Science

Kindergarten

Kindergarten Science involves an introduction to many concepts. The teaching method should center around exploration and observation to begin to create connections to previously learned material.

Explore and Observe Life Science
• Observe and inquire about living and nonliving things
• Seeds
• Simple life cycles
• Familiar plants and animals and how they grow
• Five senses
• Farm animals and pets

Explore and Observe Earth Science
• Characteristics of soil and rocks
• Weather
• Water
• Seasons
• Seashore
• Space

Explore and Observe Physical Science
• Physical characteristics (hot/cold, light/heavy, etc.)
• Beginning experiments
• Light and shadows
• Air
• Sun and moon
• Temperature
• Colors
• Magnets
Science

Kindergarten

On SchoolhouseTeachers.com

Exploring God's World with Kindergarten Science: eighteen weekly lessons explore various life science topics including types of animals such as insects, mammals, and birds, as well as earth science topics including rocks and materials.

Having Fun with Kindergarten Science: twenty-two weekly lessons explore life science, earth science, and physical science topics including seeds, simple life cycles, the weather, seasons, water, the seashore, space, physical characteristics, beginning experiments, light and shadows, air, sun and moon, temperature, colors, and magnets.

Our World Book Early World of Learning library has more than one hundred short videos about plants, animals, weather, and the planet.
Science

1st Grade

Life Science
- Plants
  - Key vocabulary: seeds, bulbs, flower, pistil, stamen, stem, roots
- Animals
  - Types of animals: zoo, circus, farm, pets, woodland, birds
  - Habitats
  - Classification of animals
- Five Senses
- Anatomy
  - Introduction of body systems and their roles

Earth Science
- Volcanoes
- Weather
- Seasons

Physical Science
- States of Matter
  - Key vocabulary: solid, liquid, gas, mixture, sink, float
- Types of Energy
  - Key vocabulary: heat, light, transparent, opaque, reflect, sound, vibrate
- Astronomy
  - Key vocabulary: sun, moon, planets, day, night, revolve, year
- Static Electricity
- Magnetic vs. Non-Magnetic
- Temperature
Science

1st Grade

On SchoolhouseTeachers.com

Life Science

**Nature/Outdoors**: four-week study of traveling seeds; four-week study of wildflowers; four-week study of trees; four-week study of evergreens

**Lapbooking**: two-week unit Birds of the Air for elementary

**God's Beautiful Creatures**: 10 eBooks with printable and hands-on activities

**Wildlife Adventures**: one-week study of the Magnificent Frigate; one-week study of the Bald eagle; one-week study of the pelican; one-week study of birds

**What Living Things Need**: eBook in the Unit Studies and More section

Our World Book [Early World of Learning library](#) has short videos about our senses and how our bodies work. The Know It section of our World Book [Early World of Learning library](#) has interactive learning tools about a wide number of animals, animal homes, plants, and our bodies.

Earth Science

**Weather**: eBook in the Unit Studies and More section

The Know It section of our World Book [Early World of Learning library](#) has interactive learning tools about weather and seasons.

Life, Earth, and Physical Science

**Exploring God's World with First Grade Science**: thirty-six weekly lessons that cover many of the traditional life science and earth science topics listed above.

**Fun with Science**: eighteen weekly lessons that explore body systems and their roles, volcanoes, and the physical science topics listed.
Science: 2nd Grade

Life Science
- Animals
  - Key vocabulary: useful, harmful, food chain, migration, hibernation, dormancy, camouflage, metamorphosis, life cycle
- Plants
  - Key vocabulary: pollination, ecosystem, environment
  - Common trees and flowers
- Anatomy
  - Key vocabulary: cells, tissues, organs, systems

Earth Science
- Earth
  - Key vocabulary: layers, natural resources, origin, fossils, dinosaurs, air, atmosphere
- Weather and Seasons
  - Impact on people, animals, plants
- Water Cycle
- Wind, Water and Erosion

Physical Science
- Astronomy
  - Key vocabulary: solar system, constellations, space exploration
- Matter
  - Changes in states of matter
- Force
  - Key vocabulary: direction, speed, friction, gravity, push, pull
  - Simple machines: lever, wedge, inclined plane, wheel, screw
- Light and Energy
- Scientific Method and Inquiry
  - Explore the role of a scientist
Science

2nd Grade

On SchoolhouseTeachers.com

Life Science

**Lapbooking:** four-week study on Gray Squirrel, Red Squirrel for elementary

**Wildlife Adventures:** one-week study on mammals

**Nature/Outdoors:** four-week study of migration; four-week study of squirrels; four-week study of bears; four-week study of snakes; four-week study of ants; four-week study of wild birds; four-week study of wolves and coyotes; four-week study of owls; four-week study of mosquitoes; four-week study of birds

