

First Grade Science



Course Overview

Students learn to perform experiments and record observations, and understand how scientists see the natural world. They germinate seeds to observe plant growth, and make a weathervane. Students will explore topics such as:

- **Matter**—states of matter; mixtures and solutions
- **Weather**—cloud formation; the water cycle
- **Animal Classification and Adaptation**—insects; amphibians and reptiles; birds; mammals
- **Habitats**—forests, deserts, rain forests, grasslands,

and more; naturalist John Muir and conservation

- **Oceans**—waves and currents; coasts; coral reefs and kelp forests; oceanographer Jacques Cousteau
- **Plants**—germination, functions of roots, stems, flowers, chlorophyll, and more
- **Human Body**—major systems; Elizabeth Blackwell, the first woman doctor
- **Light**—how light travels; reflections; inventor Thomas Edison

Course Outline

Acting Like a Scientist

- Learn how to use tools and equipment to measure distance in centimeters, mass in grams, volume in milliliters, and temperature in degrees Celsius
- Follow steps in the scientific process
- Compile data in tables, draw graphs, and interpret results

Matterland

- Identify matter as a solid, liquid, or gas
- Explain the properties of each type of matter
- Learn about the relative motion of molecules in each state
- Demonstrate that matter can change states by heating or cooling
- Become familiar with mixtures, solutions, and surface tension

Everyday Weather

- Understand what causes the seasons
- Construct a rain gauge and weather vane to measure weather conditions
- Use equipment to record observations on a weather calendar
- Learn about cloud formation, cloud type, precipitation, condensation, evaporation, and the water cycle

Animal Classification

- Classify major animal groups according to their identifying characteristics
- Study mammals, birds, reptiles, amphibians, insects, and fish

Adaptations

- Discover how animals use their characteristics to thrive in their environment
- Learn how to infer what animals eat from the shapes of their teeth
- Study animal defense and behavior

Habitats

- Learn to recognize plants and animals common to a variety of habitats
- Study food chains
- Learn about endangered plants and animals
- Read about John Muir's tireless work to preserve the wilderness

Oceans and Undersea Life

- Discover the diversity and dangers of the oceans
- Explore tide pools and the depths
- Find out how waves and currents move
- Read about the life and major accomplishments of Jacques Cousteau

Light Up Your Life

- Explore how light behaves
- Investigate how light reflects off different surfaces
- Demonstrate how light travels in straight lines
- Classify objects according to how much light the objects transmit
- Learn about Thomas Edison's life and his major achievements

The Human Body

- Become familiar with the major systems of the human body
- Learn about Elizabeth Blackwell's determination to become the first woman to earn a medical degree

Our Green World

- Study the functions of roots, stems, leaves, flowers, fruits, and seeds
- Examine fibrous and tap roots
- Observe stems transporting water from roots to leaves
- Dissect and germinate seeds
- Match fruits to seeds
- Learn that flowers turn into fruit



- Learn that chlorophyll is the substance that allows plants to manufacture food

Lesson Time and Scheduling

Total lessons: 72. If you teach Science twice a week, you can comfortably complete the program within a typical school year.

Lesson Time: 60 minutes. You might choose to split the lessons into smaller segments and take a break between investigations. The K¹² online lesson tracking system allows you to pick up wherever you left off in any given lesson.

Standard Curriculum Items

Green bean seeds
Grass seeds
Directional compass
Graduated cylinder
Thermometer
Plastic pipette
Safety goggles
Magnifier
Bar magnet
Mirrors
Feathers
Plastic 1 cm cubes
Bucket balance
Iron fillings

Additional Curriculum Items

Some lessons require additional resources, including common household items, and books that are readily available online or in your local library:

Styrofoam balls
Silver Mylar non-tear film
Inflatable globe

An Octopus Is Amazing by Patricia Lauber
Down Comes the Rain by Franklyn Branley
Flash, Crash, Rumble, and Roll by Franklyn Branley
What Color Is Camouflage? by Carolyn Otto
What Is the World Made Of? All About Solids, Liquids, and Gases by Kathleen Weidner Zoehfeld

NOTE: List subject to change.