process food, water and minerals.

3-2-1 Contact: Innate and Learned Behavior - How Do They Know That?

591 THR

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

Examines innate and learned behavior in animals and humans.

Crayfish Development

592 CRA

3 crayfish models, 1 teacher's guide

Models exhibit a small crayfish specimen, the stages of development, and crayfish appendages, including the eye.

Crayfish Model

592 CRA

1 crayfish model, 1 teacher's guide notebook

Illustrates crayfish internal organs, including "teeth" in stomach, and the musculature of the tail.

Crayfish Specimen

592 CRA

1 crayfish model, 4 dittos, Displays one full crayfish body and one side-view dissection.

Beetles and How They Live

599.76 BEE

1 VHS videocassette 15 minutes

Follow along on a beetle-catching expedition as specimens for a home- observation tank are collected. Shows whirligig beetles, diving beetles, ladybugs, and others.

Bug City: Beetles

595 BUG

1 VHS videocassette 23 minutes, 1 teacher's guide

Examines the role of beetles in nature as recycling agents. Shows how to make a beetle habitat for observation.

Bill Nye the science guy: Fossils

560 BIL

1 DVD, 26 minutes

Bill Nye explains the relationship between dinosaurs and birds, tracks down dinosaur footprints with a paleontologist, and visits the La Brea Tar Pits.