Teacher: Core Science Grade 4	Year: 2010-11
Course: Science Grade 4	Month: All Months

September

CHARACTERISTICS OF LIFE FUNCTIONS: CELLS/ORGANIZATION

Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons
	The Building Blocks of Life/ Cells How are Plants Classified?	**General Skill:** Label parts of an animal cell and a plant cell verbally and in writing. **General Skill:** Describe the jobs of cells orally and in writing. **General Skill:** Differentiate between vascular and non-vascular plants in writing. **Science Skills:** Describe patterns and relations both visually and in writing of both living and nonliving things. **Science Skills:** Describe patterns and relations both visually and in writing of both living and nonliving things. **Science Skills:** observe and describe interactions among components of			

			simple systems • identify common things that can be considered to be systems (e.g., a plant, a transportation system, human beings)– Standard 6 Key Idea 1			

October	CHARACTERISTICS OF LIFE FUNCTIONS: PLANTS/ANIMALS					
	Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons
		Plant Characteristics Plant Parts Plant Reproduction Life Cycle of a Plant	Describe what plants need to survive orally or in writing. Identify the parts of plants and state their function orally and in writing.			

			Summarize the process of photosynthesis orally and in writing. Summarize the plant reproduction process, and identify plant reproductive organs orally and in writing. Sequence the life cycle of a plant orally and in writing. **Science Skill:** observe and describe interactions among components of simple systems • identify common things that can be considered to be systems (e.g., a plant, a transportation system, human beings)– Standard 6 Key Idea 1 **Science Skills:** Describe patterns and relations both visually and in writing of both living and nonliving things. **Science Skill:** Observe, discuss,			

			and record data both visually and in writing			

November	ECOLOGY: ECOSYSTEMS					
	Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons
		Parts of Ecosystems Energy Flow in Ecosystems Matter/Energy Flow in Ecosystems	List living and non-living parts of an ecosystem in writing and communicate them orally. Describe different types of ecosystems orally, visually, and in writing. Differentiate between the different parts of ecosystems verbally and orally. Contrast consumers within ecosystems in writing, verbally, and/or visually. Determine energy flow in ecosystems using food chains and food webs verbally, in writing, and visually. Determine the factors that			

			negatively and positively affect ecosystems verbally, in writing, and visually. **Science Skill:** Describe patterns and relations both visually and in writing of both living and nonliving things. **Science Skill:** Classify objects visually, kinesthetically, or in writing **Science Skill:** Interpret organized observations (using charts, diagrams, and tables) using measurements, recognizing simple patterns, sequences, and relationships. **Science Skill:** use different types of models, such as graphs, sketches, diagrams, and maps, to represent various aspects of the real world – Standard 6 Key Idea 2			

December

ECOLOGY: ECOSYSTEMS/COMPETITION/RELATIONS OF LIVING THINGS

Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons
	How Ecosystems Balance Organisms Interactions Changing Environments Humans Disturbing the Balance of	List the needs of all living things in writing. Describe and contrast the way organisms interact in ecosystems			

		Ecosystems	verbally and in writing. Explain the affect of climate and natural disasters on ecosystems verbally, and describe these effects in writing. Express ways humans disturb the balance of ecosystems and the effects these actions have on the ecosystems verbally and describe these in writing. **Science Skill:** Describe patterns and relations both visually and in writing of both living and nonliving things. **Science Skill:** observe and describe interactions among components of simple systems. Identify common things that can be considered to be systems (e.g., a plant, a transportation system, human beings)– Standard 6 Key Idea 1			

January

RENEWABLE RESOURCES: ENERGY/MATTER: STATES OF MATTER/MIXTURES/PHYSICAL/CHE
CHANGES

Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources
	What is Matter? How Matter is Measured How Substances Mix How Matter Changes	Identify, compare and contrast the three states of matter (solid, liquid, gas) in writing, verbally, and visually. Justify that all matter is made of tiny particles called atoms verbally. Measure the mass of matter using a pan balance. Measure the volume of matter using a graduated cylinder. Compare/contrast the densities of matter using various liquids.			States of Matter States of Matter and Chemical vs. Physical Change	Use pgs. 319-337 in Science text b http://phet.colorado.edu/en/simulat The above link has interactive scie use in the computer lab or on the s

		Identify the behavior and positioning of particles in different states of matter verbally, visually, kinesthetically, and in writing. Compare and contrast mixtures and solutions verbally, kinesthetically, and/or in writing. Differentiate between a physical and chemical change in matter verbally, visually, and in writing. **Science Skill:**Describe patterns and relations both visually and in writing of both living and nonliving things. **Science Skill:** Explore and solve problems generated from school, home, and community situations, using concrete objects or manipulative materials when possible. **Science Skill:** Use appropriate scientific tools, such as metric				

		rulers, spring scale, pan balance, graph paper, thermometers [Fahrenheit and Celsius], graduated cylinder to solve problems about the natural world **Science Skill:** Observe, discuss, and record date both visually and in writing. **Science Skill:** use simple instruments to measure such quantities as distance, size, and weight and look for patterns in the data – Standard 6 Key Idea 5				

February

ENERGY:TYPES AND TRANSFER/HEAT

Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons
	Why Matter has Energy How Heat Moves	Describe thermal energy and how it affects the moving particles in matter verbally, kinethetically and in writing. Measure temperature using a thermometer. Describe how a thermometer works by explaining the changes in movement of the particles in			

			matter based on the addition or subtraction of heat. Differentiate between conductors and insulators verbally, visually, and in writing. Describe the movement of heat energy by conduction, convection, and radiation verbally, visually, and in writing.			

March	ENERGY:TYPES AND TRANSFER/ELECTRICITY AND MAGNETISM					
	Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons
		How Matter Becomes Charged How Electric Charges Flow Magnetic Fields Electricity Transformed to Magnetism Magnetism Transformed to Electricity	Diffentiate between static electricity and electric current verbally and in writing. Explain how charged particles behave in matter and how they are able to move verbally and in writing. Build a series and parallel circuit. Describe the flow of electric current through both verbally and in writing. Differentiate between conductors and insulators. Test matter for conductivity using a circuit. Locate the north and south poles of magnets, and describe how like poles repel and opposite poles			

			attract verbally, kinethetically, and in writing. Describe how a compass works because of the Earth's core verbally, using a compass, and in writing. Experiment with electromagnets, and explain how the electricity makes the iron magnetic. Identify objects that use electromagnets visually, orally, and in writing. Explain how different natural resources are used to generate electric power verbally, visually, and in writing.			

April	FORCES IN MOTION					
	Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons
		What is Motion How Force Affects Moving Objects How Force, Mass, and Energy are Related	Differentiate between different types of motion verbally, kinethetically, and in writing. Identify ways to measure motion verbally and in writing.			

May	Review ~ NYS Exam Review						
	Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Reso

		NYS Exam Review					
June	ENERGY: SIMPLE MACHINES						
	Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	
		What is a Machine How Machines Work Together					
