Year at a Glance – 4th Grade

	Science Curriculum				Extensions
6 weeks	**Science Topics**	**TEK Objective**	**Concepts to Learn**	**Vocabulary**	**Lab/ Activities**
1st	Classification of plants, fungi, and animals Heredity Comparing living things from the past to living things today Life Cycles of Animals Animal Characteristics/Behavior	4.1 (a) 4.3 (c) 4.4 (a, b) 4.10 (a,b,c)	1) Adaptations enable organisms to survive in their environments such as comparing birds' beaks and leaves on a plant. 2) Some likenesses between parents and offspring are inherited, passed from generation to generation such as eye color in humans or shapes of leaves in plants. 3) Other likenesses are learned such as table manners or reading a book and seals balancing balls on their noses. 4) Organisms undergo similar life processes and have structures that help them survive within their environment.	Organism Microscopic Bacteria Protest Vascular Nonvascular Fungi Vertebrates Invertebrates Trait Heredity Gene Life cycle Direct Development metamorphosis Adaptation Instinct Hibernation Migration Learned behavior Fossil Extinction	Make a model of a cell Plant stem absorb food coloring Make a model of a backbone Make a family tree Examine spore on leaves Activity on "What will I look like as an adult." All thumbs activity Make a fossil. Observe onion skin cells under a microscope.
2nd	Ecosystem The roles of living things Flow of energy Food Webs	4.9 (a,b) 4.1 (b) 4.2 (a,b,c,d,e,f)	1) Plants and animals have basic needs, and they are met through a flow of energy known as food webs. 2) Living organisms within an ecosystem interact with one another and with their environment. 3) Most producers need sunlight, water, and carbon dioxide to make their own food, while consumers are dependent on other organisms for food. 4) Changes such as a fire in a forest can affect the food web of an ecosystem. 5) Many factors such as climate, erosion, population, and water can also affect an ecosystem. 6) Humans can have positive and negative effects on ecosystems.	Environment Ecosystem Population Community Biotic Abiotic Diversity Pollution Habitat Restoration Producer Consumer Herbivore Carnivore Omnivore Decomposer Habitat Niche Food chain Prey Predator Food Web Energy Pyramid	Nature walk to observe ecosystems Super soil Acid or not? Who's an omnivore? Chain of life. Plan and construct a food chain. Construct a model of an ecosystem.

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3rd	Sedimentary, Metamorphic, and Igneous rocks Rock Cycle Weathering Erosion Landforms	4.7 (a), (c), (b) 4.2 (a, b,c,d,e,f) 4.3 (a)	1) Earth Materials have properties that are constantly changing due to Earth's forces. 2) The Earth's resources can be categorized as renewable or nonrenewable. Renewable resources include air, plants, water, and animals. Nonrenewable resources include coal, oil, and natural gas. 3) The conservation of these nonrenewable resources is very important to us as well as future generations. 4) The properties of soil include: color and texture, capacity to retain water, and ability to support the growth of plants. 5) The three main types of rocks are sedimentary, igneous, and metamorphic. **6)** Soils are developed from mineral and organic matter and generally contain an active population of organisms.	Mineral Rock Igneous Sedimentary Metamorphic Rock cycle Weathering erosion Humus Horizon Bedrock Sand Clay Landform Mountain Topography Volcano Earthquake Deposition Glacier Fossil Fossil record	Making layered rock Make a metamorphic rock Observing weathering How much water? Make an island. How Mountains grow. Fossil hunt.
4th	Water Cycle Weather Solar System Moon phases	4.8 (a), (b), (C) 4.2 (a,b,c,d,e,f)	1) Fresh water can be extracted from salt water. 2) The sun heats up water on the earth which then evaporates into the sky. Next the water condenses in the clouds. Once the clouds are too full of condensation, precipitation falls to the earth. 3) Different forms of precipitation include: rain, hail, sleet, and snow. 4) Land heats up and cools down quicker than water. 5) A barometer measures air pressure. 6) The Earth's tilt affects the seasons. 7) The phases of the moon are:	Water cycle Precipitation Evaporation Condensation Rain Sleet Snow Hail Tornado Hurricane Sea breeze Land breeze Rain shadow Air mass Cold Front Warm Front Barometer Anemometer Axis Orbit Moon Phases Solar System Planet Comet Star Sun constellation Galaxy Universe	Forms of water Modeling a flood Heating land and water Making a barometer Sun, Moon and Earth Planet size Make a constellation model

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5th	Physical Properties of Matter Mixtures and Solutions Sound Waves Light Heat	4.5 (a,b,c) 4.3 (a,b,c,d,e,f)	1) Matter is not lost or gained as it changes. 2) The atom is the smallest particle of matter. 3) Evaporation rates vary for different materials. 4) Light travels in straight lines. 5) Describe how sound varies in pitch and intensity. 6) Variance in vibrating objects affects the sound the objects produce. 7) Heat can be transferred through conduction, convection, and radiation.	Matter Mass Volume Density State of matter Solid Liquid Gas Mixture Solution Solubility Suspension Vibration Pitch Intensity Wavelength Frequency Amplitude Reflection Absorption Transmission Light Reflection Refraction Conduction Convection Radiation Energy transfer Waste heat	Wet test Spaces and places Cool, warm, or hot. Diving Bell Change It Bubble, Bubble, Bubble Hands-on vibrations Making waves Quiet, please Is it broken? Hot air Zap it!
6th	Magnetism Electricity Gravity Friction Inertia Simple Machines	4.6 (a,b,c,d) 4.3 (d)	1) Energy exists in many forms and can be observed in cycles, patterns, and systems. 2) Electricity travels in a closed path creating an electrical circuit. 3) Energy can change forms. 4) Simple machines such as a lever, pulley, wedge, screw, wheel and axle change work by making it less difficult.	Static electricity Current electricity Series circuit Parallel circuit Conductor Insulator Magnet Magnetic field Electromagnet Generator Electric motor Potential energy Kinetic energy Hydroelectric power Geothermal energy Solar energy Chemical energy Mechanical energy Position Motion Speed Velocity Acceleration Inertia Gravity Weight Friction Work Simple Machine Lever Fulcrum Pulley Wheel and axle Inclined Plane Screw Wedge	Pull together or push apart? Needle dance Solar hearing Chemical energy Fast walk, slow walk Spring-scale follow the leader Get the feel of friction Lift it! A model wheel-and-axle Spreading spines