Grade Level	**3rd**
Subject	**Science**
Semester 1	**Quarter 1**

Standards	• **3.LS1: From Molecules to Organisms: Structures and Processes**
	  ○ Analyze the internal and external structures that aquatic and land animals and plants have to support survival, growth, behavior, and reproduction.
	• **3.LS2: Ecosystems: Interactions, Energy, and Dynamics**
	  ○ Construct an argument to explain why some animals benefit from forming groups.
	• **3.LS4: Biological Change: Unity and Diversity**
	  ○ Explain the cause and effect relationship between a naturally changing environment and an organism's ability to survive.
	  ○ Infer that plant and animal adaptations help them survive in land and aquatic biomes.
	  ○ Explain how changes to an environment's biodiversity influence human resources.
	Engineering, Technology, and Applications of Science (ETS) Standards are embedded throughout curriculum:
	• **3.ETS1: Engineering Design**
	  ○ Design a solution to a real-world problem that includes specified criteria for constraints.
	  ○ Apply evidence or research to support a design solution.
	• **3.ETS2: Links Among Engineering, Technology, Science, and Society**
	  ○ Identify and demonstrate how technology can be used for different purposes.

Objectives/I Can Statements	• I can summarize the structures and processes plants require to reproduce. • I can infer that different types of plants reproduce in different ways. • I can compare and contrast the role of insects, animals, and natural forces in pollination. • I can explain the impact of environmental conditions on germination. • I can compare and contrast the growth and development of animals that do and do not undergo metamorphosis. • I can give examples of some animals that undergo metamorphosis and describe how they grow and change. • I can relate the number of offspring to the amount of parental care animals provide. • I can compare defense systems used by different plants to help them survive. • I can predict what a plant needs from its environment in order to survive. • I can explain why different kinds of plants are found in different environments. • I can describe how plants respond to changing seasons. • I can design an investigation to determine a plant's response to sunlight. • I can predict what might happen to a species when an ecosystem changes. • I can explain how a species survives. • I can explain the survival benefits of animal groups. • I can assess negative consequences of human activities on ecosystems. • I can differentiate between different types of pollution resulting from human activities. • I can argue why humans need to carefully examine how their activities affect ecosystems.
Topics	• Organisms and the Environment • Plant Reproduction • Growth and Development • Responses to Environment • Survival

	• Human Effects on Ecosystems
Vocabulary	• pollination, root, stem, seed, pistil, habitat, fruit, flowering plant, plant, male, germination, fern, biome, cell, moss, gene, stigma, pollen, reproduce, flower, stamen, cone, spore, conifer, female • mammal, egg, larva, minerals, animal, prey, amphibian, food chain, survive, gland, reptile, predator, spider, bird, characteristic, fish, nutrients, behavior, offspring, growth, adult, reproduce, invertebrate, metamorphosis, insect, species, cell, cocoon, molt, classify, bilateral symmetry, pupa • energy (organisms), disease, microorganism, photosynthesis, environment, algae, rain forest, adaptation, soil, desert, tropism, air, tundra, survive • ecosystem, population, freshwater, food web, fossil fuels, estuary, food chain, renewable resource, endangered species, extinct, grassland, biodiversity, swamp, coal, animal, plant, habitat, climate, biological diversity, pollute, tundra, species, microorganism, wetland, recycle, environment, rain forest, carbon dioxide, niche, groundwater, community
Summary of Key Learning Events/Instruction	• Plants and animals reproduce and transmit hereditary information between generations. • Recognize the relationship between reproduction and the continuation of a species. • Analyze physical and behavioral adaptations that enable organisms to survive in their environment. • Establish the connections between human activities and natural disasters and their impact on the environment. • Use and discuss texts and other media around the following topics: *Parts of a Plant, Plant Life Cycles, Food Chains, Hibernation, Migration, Camouflage, Plant Adaptations, Past, Slow Land Changes and Natural Resources* • Conduct developmentally appropriate research and inquiry activities.
Instructional Materials/Resources	• Discovery Education Science Techbook Unit 3 • Trade books • www.brainpop.com • http://studyjams.scholastic.com/studyjams/ • other resources as determined by grade level team
Assessment	• Daily assignments • Exit Tickets • Individual and group projects • Formative assessments • Summative assessments

