



Science: Year 2

I. LIVING THINGS AND THEIR ENVIRONMENTS

Teachers: Introduce the idea of interdependence between living things and their environment.

A. HABITATS

- Living things live in environments to which they are particularly suited.
- Specific habitats and what lives there, for example:
 - Forest (for example: oak trees, squirrels, foxes, badgers, snails, mice)
 - Meadow and plains (for example: wildflowers, grasses, prairie dogs)
 - Underground (for example: fungi, moles, worms)
 - Desert (for example: cacti, lizards, scorpions)
 - Water (for example: fish, oysters, starfish)
- The food chain: a way of picturing the relationships between living things
 - Animals: big animals can be eaten by little ones, big animals die and are eaten by little ones.
 - Plants: nutrients, water, soil, air, sunlight

B. OCEANS AND UNDERSEA LIFE

- Most of the Earth is covered with water.
- Locate oceans: Pacific, Atlantic, Indian, Arctic
- Oceans are salt water (unlike fresh water rivers and lakes)
- Coast, shore, waves, tides (high and low)
- Currents, the Gulf Stream
- Landscape of the ocean floor: mountain peaks and deep valleys (trenches)
- Diversity of ocean life: from organisms too small for the eye to see (plankton), to giant whales
- Dangers to ocean life (for example, overfishing, pollution, oil spills)

C. ENVIRONMENTAL CHANGE AND HABITAT DESTRUCTION

- Environments are constantly changing, and this can sometimes pose dangers to specific habitats, for example:
 - Effects of population and development
 - Rainforest clearing, pollution, litter

D. SPECIAL CLASSIFICATIONS OF ANIMALS

- Herbivores: plant-eaters (for example, elephants, cows, deer)
- Carnivores: flesh-eaters (for example, lions, tigers)
- Omnivores: plant and animal eaters (for example, bears)
- Extinct animals (for example: dinosaurs)

II. THE HUMAN BODY: SYSTEMS AND PREVENTING ILLNESS

A. BODY SYSTEMS

Teachers: Introduce the idea of body systems, and have children identify basic parts of the following body systems:

- Skeletal system: skeleton, bones, skull
- Muscular system: muscles
- Digestive system: mouth, stomach
- Circulatory system: heart and blood

- Nervous system: brain and nerves

B. GERMS, DISEASES, AND PREVENTING ILLNESS

- Taking care of your body: exercise, cleanliness, healthy foods, rest
- Vaccinations

III. MATTER

Teachers: Introduce children to the idea that everything is made of matter, and that all matter is made up of parts too small to see.

- Basic concept of atoms
- Names and common examples of three states of matter:
 - Solid (for example, wood, rocks)
 - Liquid (for example, water)
 - Gas (for example, steam)
- Water as an example of changing states of matter of a single substance

IV. PROPERTIES OF MATTER: MEASUREMENT

Teachers: Have children describe and classify objects according to what they are made of, and according to their physical properties (colour, shape, size, weight, texture, etc.)

- Units of measurement:
 - Length: centimetre, metre
 - Volume: millilitre, litre
- Temperature: degrees Celsius

V. INTRODUCTION TO ELECTRICITY

Teachers: Through reading aloud, observation and experiment, explore with children the basic principles of electricity and safety rules.

- Static electricity
- Basic parts of simple electric circuits (for example, batteries, wire, bulb or buzzer, switch)
- Conductive and nonconductive materials
- Safety rules for electricity (for example, never put your finger or anything metallic in an electrical outlet, never touch a switch or electrical appliance when your hands are wet or when you're in the bathtub, never put your finger in a lamp socket, etc.)

VI. INTRODUCTION TO ASTRONOMY

- Sun: source of energy, light, heat
- Moon: phases of the moon (full, half, crescent, new)
- The eight planets (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune)
 - Note that, in 2006, Pluto was classified as a dwarf planet.
- Stars
 - Constellations: the Plough
 - The sun is a star.
- Earth and its place in the solar system
 - The Earth moves around the Sun; the sun does not move
 - The Earth revolves (spins); one revolution takes one day (24 hours)
 - Sunrise and sunset
 - When it is day where you are, it is night for people on the opposite side of the Earth

VII. THE EARTH

A. GEOGRAPHICAL FEATURES OF THE EARTH'S SURFACE

- The shape of the Earth, the horizon
- Oceans and continents
- North Pole and South Pole, Equator

B. WHAT'S INSIDE THE EARTH

- Inside the Earth
 - Layers: crust, mantle, core
 - High temperatures
- Volcanoes and geysers
- Rocks and minerals
 - Formation and characteristics of different kinds of rocks: metamorphic, igneous, sedimentary
 - Important minerals in the Earth (such as quartz, gold, sulphur, coal, diamond, iron ore)

VIII. SCIENCE BIOGRAPHIES

- Rosalind Franklin (often-overlooked woman scientist, discovered double-helix structure of DNA)
- Thomas Edison (invented an electric light bulb)
- Edward Jenner (found a way to stop smallpox)
- Louis Pasteur (made milk safe to drink)