**Creation, Nature, and You:** eleven videos on seeds, trees, and plants

**Sensational Sunflowers:** single unit in the Unit Studies and More section that explores sunflowers and includes a science experiment

**My Body:** eBook in the Unit Studies and More section talks about senses and anatomy

**Nature’s Places:** eBook in the Unit Studies and More section

**Science All Around Us:** food chain, migration, hibernation, pollination, ecosystems, metamorphosis, camouflage, dormancy, and the impact of weather and season on people and animals units

**Learning Ladders—Terrific Trees:** stand-alone eBook in our Unit Studies and More section

Our **World Book Kids library** includes lesson plans about helpful and harmful insects, animal homes, and more under Creature Feature. It also includes **science projects** about animals, plants, and the human body.

In our **World Book Science Power** library, you will find lessons on animal behavior including hibernation and migration, as well the structure of living things including cells and systems.

Earth Science

**Science All Around Us:** atmosphere unit

**Dinosaurs and the Bible:** sixteen-week study

*This class is designed for elementary students, but depending on the interest level of your 2nd grader, you may want to hold this class until 4th grade. Second graders may enjoy the lectures but may need assistance with some of the worksheets.

**Watersheds and the Water Cycle:** single unit in the Unit Studies and More section

In our **World Book Science Power** library, you will find lessons on the water cycle.
Physical Science
Our World Book Kids library has a number of science projects about matter, energy, and machines as well as a webquest about space exploration.

Life, Earth, and Physical Science (cont.)
In our World Book Science Power library, you will find lessons on matter, force, light, energy, and simple machines. Science of Our Planet: six weekly lessons exploring natural resources, the atmosphere, the weather's impact on living things, and erosion.

Let's Be Scientists: single unit in the Unit Studies and More section that discusses weather, astronomy, recycling, states of matter, body systems, and the five senses with several supporting experiments

Light, energy, and the scientific method will be studied in 3rd and 5th grades.
Science

3rd Grade

Life Science
- Animals
  - Key vocabulary: endangered, vertebrates, cold blooded, warm blooded, invertebrates, inherited traits, survival skills
  - Classify and characterize: fish, amphibians, reptiles, birds, mammals
  - Explore helping animals, sea animals, desert animals
- Plants
  - Key vocabulary: inherited traits, photosynthesis
  - Explore plants of the desert, forest and sea
- Anatomy
  - Key vocabulary of the Digestive System: salivary glands, esophagus, stomach, liver, small and large intestine
  - Key vocabulary of the Excretory System: kidneys, bladder, urethra, anus

Earth Science
- Rocks and Minerals
  - Characterize the differences between rocks and minerals
  - Classify rocks into sedimentary, igneous, and metamorphic
- Weather and Climate
  - Weather patterns and predictions
  - Characteristics of various climates

Physical Science
- Heat
  - Key vocabulary: energy, convection, conduction, radiation
  - Sources of Heat: geothermal, nuclear, solar
- Light
  - Key vocabulary: colors, mirrors, lenses, convex, concave, plane, prism, spectrum, reflection, refraction
  - Identify how light travels
- Sound
  - Key vocabulary: pitch, vibration, volume
  - Identify how sound travels

Continued on next page
Science

3rd Grade

Physical Science
- Gravity and Its Effects
- Electricity and Magnets
- Physical Properties of Matter
  - Key vocabulary: size, shape, weight, volume, flexibility, luster, color, texture, hardness, odor, etc.
- Force and Its Effects
- Energy Forms and Sources
  - Key vocabulary: heat, sound, chemical, mechanical, electrical

On SchoolhouseTeachers.com

Life Science
- Lapbooking: four-week study of the Rhinoceros; four-week study of the Giant Panda; four-week study of the Florida Manatee
- Ditch the Desk: single unit on Birds
- Wildlife Adventures: one-week study on dolphins; one-week study on manatees; one-week study on sea lions; one-week study on sea turtles; one-week study on jellyfish; one-week study on sand dollars; one-week study on seashells; one-week study on the American alligator; one-week study on frogs
- Curious Science: one-month study on the blue-footed booby; one-month study on the platypus; one-month study on the cave fish; one-month study on the pufferfish; one-month study on the slime eel
- Creation Club Science: one-month study on hummingbirds in the Unit Studies and More section
- The Real Hummers: single unit about hummingbirds and their design in the Unit Studies and More section
- Introduction to Human Body Systems: single unit in the Unit Studies and More section
- Animals in Disguise: eBook in the Unit Studies and More section
- All About Animals: fourteen self-paced units
- A World of Animals: forty-three self-paced units

Our World Book Kids library also has a special feature called World of Animals that allows students to compare two animals as well as read short summaries about an animal (such as you’d find at a zoo exhibit) or read a kids encyclopedia article about the animal.