Grade Level	**3rd**
Subject	**Science**
Semester 1	**Quarter 2**

Standards	• **3.ESS1: Earth's Place in the Universe**
	  ○ Use data to categorize the planets in the solar system as inner or outer planets according to their physical properties.
	• **3.ESS2: Earth's Systems**
	  ○ Explain the cycle of water on Earth.
	  ○ Associate major cloud types (cumulus, cumulonimbus, cirrus, stratus, nimbostratus) with weather conditions.
	  ○ Use tables, graphs, and tools to describe precipitation, temperature, and wind (direction and speed) to determine local weather and climate.
	  ○ Incorporate weather data to describe major climates (polar, temperate, tropical) in different regions of the world.
	Engineering, Technology, and Applications of Science (ETS) Standards are embedded throughout curriculum:
	• **3.ETS1: Engineering Design**
	  ○ Design a solution to a real-world problem that includes specified criteria for constraints.
	  ○ Apply evidence or research to support a design solution.
	• **3.ETS2: Links Among Engineering, Technology, Science, and Society**
	  ○ Identify and demonstrate how technology can be used for different purposes.

Objectives/I Can Statements	• I can categorize the eight planets into the inner and outer planet groups. • I can compare the different characteristics of the inner and outer planets. • I can make observations about why the inner and outer planet characteristics differ. • I can define climate and explain how it is different from weather. • I can explain the role of the water cycle in determining an area's climate. • I can describe different factors that can affect climate. • I can develop a simple model of the water cycle. • I can describe how Earth's systems interact in the water cycle. • I can explain the processes by which water changes state during the water cycle. • I can describe how water collects in bodies on Earth's surface and underground. • I can construct a barometer using common materials. • I can relate various weather instruments to the atmospheric conditions that they are used to measure. • I can explain what weather is and why it changes. • I can explain what wind is and relate its occurrence to specific changes in atmospheric conditions. • I can compare different types of precipitation and how they develop. • I can explain how instruments are used to measure atmospheric conditions. • I can explain how meteorologists look for and interpret weather patterns. • I can investigate the relationship between sunlight and outdoor temperature. • I can analyze and interpret basic weather maps. • I can collect, analyze, interpret, and present weather data in tables and graphical displays. • I can explain what causes a volcano to erupt and describe different types of volcanic eruptions. • I can describe the formation of different types of volcanoes. • I can explain how volcanic eruptions change the surface of Earth.
Topics	• **Planetary Objects -** Inner and Outer Planets • **Weather and Climate -** Climate, Water Cycle, Weather, Weather Data • **Natural Hazards -** Volcanoes

Vocabulary	• space, astronaut, solar system, planet, Kuiper Belt, orbit, atmosphere, nebulae, astronomy, position, planetoid, Earth, moon, asteroid, Venus • mountain, season, tropical, air, period, climate, tundra, atmosphere, fossil fuels, pollution, water cycle, temperate, rain, weather, heat, global warming, cycle, wind, temperature (weather), precipitation, water • circulate, biosphere, condense, system, geosphere, cycle, hydrosphere, atmosphere, evaporation, sleet, glacier, hail, energy (physical), water vapor, freeze, rain, phase, river, vapor, change of state, groundwater • air pressure, season, tropical, circulate, tornado, thermometer (weather), hurricane, humidity, liquid, moisture, predict, blizzard, sleet, climate, meteorology, air, barometric pressure, barometer, waterspout • Celsius, dew point, pressure, predict, satellite, measure, degree, map, front, climate, observe, energy (physical), temperate, evidence, analyze, hypothesis, forecast, flood, tides, Fahrenheit, detect, data • volcanic dome, earthquake, mantle, tectonic plate, crust, surface, lava, density, landform, geology, liquid, volcano, geyser, gas, mountain, erupt, structure, molten, solid, magma, fault
Summary of Key Learning Events/Instruction	• Identify and compare the major components of the solar system. • The earth is surrounded by an active atmosphere and an energy system that controls the distribution life, local weather, climate, and global temperature. • Differentiate between weather and climate. • Recognize the major components of the water cycle. • The earth is surrounded by an active atmosphere and an energy system that controls the distribution life, local weather, climate, and global temperature. • Recognize that there are a variety of atmospheric conditions that can be measured. • Use tools such as the barometer, thermometer, anemometer, and rain gauge to measure atmospheric conditions. • Major geologic events that occur over eons or brief moments in time continually shape and reshape the surface of the Earth, resulting in continuous global change. • Explain how natural hazards (fires, landslides, earthquakes, volcanic eruptions, floods) impact humans and the environment. • Design solutions to reduce the impact of natural hazards (fires, landslides, earthquakes, volcanic eruptions, floods) on the environment. • Use and discuss texts and other media around the following topics: *Inner and Outer Planets*, *Water Cycle*, *Clouds*, *Weather Tools*, *Weather Data*, *Volcanoes* • Conduct developmentally appropriate research and inquiry activities.
Instructional Materials/Resources	• Discovery Education Science Techbook Units 4-6 • Trade books • www.brainpop.com • http://studyjams.scholastic.com/studyjams/ • other resources as determined by grade level team
Assessment	• Daily assignments • Exit Tickets • Individual and group projects • Formative assessments • Summative assessments

