

Grade 8 Science

Diary map is based on the 2016-2017 school year. Information may change year to year. Months are guidelines and items may be done at different times of the year.

Month	Essential Questions	Content	Skills	Assessment	Resources	Technology
First Semester	<p>Science Night How can the scientific method allow me to solve a question that I have?</p>	<p>Science Night -Question -Hypothesis -Research -Controlled Experiment -Record Data -Analyze Results -Draw Conclusion -Inferencing</p>	<p>Science Night -Understand the steps of the scientific method and how they can be implemented to solve a question in the real world -Design a controlled experiment and test it -Create a lab report -Create a display board to present results of experiment</p>	<p>Science Night -Display board -Lab report -Oral presentation of results</p>	<p>Science Night -Lab packet and rubric (teacher created)</p>	<p>Science Night -iPad</p>
Aug-Sept.	<p>Scientific Method How can the scientific method be used to solve a question?</p> <p>Lab Safety How can I be safe in the lab classroom?</p>	<p>Scientific Method -Question -Hypothesis -Design -Investigate -Analyze -Interpret -Conclusion -Independent Variable -Dependent Variable -Constant -Inferring</p> <p>Lab Safety -First aid kit -Eye wash and chemical shower -Lab safety rules</p>	<p>Scientific Method -Understand the steps of the scientific method and how they can be implemented to solve a questions -Design a controlled experiment -Understand how to take organized notes in science class -Identify the differences in independent and dependent variables and constants</p> <p>Lab Safety -Model appropriate lab safety rules and procedures</p>	<p>Scientific Method -Balloon Rocket Lab -Test (teacher created) -Drake/ Lil Wayne activity cards -Independent/ Dependent variable posters</p> <p>Lab Safety -Behavior within a lab -Lab safety posters -Test (teacher created)</p>	<p>Scientific Method -Materials (teacher created)</p>	<p>Scientific Method -Computer -Elmo -Projector -SMART Board -PowerPoint</p> <p>Lab Safety -Computer -Elmo -Projector -SMART Board -Lab Safety Rules PowerPoint from Teachers Pay Teachers</p>

Grade 8 Science

Diary map is based on the 2016-2017 school year. Information may change year to year. Months are guidelines and items may be done at different times of the year.

Month	Essential Questions	Content	Skills	Assessment	Resources	Technology
Oct. – Nov.	<p>Cells</p> <p>What is the difference between plant and animal cells?</p> <p>How were the first cells on Earth formed?</p> <p>How do you use a microscope?</p> <p>What is the difference between a virus and bacteria?</p> <p>How is photosynthesis and cellular respiration needed in order for life to occur on Earth?</p>	<p>Cells</p> <ul style="list-style-type: none"> -Organelles -Mitochondria -ER -Golgi Body -Vacuole -Cell Wall -Cytoplasm -Cell Membrane -Chloroplasts -Mitochondria -Ribosomes -Nucleus -Lysosomes -Bacterial Cell -Flagella -Origin of Life -Photosynthesis -Respiration 	<p>Cells</p> <ul style="list-style-type: none"> -Understand the difference between the needs of living things and the components of living things -Model the organelles in both plant and animal cells as it relates to a real city -Demonstrate how life began on Earth -Demonstrate understanding of various cell processes 	<p>Cells</p> <ul style="list-style-type: none"> -Test (teacher created) -Cheek and onion cell lab -Growing bacteria lab -The origin of life stories -Cell Cities -Photosynthesis lab -Cellular Respiration lab -Vaccination debate 	<p>Cells</p> <ul style="list-style-type: none"> -Prentice Hall <i>Life Science</i> (2002) -Glencoe <i>Science Life Science</i> (2002) -Glencoe <i>Integrated Life Science</i> (2012) -Materials (teacher created) -Internet Resources 	<p>Cells</p> <ul style="list-style-type: none"> -Computer -Elmo -Projector -SMART Board -PowerPoint -iPad -iCell app
Dec. – Feb.	<p>Genetics/Heredity</p> <p>How are traits passed from parent to offspring?</p> <p>How do cells reproduce sexually and asexually?</p>	<p>Genetics/Heredity</p> <ul style="list-style-type: none"> -Homozygous -Heterozygous -Dominant -Recessive -Phenotype -Genotype -Sex-linked genes -Incomplete Dominance -Interphase -Prophase -Metaphase -Anaphase -Telophase -Cytokinesis -Crossbreeding -Hybrid -Alleles/Trait 	<p>Genetics/Heredity</p> <ul style="list-style-type: none"> -Determine traits and offspring by using Punnett squares -Understand and explain the differences between meiosis and mitosis -Display understanding of mutations and how they can be helpful and a hindrance for organisms 	<p>Genetics/Heredity</p> <ul style="list-style-type: none"> -Quiz (teacher created) -Worksheets (teacher created) -Pipe cleaner lab with mitosis and meiosis -Various Punnett square worksheets -Sesame Street project 	<p>Genetics/Heredity</p> <ul style="list-style-type: none"> -Prentice Hall <i>Life Science</i> (2002) -Glencoe <i>Science Life Science</i> (2002) -Materials (teacher created) -Delta Science Modules: <i>Genes and Proteins</i> 	<p>Genetics/Heredity</p> <ul style="list-style-type: none"> -Computer -Elmo -Projector -SMART Board -PowerPoint -iPad

Grade 8 Science

Diary map is based on the 2016-2017 school year. Information may change year to year. Months are guidelines and items may be done at different times of the year.