Our World Book Kids library includes a lesson plan and game about vertebrate and invertebrate animals under Treasure Hunt. It also includes webquests about animals including cats, reptiles, and whales.

Continued on next page
Science

3rd Grade
On SchoolhouseTeachers.com (cont.)

Life Science (cont.)
In our World Book Science Power library, you will find lessons on the classification of living things as well as inherited and learned characteristics.

Earth Science
Wondrous Weather: four weekly lessons
Ditch the Desk: four-week unit on Weird Weather and Natural Disasters
Curious Science: one-month study of blue diamonds; one-month study of quicksand
Fun with Gravity and Climate: includes 7 weekly lessons on climate
In our World Book Science Power library, you will find lessons on various types of biomes as well as lessons on weather and weather patterns.

Physical Science
Understanding Light: single unit with experiment in the Unit Studies and More section
Introduction to Physical Science: ten units covering electricity, force and motion, heat, light, magnetism, matter, and sound
Fun with Gravity and Climate: includes 6 weekly lessons on gravity
In our World Book Science Power library, you will find lessons on heat, light, and sound.

Rocks and minerals will be studied in depth in geology in 7th-12th grade, though you may wish to introduce the topic now.
Science

4th Grade

Life Science
• Anatomy
  • Circulatory System: structure and function of the heart, components of blood, types of blood vessels (arteries, veins, capillaries), how blood clots, blood transfusions
  • Respiratory System: process of respiration, structure and function of the lungs, relationship between smoking and lung cancer
• Plants
  • Key vocabulary: basic plant structure, seeds, germination
• Animals
  • Key vocabulary: insects, spiders, reptiles
• God’s Provision for Life on Earth

Earth Science
• Weather and Seasons
  • Key vocabulary: cloud formations, barometric pressure, layers of the atmosphere, air pressure, cold and warm fronts, various weather instruments, forecasting
  • Identify causes of weather, seasons, thunder, lightning
• Geology
  • Key vocabulary: core, mantle, crust, plate tectonics, earthquakes, volcanoes, continental drift, mountain formation, rock cycle, soil formation
• Effects of Pollution
• Ocean and the Hydrosphere

Physical Science
• Astronomy
  • God’s design of the Heavens
• Electricity and Magnetism
  • Key vocabulary: current electricity, static electricity, electromagnets, conductors, insulators, series circuit, parallel circuit, electrons, electrical currents, magnetic fields
  • Understand conversion of electrical energy.
  • Identify uses of electricity in daily life and safety precautions and hazards
Continued on next page
Science

4th Grade

Physical Science
- Chemistry
  - Key vocabulary: atom, physical and chemical properties, mass, density, elements, compounds, solutions, diluted, concentrated, saturated, protons, neutrons, electrons, mass, matter, weight, solvents, solutes, density, evaporation, melting, condensation, freezing
- Law of Conservation of Energy
- Properties of Water

On SchoolhouseTeachers.com

Life Science
- Lapbooking: four-week study Let's Look at Tarantulas for upper elementary-middle school; four-week study of the Bengal Tiger for upper-elementary-middle school
- Ditch the Desk: two-week study of Backyard Critters; two-week study of Space
- Wildlife Adventures: one-week study of butterflies
- Bug Science: fourteen-week study of worms and parasites
- Wonderful World of Bugs: four-week study
- Curious Science: one-month study of dung beetles; one-month study of vegetarian spiders; one-month study of zombie fire ants; one-month study of velvet ants; one-month study of the cicada-killing wasp
- Discovering Disgusting Creatures: eight units on various types of animals
- Mammals: eBook in the Unit Studies and More section
- Learning About Animals: eBook in the Unit Studies and More section

In our World Book Science Power library, you will find lessons on the circulator, respiratory, digestive, urinary, endocrine, skeletal, muscular, and nervous systems. You’ll also find a study of life cycles in plants and animals including metamorphosis, seed plants, seedless plants, flowering plants, and germination.

Earth Science
- Geology Unit Two: The Geology of Our Natural Parks: sixteen weekly lessons
- Curious Science: one-month study of snow rollers

Our World Book Kids library includes a fun lesson plan all about lightning under Crack the Code and about water purification under Craft Room. It also includes science projects about soil and crystal formation. The World Book Student library includes webquests about the sun and hurricanes.

Continued on next page
Earth Science (cont.)

