Kindergarten Science

Course Overview

Kindergarten students begin to develop observation skills as they learn about the five senses, the earth's composition, and the basic needs of plants and animals. Students will explore topics such as:

- **My Body—**the five senses; major organs and systems
- **Plants and Animals—**needs and habitats; conservationist Jane Goodall
- **Measurement—**size, height, length, weight, capacity, and temperature
- **Matter—**solid, liquid, and gas
- **The Seasonal Cycle—**changing weather in the seasons
- **Our Earth—**geographical features; taking care of the earth; environmentalist Rachel Carson
- **Motion—**pushes and pulls; magnets
- **Astronomy—**the earth, sun, moon, and stars; exploring space; astronauts Neil Armstrong and Sally Ride

Course Outline

Observing My World

- Recognize that a scientist observes, and that all people, whether they are scientists or not, are born with senses to observe the world
- Name the five senses and the sensing organs associated with each
- Observe and describe the properties of common objects using your five senses and the appropriate sensory descriptors, such as loud, soft, high, low, sweet, sour, smooth, and rough
- Compare and sort common objects by one physical attribute, such as size, shape, or color

My Body

- Identify and compare external features of the human body
- Name some things that all people have in common and some things that are different
- Explain that your skeleton holds you up and give you shape
- Demonstrate how muscles move your joints and limbs
- Explain that the heart pumps blood throughout the entire body
- Explain that the brain controls the body and allows you to think and remember

Introduction to Living Things

- Recognize that all things fall into one of two categories: living and nonliving
- Identify characteristics of living things and know that all living things need food, water, and air to survive
- Classify living things as plants and animals
- Identify similarities and differences between plants and animals
- Explain that plants use sunlight to make food and that animals eat plants or other animals
- Explain that shelter is a place where animals make their homes

Plants

- Identify common plant structures, such as seeds, roots, stems, leaves, flowers, and fruit
- Find plant structures on a variety of plants
- Distinguish between deciduous and evergreen trees
- Sort and classify seeds according to size, texture, and color
- Recognize that plants grow from seeds and that seeds develop in the fruit
- Examine common edible plants and identify their structures

Animals

- Identify animals according to their body coverings
- Identify how animals move and what body parts help them move
- Recognize that some animals eat plants, others eat animals, and some may eat both plants and animals
- Identify how animals get their food

Where Animals Live

- Identify ways that animals use trees for food and shelter
- Identify plants and animals that live in and around ponds
- Identify animals that use caves for safety and shelter
- Recognize that nocturnal animals are active mostly at night
- Recognize that diurnal animals are active mostly during the day
- Examine how nocturnal animals use their senses at night

Make the Measurement

- Order objects by weight, capacity, height, length, and temperature
- Measure length using nonstandard units
- Make a pictograph to compare the measurements of several objects in nonstandard units
- Experiment with a thermometer to see how high and low temperatures affect it

What's the Matter?
- Identify all matter as solid, liquid, or gas
- Describe the properties of solids, liquids, and gases
- Investigate sinking and floating properties of solids and liquids
- Describe physical changes of matter such as melting and freezing

What's the Weather?
- Identify a range of weather conditions and the appropriate clothing to wear for each
- Record and graph weather patterns
- Demonstrate how the sun warms the earth and how water goes into the air
- Learn that wind is moving air, and that it can move objects
- Know that clouds are moved by wind, are made of water, and have many different shapes and sizes
- Explain that rain is water that falls from clouds
- State that rainbows sometimes appear after a rain
- Describe four types of severe weather: drought, flood, hurricane, and tornado

Seasons
- State that weather gets cooler in the fall, is coldest in the winter, becomes warmer in the spring, and is warmest in the summer
- Identify the changes that happen to deciduous trees in the fall, winter, spring, and summer
- Explain that some animals gather and store food during the fall
- Describe different strategies animals use to make it through cold winters (for example, hibernating, storing food, actively searching for food and shelter, and migrating)
- Recognize that many animals become more active and have babies in the spring
- Recognize that the seasons continually cycle from one to the next

Planet Earth
- Recognize that the earth is your home and that its shape is a sphere
- Explain that land is made of rocks and soil and that rocks are found all over the earth—even under bodies of water
- Identify mountains, hills, valleys, plains, and islands as land shapes

Taking Care of Our Earth
- Identify resources you use in everyday life (water, trees, and energy)
- Explain how you can conserve these resources (for example, by turning off the water faucet, recycling paper, and turning out the lights)
- Identify sources of land and water pollution
- State that Rachel Carson was a conservationist who studied how all of nature is connected

Farming
- Describe the major components of farms such as crops, livestock, the farmer, farm buildings, farm machinery, and farmland
- Explain the daily duties on four types of farms: poultry farms, dairy farms, wheat farms, and cotton farms
- Identify some differences between raising livestock and growing crops
- Identify key steps in the movement of food products from the farm to your home

Make It Move
- Recognize that *motion* is a change in position
- Describe the motion that results from a push or a pull
- Examine both the pushing and pulling properties of magnets
- Identify some uses for magnets in everyday situations

Astronomy
- Describe the size of the sun compared with that of Earth
- Identify the Big Dipper and Little Dipper
- Describe land features on the surface of the moon
- Recognize some important firsts in space exploration, such as the first man to walk on the moon and the first American woman in space

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: 45 minutes. You might choose to split the lessons into smaller segments and take a break between investigations. The K[12] online lesson tracking system allows you to pick up wherever you left off in any given lesson.

Standard Curriculum Items
Plastic pipette
Children's safety goggles
Thermometer
Alnico bar magnets (2)
Magnifying glass
Mirror

Additional Curriculum Items

Some lessons require additional resources, including common household items and books that are readily available online or in your local library:
Animals in Winter by Henrietta Bancroft & Richard G. Van Gelder
My Five Senses by Aliki
The Big Dipper by Franklyn Branley
What's Alive? by Kathleen Weidner Zoehfeld
Where Are the Night Animals? by Mary Ann Fraser
Inflatable globe
Mirror

NOTE: List subject to change.