Month	Essential Questions	Content	Skills	Assessment	Resources	Technology
		<ul style="list-style-type: none"> -Codominance -Multiple alleles -Mutation -Meiosis -Mitosis 				
March	<p>Systems, Muscular System, Nervous System</p> <p>How do the individual components within your body work together as a group of interacting subsystems?</p>	<p>Systems, Muscular System, Nervous System</p> <ul style="list-style-type: none"> -Tissue -Joint -Organ -Organ Systems -Voluntary Muscle -Involuntary Muscle -Sprains -Fracture -Cramps -Pulls -Break -Flexor Muscle -Extensor Muscle -Muscle fatigue -Cartilage -Ligament -Marrow -Stimuli -Nerve -Neuron -Cell Body -Axon -Dendrite -Frontal Lobe -Temporal Lobe -Brain Stem -Cerebellum -Occipital Lobe -Parietal lobe -Brain 	<p>Systems, Muscular System, Nervous System</p> <ul style="list-style-type: none"> -Demonstrate understanding of how individual components work towards a goal within the body -Identify the types of joints on the body -Explain the difference between a break, sprain, and fracture -Identify various bones on the skeleton -Locate voluntary and involuntary muscles on the body -Identify the causes of muscle fatigue -Explain the difference between flexor and extensor muscles -Explain the reasons why damage to the back can impact the spinal cord -Locate and explain parts of the brain -Explain the brain interacts with other parts of your body when responding to stimuli 	<p>Systems, Muscular System, Nervous System</p> <ul style="list-style-type: none"> -Materials (teacher created) -Hierarchy of systems within the body -Osteoporosis lab -Test (teacher created) -Muscle fatigue lab -Parts of brain research and presentation -Senses lab 	<p>Systems, Muscular System, Nervous System</p> <ul style="list-style-type: none"> -Prentice Hall <i>Life Science</i> (2002) -Glencoe <i>Science Life Science</i> (2002) -Materials (teacher created) 	<p>Systems, Muscular System, Nervous System</p> <ul style="list-style-type: none"> -Computer -Elmo -Projector -SMART Board -PowerPoint -iPad

Grade 8 Science

Diary map is based on the 2016-2017 school year. Information may change year to year. Months are guidelines and items may be done at different times of the year.

Month	Essential Questions	Content	Skills	Assessment	Resources	Technology
		<ul style="list-style-type: none"> -Inter-neuron -Motor-Neuron -Sensor-Neuron -Spinal cord 				
April	<p>Circulatory System, Respiratory System, Digestive System How do the individual components within your body work together as a group of interacting subsystems?</p>	<p>Circulatory System, Respiratory System, Digestive System</p> <ul style="list-style-type: none"> -Valve -Aorta -Vein -Right atrium -Left atrium -Tricuspid Valve -Artery -Left ventricle -Right ventricle -Mitral valve -Aorta -Carbon dioxide -oxygen -lungs -heart -Pharynx -Trachea -Nose -Epiglottis -Larynx -Bronchus -Alveoli -Vital Capacity -Lung Capacity -Residual Volume -Mouth -Esophagus -Liver -Gallbladder -Large Intestine 	<p>Circulatory System, Respiratory System, Digestive System</p> <ul style="list-style-type: none"> -Demonstrate the flow of blood into and out of the heart -Identify areas within circulation where blood is oxygenated and un-oxygenated -Demonstrate how oxygen flows into and out of the body -Demonstrate how each organ in the digestive system has a particular job in order to help break down food for nutrients 	<p>Circulatory System, Respiratory System, Digestive System</p> <ul style="list-style-type: none"> -Walk through the heart QR code -Pig lung -Lunch capacity lab -Stomach model lab -Digestion stories -Kidney lab 	<p>Circulatory System, Respiratory System, Digestive System</p> <ul style="list-style-type: none"> -Prentice Hall <i>Life Science</i> (2002) -Glencoe <i>Science Life Science</i> (2002) -Materials (teacher created) 	<p>Circulatory System, Respiratory System, Digestive System</p> <ul style="list-style-type: none"> -Computer -Elmo -Projector -SMART Board -PowerPoint -iPad

Grade 8 Science

Diary map is based on the 2016-2017 school year. Information may change year to year. Months are guidelines and items may be done at different times of the year.

Month	Essential Questions	Content	Skills	Assessment	Resources	Technology
	<p>work both similarly and differently from humans?</p> <p>Ecosystem What are the similarities in the embryological development in differences that is not evident in the fully formed anatomy?</p> <p>How have life forms changed throughout history and how are those changed evident in fossils?</p> <p>How do genetic variations in a population effect the outcome of that species?</p>	<p>-Various internal organs</p> <p>Ecosystem -Embryo -Fossil Record -Bird Beak</p>	<p>organs -Identify components of a frog’s internal organs</p> <p>Ecosystem -Identify differences and similarities between animals of a different species -Identify and organize fossils according to evolutionary relationships -Identify changes in organism as they evolve, based upon fossils -Hypothesize the reasons for evolutionary relationships in fossils -Hypothesize and identify the need for differences in bird beaks based upon the food that is consumed</p>	<p>Ecosystem -Embryo comparison pictures -Fossil record lab -Bird beak lab</p>	<p>Ecosystem -Labs (teacher created)</p>	<p>Ecosystem -Computer -Elmo -Projector -SMART Board -PowerPoint -iPad</p>