

Life Science

Month	Learner Outcomes / Standards	Content	Assessments	Resources
Sept/ Oct	<p>7.1.3.4 Current and emerging technologies have enabled humans to develop and use models to understand and communicate how natural and designed systems work and interact.</p> <p>7.1.3.4.2 Determine and use appropriate safety procedures, tools, measurements, graphs and mathematical analyses to describe and investigate natural and designed systems in a life science context.</p> <p>7.1.1.2 Science inquiry uses multiple interrelated processes to investigate questions and propose explanations about the natural world.</p> <p>7.1.1.2.3 Generate a scientific conclusion from an investigation, clearly distinguishing between results and conclusions</p> <p>7.1.1.2.1 Generate and refine a variety of scientific questions and match them with appropriate methods of investigation, such as field studies, controlled experiments, reviews of existing work, and development of models.</p> <p>7.1.1.2.2 Plan and conduct a controlled experiment to test a hypothesis about relationships between two variables, ensuring that one variable is systematically manipulated, the other is measured and recorded, and any other variables are kept the same. Writing appropriate conclusions based on data. Design and carry out an experiment following the scientific and method, making note of dependent and independent variables.</p>	<p>Intro. Unit – includes lab Skills, safety, Measurement, classification.</p> <p>What are the metric base units for volume, mass, and length?</p> <p>What are the safety rules for the classroom/lab?</p> <p>How do you measure length, mass and volume using the metric system?</p> <p>How are living things classified?</p> <p>How does the use of technology in science influence society?</p> <p>How have previous scientific discoveries influenced our lives?</p> <p>Controlled experiments</p> <p>What criteria are used to write a good lab question?</p> <p>How should a lab conclusion refer to the hypothesis?</p> <p>What is the scientific method?</p>	<p>Labs, Quizzes, Tests, Group Discussions Worksheets Science Links</p>	<p>Websites, Textbooks, videos,</p>
Oct./N	<p>7.1.1.1 Science is a way of knowing about the natural world and is characterized by empirical</p>	<p>Processing and Interpreting data</p>	<p>Labs, Quizzes, Tests, Group Discussions</p>	<p>Websites, Textbooks,</p>

ov.	<p>criteria, logical argument and skeptical review</p> <p>7.1.1.1.1 Understand that prior expectations can create bias when conducting scientific investigations.</p> <p>7.1.1.1.2 Understand that when similar investigations give different results, the challenge is to judge whether the differences are significant, and if further studies are required. Graphs, writing conclusions, discussions, analyzing data, problem solving</p> <p>7.2.1.1 The idea that matter is made up of atoms and molecules provides the basis for understanding the properties of matter.</p> <p>7.2.1.1.1 Recognize that all substances are composed of one or more of approximately on hundred elements and that the periodic table organizes the elements into groups with similar properties.</p> <p>7.2.1.1.2 Describe the differences between elements and compounds in terms of atoms and molecules.</p> <p>7.2.1.1.3 Recognize that a chemical equation describes a reaction where pure substances change to produce one or more pure substances whose properties are different from the original substance. Identifying chemical symbols, intro to periodic table, counting atoms and molecules.</p>	<p>What kind of graph best fits your data?</p> <p>What does the data collected in your lab prove?</p> <p>Intro. to chemistry</p> <p>What is an element, molecule, and atom; how are they related to one another?</p> <p>What is the purpose of the periodic table?</p> <p>What are the key parts of the periodic table?</p>	<p>Worksheets Science Links</p> <p>Labs, Quizzes, Tests, Group Discussions Worksheets Science Links</p>	<p>videos,</p> <p>Websites, Textbooks, videos,</p>
-----	---	--	---	--

Month	Learner Outcomes / Standards	Content	Assessments	Resources
Nov./ Dec	<p>7.4.1.1 Tissues, organs and organ systems are composed of cells and function to serve the needs of all cells for food,</p> <p>7.4.1.1.1 Recognize that all cells do not look alike and that specialized cells in multi-cellular organisms are organized into tissues and organs that perform.</p> <p>7.4.1.2 All living organisms are composed of one or more cells, which carry on the many functions needed to sustain life.</p> <p>7.4.3.1 Reproduction is a characteristic of all organisms and is essential for the continuation of a species. Hereditary information is contained in genes which are inherited through asexual or sexual reproduction. specialized functions.</p>	<p>Cells/Genetics</p> <p>How are plant and animal cells different?</p> <p>What is the cell theory?</p> <p>What are the primary organelles of plant and animal cells?</p> <p>What is heredity?</p> <p>How are traits passed from generation to generation?</p> <p>What are some reasons alleles are manifested differently?</p>	<p>Labs, Quizzes, Tests, Group Discussions Worksheets Science Links</p>	<p>Websites, Textbooks, videos,</p>
Jan.	<p>7.4.1.1.2 Describe how the organs in the respiratory, circulatory, digestive, nervous, skin and urinary systems interact to serve the needs of vertebrate organisms.</p> <p>7.4.1.2.1 Recognize that cells carry out life functions, and that these functions are carried out in a similar way in all organisms, including animals, plants, fungi, bacteria and protists.</p> <p>7.4.1.2.2 Recognize that cells repeatedly divide to make more cells for and repair.</p> <p>7.4.1.2.3 Use the presence of the cell wall and chloroplasts to distinguish between plant and animals cells.</p> <p>7.4.3.1.1 Recognize that cells contain genes and that</p>		<p>Labs, Quizzes, Tests, Group Discussions Worksheets Science Links</p>	<p>Websites, Textbooks, videos,</p>