Experiencing Weather: five stand-alone unit studies that explore various weather phenomena

Physical Science

Everyday Astronomy: 180-day study divided into short lessons that can be combined to cover less time or done in a small dose each day

Creation Club Science: one-month study of the moon; one-month study of the earth in the Unit Studies and More section

Introduction to Mixtures and Solutions: single unit in the Unit Studies and More section

The Shocking Truth About Electricity: single unit in the Unit Studies and More section that introduces conductors and circuits with experiments

Our World Book Kids library includes a fun lesson plan about using the sun to tell time and about constellations under Craft Room.

In our World Book Science Power library, you will find lessons on various types of the cycles of change (sun, moon, and seasons), acids and bases, and mixtures and solutions. You’ll also find several lessons on electricity, circuits, and magnetism.

Exploring God’s World with Fourth Grade Science: thirty-six weekly lessons covering many of the topics listed
Science

5th Grade

Life Science
• Plants and Animals
  • Key vocabulary: ecosystems, food chains, food webs, five kingdoms and subdivisions, bacteria, mold, fungi
• Oceanography
  • Key vocabulary: continental shelf, slope, rise, abyssal plain, mid-ocean ridge, trench, currents, waves, high and low tides, saltwater, freshwater, water pollution, oceanic life zones, Gulf Stream
• Botany
  • Key vocabulary: vascular and nonvascular plants, reproduction in plants, photosynthesis, anatomy of flowers and fruit, seed and fruit production, spore bearing plants, flowering and nonflowering plants, parts of plants, methods of pollination
• Biology and Anatomy
  • Key vocabulary: cell theory, cells of plants, cells of animals, cells of bacteria, cellular organelles, tissues, organs, systems
  • Understand the function and processes of the respiratory system
  • Understand the function and processes of the circulatory system

Earth Science
• Geology
  • Key vocabulary: geosphere, hydrosphere, atmosphere, biosphere, rocks, minerals, crystals
  • Characterize the six crystal systems, classification of rocks, sources of various types of rocks

Physical Science
• Astronomy
  • Key vocabulary: orbit, rotation, gravitational forces
  • Identify patterns and movements in the Solar System
• Chemistry
  • Key vocabulary: atoms, subatomic particles, electron shells, molecules and compounds, protons, neutrons, electrons, periodic table, atomic number, atomic symbol, metals, alloys, chemical, Teflon, Kevlar
  • Understand the Law of Conservation of Matter
  • Understand chemical and physical properties of matter
  • Recognize chemical processes in everyday life

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Science

5th Grade

Physical Science
• Forces and Motion
  • Key vocabulary: potential energy, kinetic energy, distance, rate, acceleration, gravity, velocity, inertia, acceleration
  • Understand Newton’s Law of Motion

On SchoolhouseTeachers.com

Life Science
Daily Discoveries: four-week unit on pond life; four-week unit on the seashore; four-week unit on forest life; four-week unit on the desert
Nature/Outdoors: four-week study of ponds; four-week study of fungi; four-week study of lichens and mosses
Curious Science: one-month study of red tides; one-month study of rogue waves; one-month study of whirlpools
Introduction to Life Science: nine self-paced units covering cells to organ systems, circulatory system, digestive and urinary systems, nervous system, respiratory system, skeletal and muscular systems, plant structure and classification, cell cycle, and traits and heredity.

Students may enjoy a plant cell craft unit in Hands-On Learning Activities Through Crafts.

Our World Book Kids library includes science projects about microscopic life. The World Book Student library includes a webquest about plant and animal cells. In our World Book Science Power library, you will find lessons on plants and animal cells as well as a number of lessons on ecology and ecosystems.

Physical Science
Introduction to Physics: eighteen weekly lessons
Scientific Method: six weekly lessons
Curious Science: one-month study of “solar max”
Learning About the Sun, Moon, Planets, and Stars: eBook in the Unit Studies and More section

In our World Book Science Power library, you will find lessons on elements and properties of matter as well as forces, energy, and motion.

Exploring God’s World with Fifth Grade Science: thirty-two weeks covering plants and animals (life science), metals vs. non-metals (earth science), and matter and elements (physical science), and more.

The botany topics listed are discussed in depth in Botany (suggested for 7th grade, but can be done earlier if your student is ready).
Science

6th Grade

Explore famous scientists, inventions and discoveries as the following areas are studied.