Grade Level	**3rd**
Subject	**Science**
Semester 2	**Quarter 3**
Standards	• **3.PS1: Matter and Its Interactions**

	○ Describe the properties of solids, liquids, and gases and identify that matter is made up of particles too small to be seen. ○ Differentiate between changes caused by heating or cooling that can be reversed and that cannot. ○ Describe and compare the physical properties of matter including color, texture, shape, length, mass, temperature, volume, state, hardness, and flexibility. • **3.PS2: Motion and Stability: Forces and Interactions** ○ Explain the cause and effect relationship of magnets. ○ Solve a problem by applying the use of the interactions between two magnets. • **3.PS3: Energy** ○ Recognize that energy is present when objects move; describe the effects of energy transfer from one object to another. ○ Apply scientific ideas to design, test, and refine a device that converts electrical energy to another form of energy, using open or closed simple circuits. ○ Evaluate how magnets cause changes in the motion and position of objects, even when the objects **Engineering, Technology, and Applications of Science (ETS) Standards are embedded throughout curriculum:** • **3.ETS1: Engineering Design** ○ Design a solution to a real-world problem that includes specified criteria for constraints. ○ Apply evidence or research to support a design solution. • **3.ETS2: Links Among Engineering, Technology, Science, and Society** ○ Identify and demonstrate how technology can be used for different purposes.
Objectives/I Can Statements	• I can describe the three states of matter. • I can understand that we can describe matter based on its properties. • I can identify properties of matter including mass, volume, density, color, texture, and temperature. • I can observe examples of matter and compare and contrast them according to their properties. • I can explain how scientists record and describe properties of matter, such as size, shape, color, texture, and hardness. • I can determine and then compare both the mass and volume of common solids and liquids. • I can compare and contrast the three common states of matter. • I can relate the effect of temperature to an object's state. • I can identify water in its three states. • I can explain how energy can change forms within a system. • I can describe how many systems convert energy to heat or motion. • I can explain how energy changes form when it passes to a different organism in an ecosystem. • I can create food-chain diagrams of several common foods. • I can describe how moving water and air act as sources of energy that can used to make things move. • I can compare how two magnets interact with each other when: a) a north pole is brought near a north pole and b) a north pole is brought near a south pole. • I can design a demonstration to show that magnets attract particular types of metals. • I can compare and model how two magnets can attract and repel each other.

	• I can explain that electrical energy can be transformed into light, heat, sound, and motion. • I can describe how electricity can create magnetism. • I can describe how magnets can create electricity. • I can explain why electrical motors need both electricity and magnets. • I can construct and understand the operation of a simple electromagnet. • I can model a simple closed circuit that can power a lightbulb. • I can explain how different parts of a circuit help control the flow of electricity. • I can explain how devices can transform electrical energy into other forms of energy. • I can explain how different kinds of circuits work.
Topics	• **Matter -** Review of Matter, Three States of Matter • **Magnets and Electrical Energy -** Energy in Systems, Magnets, Magnets and Electricity, Electric Circuits
Vocabulary	• measure, insulate, liquid, density, mass, periodic table of elements, pure substance, magnet, corrosive, gas, state of matter, chemical, substance, mineral, optical, transparent, electric, conductor, translucent, solid, weight, matter, classify, metal, color, temperature (general) • solid, steam, vapor, fluid, change of state, air, melting point, matter, evaporation, substance, melt, classify, pure, freeze, temperature (general), state of matter, boil, liquid, water • ecosystem, decomposer, consumer, fossil fuels, chemical energy, radiation, food chain, energy transfer, water cycle, energy (organisms), mechanical energy, solar energy, transmit, energy (physical), chemical, conservation of energy, kinetic energy, river, system, power, atom, species, photosynthesis, producer, heat, hydroelectric power, digestive system • attract, magnetite, magnetic, force, electromagnet, magnet, repel, pole, magnetic field • electron, attract, generator, magnetic, stored energy, electric, electromagnet, repel, static electricity, power, magnetic field, technology • conduct, current, insulate, stored energy, negative charge, filament, series circuit, transmit, electron, control, battery, switch, positive charge, electrical system, fuse, power, circuit, thermostat, contact, parallel circuit, resistance, particle
Summary of Key Learning Events/Instruction	• Observe and measure the simple chemical properties of common substances. • Design and conduct an experiment to demonstrate how various types of matter freeze, melt, or evaporate. • Investigate factors that affect the rate at which various materials freeze, melt, or evaporate. • The composition and structure of matter is known, and it behaves according to principles that are generally understood. • Design a simple experiment to determine how the physical properties of matter can change over time and under different conditions. • Various forms of energy are constantly being transformed into other types without any net loss of energy from the system. • Explore the interactions between magnets. • Understandings about scientific inquiry and the ability to conduct inquiry are essential for living in the 21st century. • Recognize the connection between scientific advances, new knowledge, and the availability of new tools and technologies. • Everything in the universe exerts a gravitational force on everything else; there is an interplay between magnetic fields and electrical currents. • Explore how magnets attract objects made of certain metals.

