| | Life Science | Physical Science | Earth Science |
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| | *- Characteristics of organisms*<br>*- Life cycles of organisms*<br>*- Organisms and environments* | *- Properties of objects and materials*<br>*- Position and motion of objects*<br>*- Transfer of energy* | *- Properties of earth materials*<br>*- Objects in the Sky*<br>*- Changes in earth and sky* |
| ***4k*** | ***Living Things***<br>• Living vs. Non-living<br>• Basic needs of life (food, air, water)<br><br>***Classification***<br>• Plants vs. Animals | ***Forces***<br>• Push/pull, speed and direction<br><br>***Properties of Matter***<br>• Physical Characteristics<br>• Weight, size, shape,<br><br>***Types of Matter***<br>• Solid, liquid, gas | ***Locations***<br>• City, country, earth<br>• Where are you?<br><br>***Weather***<br>• Seasons change over time |
| ***5k*** | ***Plants***<br>• Parts, life cycle, needs<br><br>***Classifying animals***<br>• Insects, mammals, fish, reptiles, amphibians, bird | ***Solids and Liquids (FOSS)***<br>• Physical properties<br><br>***Forces***<br>• Describing movement<br><br>***Properties of Matter***<br>• Weight, density, volume, length, height<br><br>***Types of Matter***<br>• Changes in states | ***Rocks, Sand, Soil***<br>• Components of the earth<br>• Landforms<br><br>***Weather***<br>• Seasons change over time |

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| ***1st*** | ***Insects***<br>• Life cycles; simple and complete metamorphosis<br>• Observe and compare stages of life: larva, pupa, adult<br>• Structures of insects (head, abdomen, thorax, antennae, etc.)<br>• Understand needs of organisms | ***Comparing and Measuring***<br>• Observing similarities and differences<br>• Procedures for measuring (place units end to end, use beginning and end points)<br>• Nonstandard VS standard units<br>• Use a common starting line | ***Weather***<br>• Weather changes day to day and week to week<br>• Features of weather (clouds, precipitation, temperature)<br>• Air is a material. Observe air pressure, moving air<br>• Compare monthly weather data using weather tools<br>• Observe changes in sun and moon |
| ***2nd*** | ***Plants***<br>• Observe the life cycle of a plant<br>• Structures of flowering plants (root, stem, leaf, bud, flower, seed)<br>• Compare differences between plants | ***Balance and Motion***<br>• Concepts of: balance, counterweight, stability, rotational motion<br>• Stabilize unequal systems<br>• produce rotational motion<br>• Understand variables that affect spin<br>• Observe and compare different rolling systems | ***Pebbles, Sand, Silt***<br>• Sort earth materials<br>• Observe and compare materials in a “river mixture” (silt, sand gravel, small and large pebbles)<br>• Compare ingredients in different soils<br>• Contents of soil (different sized particles, animals, plants, remains)<br>• Worms process soil<br>• Sand, clay, humus<br>• Different soils absorb water differently |
| ***3rd*** | ***Animal Studies***<br>• A habitat has food, water, shelter, and space for an organism<br>• Living and non-living elements affect animals (other animals, plants, climate, water, air, location)<br>• Animals have specific needs (type of food, amount of water, etc.)<br>• Certain body structures help in certain environments | ***Sound***<br>• Pitch, volume, discrimination<br>• Factors determining pitch: length, frequency, tension<br>• Sound in different media: solid, liquid, gas<br><br>***Measurement***<br>• Practices for measuring<br>• Using non-standard measures<br>• Length and mass | ***Solar System***<br>• Earth rotates and orbits<br>• Day, night and seasons are due to earth’s movements<br>• The moon, sun, and stars follow predictable paths in the sky<br>• Constellations |

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| ***4th*** | ***Human Body***<br>• Skeletal and muscular systems<br>• Specialization of muscles and bones<br>• Mechanics of muscles and bones | ***Magnetism & Electricity***<br>• Attraction/repulsion<br>• Magnetic and non-magnetic<br>• Conductors, insulators<br>• Open, closed, parallel, series circuits<br>• Electromagnets<br><br>***Measurement***<br>• Practices for measuring<br>• Capacity, temperature, length, mass | ***Landforms***<br>• Landforms can be created/changed by erosion/deposition<br>• Soil is made of: sand, silt, gravel, clay, humus<br>• Water cycle: evaporation, condensation, precipitation, drainage<br>• Rivers, streams, tributaries<br>• Map skills: topography, contour, elevation, |
| ***5th*** | ***Micro worlds***<br>• Lenses: must be curved, magnification is related to the curve<br>• All living things are made up of at least one cell<br>• Cell structures, needs<br>• Role of bacteria: decomposition, food | ***Forces and Simple Machines***<br>• Construct conceptual and physical models<br>• Concept of force and work<br>• Simple machines | ***Ecosystems***<br>• Roles of organisms: producers, consumers, decomposers<br>• Food webs illustrate relationships<br>• Factors that affect ecosystems: light, water, temperature, soil<br>• Pollutants can disturb ecosystems |
| ***6th*** | ***Body systems***<br>• Cells: parts, basic needs<br>• Body Systems: circulatory, respiratory, digestive<br><br>***Food / Nutrition***<br>• Components of food: carbohydrates, fats, vitamins, proteins<br>• Use indicators to test food | ***Mixtures / solutions***<br>• Mixtures, solutions, concentration, saturation<br>• Chemical reactions<br>• Elements and the periodic table | ***Astronomy***<br>• Sun/Earth/Moon system<br>• Seasons, lunar phases<br>• Solar system: planets, impact craters<br>• Gravity: surface, orbits, tides<br>• Earth's history as a planet |

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| ***7th*** | ***Ecosystems***<br>• Living and non-living factors in an ecosystem<br>• Roles of organisms<br><br>***Populations***<br>• Reproduction<br>• Heredity | ***Chemical Interactions***<br>• Properties of substances: e.g. boiling point, solubility, density, etc<br>• Mixtures can often be separated<br>• Some chemicals react with one another<br>• Elements cannot be easily broken down<br>• Elements are grouped according to certain properties | ***Geology***<br>• History of the Earth's development<br>• Common earth processes from present and past<br>• How landforms are created<br>• Fossils provide evidence of the past<br>• Layers of the earth<br>• Rock cycle |
| ***8th*** | ***Biodiversity & Cellular Life***<br>• Classification through genus and species<br>• Observe organisms with microscopes<br>• Comparing cells of algae, plants, and animals<br>• Organelles of protists<br>• Observe mold, yeast, *Hydra*<br>• Parts of a vertebrate, components of its habitat | ***Light***<br>• Lenses: convex, concave, focal length, magnification<br>• Create an optical device<br>• Structures and function of the eye<br>• Research an optical device | ***Weather & Water***<br>• Radiation, convection, conduction<br>• Movement of heat<br>• Sun as an energy source for changes<br>• Composition of the atmosphere<br>• Cloud types and formation<br>• Water cycle<br>• Effects of the oceans on weather |