Life Science
- Plants and Animals
  - Key vocabulary: algae, fungi, microbes, coexistence, cooperation, competition, symbiosis
- Anatomy
  - Key vocabulary: antigens, antibodies, bacteria, viruses, heredity
  - Understand the function and processes of the Nervous System
  - Understand the function and processes of the Immune System
  - Understand the function and processes of the Lymphatic System
  - Familiarization with major diseases

Earth Science
- Geology
  - Key vocabulary: Plate tectonics, Richter Scale, earthquakes, geologic “hot spots”, volcanoes, island chains

Physical Science
- Energy
  - Key vocabulary: solar energy, geothermal energy, heat and atomic/molecular activity, conduction, convection, radiation, simple and complex machines, mechanical energy, friction, density, nuclear energy, radioactivity, reflection, refraction, absorption
  - Understand the relationship between temperature and energy
  - Understand the process of transferring energy by using the following vocabulary: light energy (sunlight), chemical energy (photosynthesis), stored energy (stored sugars), terrestrial and aquatic food webs
  - Understand transformation of light energy into other energy: heat, chemical, electrical, mechanical
- Astronomy
  - Key vocabulary: novas, supernovas, galaxies, pulsars, quasars, astronomical distances
  - Understand Newton’s Universal Law of Gravitation
  - Understand kinds and classification of stars

Continued on next page
Science

6th Grade

Physical Science
- Chemistry
  - Key vocabulary: energy transfer, states of matter, atomic activities, molecular activities, expansion, contraction, equilibrium, distillation, boiling and freezing points

On SchoolhouseTeachers.com

Exploring God's World with Sixth Grade Science: 36 weekly lessons explore life science, earth science, and physical science topics
Scientists A-Z: twenty-six weekly lessons, each on a different famous scientist

Life Science
Curious Science: one four-week study on MRSA
The nervous system is covered in Introduction to Life Science, which is included with the 5th-grade resources.
In our World Book Science Power library, you will find lessons on adaptation, survival, competition, symbiosis, environment, and behavior.

Physical Science
Tinkers Club: 9 monthly units
Chemistry: All Things Matter: 12 weekly lessons

Our World Book Student library includes a biography center where students can study astronauts and aviators, leaders in medicine, and more. It also has a webquest about women in science. In the Science Power library, there are articles about a number of famous scientists.

You may also enjoy Marine Biology, a thirty-week course for 6th-10th grade.
Science

7th-12th Grade

There are several ways to approach high school science. Below is a table showing two different tracks a student may follow through upper-level science classes.

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On SchoolhouseTeachers.com

Life Science
- **Botany**: sixteen weekly lessons
- **Animal Science**: twenty-seven weekly lessons
- **Life Science**: thirty weekly lessons (geared for 9th-10th grade, but younger students with an interest in science may enjoy the challenge)
- **Insects and Spiders**: eBook for 6th-8th grade in the Unit Studies and More section
- **Friendly Anatomy**: The Bovine Skeletal System: thirteen weekly lessons for 9th-12th grade

Earth Science
- **Geology Unit One**: Rocks and Minerals: sixteen weekly lessons
- **Earth Science**: twenty-five weekly lessons

Physical Science
- **Physical Science**: thirty-six weekly lessons

Biology
- **Biology**: thirty-one weekly lessons
- **General Biology by Core Academy**: thirty-two weekly lessons
- **Anatomy & Physiology**: thirty-six lessons
- **Marine Biology**: thirty weekly lessons
Science

7th-12th Grade

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On SchoolhouseTeachers.com (cont.)

Chemistry
Friendly Chemistry: twelve weekly lessons
Advanced Chemistry: twenty-five weekly lessons

Physics
High School Physics: thirty-six weekly lessons
Additional Science Resources

Ditch the Desk: Week Four (Science) of Test Taking Unit for elementary
Lapbooking Through Science: six mini lapbooks for 1st-3rd grade
Let's Do Science Outside: 20 worksheets for 1st-4th grade
Light Studies: 2 units in Unit Studies and More; all about light for 1st-5th grade
Chemistry Help: thirty-six units
Science Experiments with Jason Lindsey: easy science experiments you can do with household items
Science Experiments with World Book: more than 100 simple science experiments you can do at home
Diet Pop and Mentos: downloadable experiment guide in the Unit Studies and More section
Nature/Outdoors: four-week study of sand; four-week study of animal tracks; four-week study of the night sky; four-week study of rainbows; four-week study of winter; four-week study of creeks
The Story of Energy: e-book in the Unit Studies and More section that explores the discovery of electricity and natural gas, the long road to distributing those resources, the deregulation of the phone system in the past, and what the deregulation of energy may mean for the future
Kinetic Connections-Science: parent helps for teaching science
Focused Learning Center-Science: round up of all science resources on the site
Monthly Book Lists: see lists of books on physical science fun, fun with life science, nature exploration, and science