	• Recognize the connection between scientific advances, new knowledge, and the availability of new tools and technologies. • Explain how electricity in a simple circuit requires a complete loop through which current can pass. • Use and discuss texts and other media around the following topics: *Solids, Liquids, and Gases; Changes of Matter; Physical and Chemical Changes; Pushes and Pulls; Energy Sources; Heat, Light and Sound; Magnets* • Conduct developmentally appropriate research and inquiry activities.
Instructional Materials/Resources	• Discovery Education Science Techbook Units 2 and 1 • Trade books • www.brainpop.com • http://studyjams.scholastic.com/studyjams/ • other resources as determined by grade level team
Assessment	• Daily assignments • Exit Tickets • Individual and group projects • Formative assessments • Summative assessments

Grade Level	**3rd**
Subject	**Science**
Semester 2	**Quarter 4**

Standards	• **3.ESS3: Earth and Human Activity**
	  ○ Explain how natural hazards (fires, landslides, earthquakes, volcanic eruptions, floods) impact humans and the environment.
	  ○ Design solutions to reduce the impact of natural hazards (fires, landslides, earthquakes, volcanic eruptions, floods) on the environment.
	• **3.ETS1: Engineering Design**
	  ○ Design a solution to a real-world problem that includes specified criteria for constraints and apply evidence or research to support a design solution.
	• **3.ETS2: Links Among Engineering, Technology, Science, and Society**
	  ○ Identify and demonstrate how technology can be used for different purposes.

Objectives/I Can Statements	• I can explain the causes and effects of severe weather. • I can compare the dangers of different types of severe weather. • I can describe and compare safety procedures for different types of storms. • I can develop logical arguments for implementing various storm safety procedures. • I can design/construct a storm emergency kit to be used in multiple types of storms. • I can apply understanding of different types of severe weather to formulate a family storm emergency plan. • I can identify and show how technology can be used for many purposes.
Topics	• **Natural Hazards -** Protection from Severe Weather • **Family Life Curriculum**
Vocabulary	• observe, infer, predict, investigation, hypothesis, experiment, data, evidence, design, process, technology • rain, blizzard, tornado, lightning, shelter, snowstorm, flood, meteorology, hurricane, hail, suspension bridge, thunderstorm, wind, weather
Summary of Key Learning Events/Instruction	• Design a solution to a real-world problem that includes specified criteria for constraints. • Apply evidence or research to support a design solution. • Explain how natural hazards (fires, landslides, earthquakes, volcanic eruptions, floods) impact humans and the environment. • Design solutions to reduce the impact of natural hazards (fires, landslides, earthquakes, volcanic eruptions, floods) on the environment. • Use and discuss texts and other media around the following topics: *Natural Hazards, Engineering, Technology, Invention and Design* • Conduct developmentally appropriate research and inquiry activities.
Instructional Materials/Resources	• Discovery Education Science Techbook Unit 5 • Trade books • www.brainpop.com • http://studyjams.scholastic.com/studyjams/ • other resources as determined by grade level team • Michigan Model of Health
Assessment	• Daily assignments • Exit Tickets • Individual and group projects • Formative assessments • Summative assessments