

## Curriculum Map for Living Environment

Unit and time frame	Standards/ Learning Topics	Materials and Resources	Vocabulary/ Skills	Assessments
<b>Unit 1: Nature of Science</b>  <i>Essential Question: How do scientists solve problems?</i>  4 weeks  September	Standard 1: 1.1a. 2.3b 1.2 a. 2.3c 1.3 a 3.1a 1.3 b 3.3 1.4a 3.4a 2.1 3.4b 2.2a 3.4c 2.3a 3.5a  Introduction  Lab Safety  Measuring and Equipment  Scientific Method  Graphing Skills	Lab Equipment and Glassware  Lab materials specific to unit	observation vs. inference  hypothesis  independent and dependent variables  graphing data  conclusion  claim  validity  students create their own experiment	Mystery containers-making detailed observations  Termite Lab Experiment  Making Connections State Lab  Quiz  Test
<b>Unit 2: Chemistry of Life</b>  <i>Essential Question: How do organic and inorganic molecules maintain life?</i>  3 weeks  October	Standard 4: 1.2h 5.1c 5.1f 5.1g 6.1b 6.1c  Elements of life  Organic vs. Inorganic Compounds  Enzymes	Lab Equipment and Glassware  Lab materials specific to unit	element  compound  organic  inorganic  carbohydrate  protein  lipid  nucleic acid  monomer  chemical bond	Organic Compound Mystery  Case Study  Toothpickase Lab  Enzyme Catalase Lab  Quiz  Test

<p><b>Unit 3: Cells</b></p> <p><i>Essential Question: How do cell organelles work together to perform life functions?</i></p> <p>4 weeks</p> <p>November</p>	<p>Standard 4: 1.2a 1.2c 1.2f 1.2g 1.2j 1.3a 5.1b</p> <p>Cell Organelles</p> <p>Types of Cells</p> <p>Cell membrane</p> <p>Transport through the membrane</p>	<p>Lab Equipment and Glassware</p> <p>Lab materials specific to unit</p>	<p>organelle</p> <p>nucleus</p> <p>mitochondria</p> <p>chloroplast</p> <p>lysosome</p> <p>cytoplasm</p> <p>membrane</p> <p>microscope skills</p> <p>osmosis</p> <p>diffusion</p>	<p>Microscope Lab</p> <p>Plant vs. Animal Cell Lab</p> <p>Illustrate a Membrane</p> <p>Osmosis Case Study</p> <p>Diffusion Through a Membrane State Lab</p>
<p><b>Unit 4: Cell Energetics</b></p> <p><i>Essential Question: How do organisms obtain and use energy?</i></p> <p>3 weeks</p> <p>December</p>	<p>Standard 4: 1.2f 5.1a 5.1b 5.1d 5.1e</p> <p>Cellular Respiration</p> <p>Photosynthesis</p>	<p>Lab Equipment and Glassware</p> <p>Lab materials specific to unit</p>	<p>cellular respiration</p> <p>ATP</p> <p>mitochondria</p> <p>anaerobic respiration</p> <p>fermentation</p> <p>photosynthesis</p> <p>chlorophyll</p> <p>chloroplast</p> <p>chromatography</p> <p>guard cell</p> <p>stomate</p>	<p>Candle Model Comparison</p> <p>Mystery of the Seven Deaths Case Study</p> <p>Yeast Respiration Lab</p> <p>Examine Guard Cells under the microscope</p> <p>Paper Chromatography Lab</p>

<p><b>Unit 5: Cell Division</b></p> <p><i>Essential Question: How do living organisms grow and heal?</i></p> <p>3 week</p> <p>January</p>	<p>Standard 1: 1.2a 1.2b</p> <p>Standard 4: 2.1d 2.1e 4.1b 4.1c 5.2i</p> <p>Asexual vs. Sexual Reproduction</p> <p>Cell Division</p>	<p>Lab Equipment and Glassware</p> <p>Lab materials specific to unit</p>	<p>asexual reproduction</p> <p>sexual reproduction</p> <p>offspring</p> <p>cell cycle</p> <p>mitosis</p> <p>cancer cells</p> <p>meiosis</p> <p>gametes</p> <p>diploid haploid</p>	<p>Reproduction Stations</p> <p>Root Tip Mitosis Lab</p> <p>Triffle Mitosis Modeling Lab</p> <p>Pop Bead Meiosis- simulate crossing over</p> <p>Quiz</p> <p>Test</p>
<p><b>Unit 6: Protein Synthesis</b></p> <p><i>Essential Question: How does genetic material code for traits?</i></p> <p>3 weeks</p> <p>February</p>	<p>Standard 1: 1.1b</p> <p>Standard 4: 2.1f 2.1g 2.1h 2.1i 2.1j 2.2d 3.1d</p> <p>DNA structure</p> <p>DNA replication</p> <p>Protein Synthesis</p> <p>Mutation</p>	<p>Lab Equipment and Glassware</p> <p>Lab materials specific to unit</p>	<p>DNA</p> <p>nucleotide</p> <p>double helix</p> <p>semi-conservative replication</p> <p>transcription</p> <p>translation</p> <p>amino acids</p> <p>ribosome</p> <p>mutation</p>	<p>DNA Extraction Lab</p> <p>DNA replication Modeling Lab with Kinex</p> <p>Alien Encounters Activity</p> <p>Identical Twin Activity</p> <p>Mutation Stations</p> <p>Quiz</p> <p>Test</p>