	<p>each gene carries a single unit of information that either alone, or with other genes, determines the inherited traits of an organism.</p> <p>7.4.3.1.2 Recognize that in asexually reproducing organisms all the genes come from a single parent, and that in sexually reproducing organisms about half of the genes come from each parent.</p> <p>7.4.3.1.3 Distinguish between characteristics of organisms that are inherited and those acquired through environmental influences. Identify main organelles and functions, compare/contrast animal and plant cells, observe and draw cells. Use a punnett square. Critical thinking, predicting.</p>			
<p>Jan/Feb</p>	<p>7.4.4.2 Human beings are constantly interacting with other organisms that cause disease.</p> <p>7.4.4.2.1 Explain how viruses, bacteria, fungi and parasites may infect the human body and interfere with normal body functions.</p> <p>7.4.4.2.2 Recognize that a microorganism can cause specific diseases and that there are a variety of medicines available that can be used to combat a given microorganism.</p> <p>7.4.4.2.3 Recognize that vaccines induce the body to build immunity to a disease without actually causing the disease itself.</p> <p>7.4.4.2.4 Recognize that the human immune system protects against microscopic organisms and foreign substances that enter from outside the body and against some cancer cells that arise from within.</p>	<p>Human Biology</p> <p>How does a vaccine works?</p> <p>Why do we need to get a flu shot every year?</p> <p>How does an antibiotic work and what are the dangers of not finishing the antibiotics?</p>	<p>Labs, Quizzes, Tests, Group Discussions Worksheets Science Links</p>	<p>Websites, Textbooks, videos,</p>
<p>Feb./Mar.</p>	<p>7.4.2.1 Natural systems include a variety of organisms that interact with one another in several ways.</p> <p>7.4.2.2 The flow of energy and the recycling of matter</p>	<p>Ecology/Plants/ Animals</p> <p>All food energy comes from what source?</p>	<p>Labs, Quizzes, Tests, Group Discussions Worksheets Science Links</p>	<p>Websites, Textbooks, videos,</p>

	<p>are essential to a stable ecosystem.</p> <p>7.4.3.2 Individual organisms with certain traits in particular environments are more likely than others to survive and have offspring.</p> <p>7.4.4.1 Human activity can change living organisms and ecosystems.</p> <p>7.1.3.4 Current and emerging technologies have enabled humans to develop and use models to understand and communicate how natural and designed systems work and interact.</p> <p>7.4.2.1.1 Identify a variety of populations and communities in an ecosystem and describe the relationships among the populations and communities in a stable ecosystem.</p>	<p>How are food webs and food chains similar, different?</p> <p>How are predator/prey relationships interrelated?</p> <p>Why are both biotic and abiotic factors needed for life?</p> <p>What are the primary differences between producers, consumers, and decomposers?</p> <p>How do plants, animals, and other organisms interact with each other in their environment?</p>		
<p>Mar./ Apr</p>	<p>7.4.2.1.2 Compare and contrast the roles of organisms with the following relationships: predator/prey, parasite/host, and producer/consumer/decomposer.</p> <p>7.4.2.1.3 Explain how the number of populations an ecosystem can support depends on the biotic resources available as well as abiotic factors such as amount of light and water, temperature range and soil composition.</p> <p>7.4.2.2.1 Recognize the producers use the energy from sunlight to make sugars from carbon dioxide and water through a process called photosynthesis. This food can be used immediately, stored for later use, or used by other organisms.</p>	<p>How does energy flow through an ecosystem?</p> <p>What impact do humans have on ecosystems?</p> <p>How are groups of animals classified?</p> <p>How are vertebrates and invertebrates similar/different?</p>		
<p>Apr./ May</p>	<p>7.4.2.2.2 Describe the roles and relationships among producers, consumers and decomposers in changing energy from one form to another in a food web within an ecosystem.</p> <p>7.4.2.2.3 Explain that the total amount of matter in an</p>			

<p>ecosystem remains the same as it is transferred between organisms and their physical environment, even though its form and location change.</p> <p>7.4.3.2.1 Explain how the fossil record documents the appearance, diversification and extinction of many life forms.</p> <p>7.4.3.2.2 Use internal and external anatomical structures to compare and infer relationships between living organisms as well as those in the fossil record.</p> <p>7.4.3.2.3 Recognize that variation exists in every population and describe how a variation can help or hinder an organism's ability to survive.</p> <p>7.4.3.2.4 Recognize that extinction is a common event and it can occur when the environment changes and a population's ability to adapt is insufficient to allow its survival.</p> <p>7.4.4.1.1 Describe examples where selective breeding has resulted in new varieties of cultivated plants and particular traits in domesticated animals.</p> <p>7.4.4.1.2 Describe ways that human activities can change the populations and communities in an ecosystem</p> <p>7.1.3.4.1 Use maps, satellite images and other data sets to describe patterns and make predictions about natural systems in a life science context. Create a food web, compare/contrast predator-prey relationships.</p>			
--	--	--	--