<p><b>Unit 7: Genetics</b></p> <p><i>Essential Question: How can we use probability to predict the inheritance of traits?</i></p> <p><i>Is it ethical to manipulate genetic information?</i></p> <p>4 weeks</p> <p>March</p>	<p>Standard 1 1.1c</p> <p>Standard 4 2.1a 2.1b 2.1c 2.1j 2.1k 2.2b 2.2c 2.2e 3.1d</p> <p>Inheritance and Probability</p> <p>Genetic Engineering</p>	<p>Lab Equipment and Glassware</p> <p>Lab materials specific to unit</p>	<p>heredity</p> <p>recessive, dominant</p> <p>punnett square</p> <p>selective breeding</p> <p>recombinant DNA</p> <p>Genetically modified organism</p> <p>cloning</p>	<p>Trait survey</p> <p>Case Study MSUD</p> <p>Face Variation Lab</p> <p>Gene Therapy Jigsaw</p> <p>Cloning Videos</p> <p>Recombinant DNA models</p> <p>Gel Electrophoresis Lab</p> <p>Quiz</p> <p>Test</p>
<p><b>Unit 8: Evolution</b></p> <p><i>Essential Question: How do organisms change over time?</i></p> <p>4 weeks</p> <p>March-April</p>	<p>Standard 1 1.1b 2.2a 3.1a 3.1b 3.1e 3.1f 3.1g 3.1h 3.1j 3.1k 3.1l 6.2a</p> <p>Evolution by Natural Selection</p> <p>Evidence for Evolution</p> <p>Evolutionary Trees and Classification</p> <p>Dichotomous Keys</p>	<p>Lab Equipment and Glassware</p> <p>Lab materials specific to unit</p>	<p>Charles Darwin</p> <p>natural selection</p> <p>adaption</p> <p>survival of the fittest</p> <p>variation</p> <p>competition</p> <p>extinction</p> <p>homologous structures</p> <p>vestigial structures</p> <p>embryology</p> <p>evolutionary tree</p> <p>dichotomous key</p>	<p>Natural Selection Butterfly Lab</p> <p>Antibiotic Resistance Case Study</p> <p>Beaks of Finches State Lab</p> <p>Evidence Stations</p> <p>Dichotomous Key Activity</p> <p>Quiz</p> <p>Test</p>

<p><b>Unit 9: Ecology</b></p> <p><i>Essential Question: How do organisms interact and depend on each other and their environment?</i></p> <p><i>How have human activities shaped local and global ecology?</i></p> <p>4 weeks</p> <p>April-May</p>	<p>Standard 1 1.1c</p> <p>Standard 4 1.1a 1.1b 1.1d 1.1e 1.1f 6.1a 6.1b 6.1c 6.1d 6.1e</p> <p>Energy Flow through an Ecosystem</p> <p>Interdependence and Biodiversity</p> <p>Carrying Capacity</p> <p>Human Impact</p>	<p>Lab Equipment and Glassware</p> <p>Lab materials specific to unit</p>	<p>abiotic vs. biotic</p> <p>ecosystem</p> <p>interdependent</p> <p>biodiversity</p> <p>food chains and food webs</p> <p>energy pyramid</p> <p>carrying capacity</p> <p>limiting factors</p> <p>symbiosis</p> <p>ecological succession</p> <p>invasive species</p> <p>finite resources</p> <p>renewable energy</p>	<p>Wolf Case Study</p> <p>Create a Food Web</p> <p>Energy Pyramid Lab</p> <p>Carbon Cycle Comic</p> <p>Relationships and Biodiversity State Lab</p> <p>Quiz</p> <p>Test</p>
<p><b>Unit 10: Human Body Systems</b></p> <p><i>Essential Question: How do the body systems coordinate and interact to maintain homeostasis?</i></p> <p>2 weeks</p> <p>May-June</p>	<p>Standard 4 1.2a 1.2b 1.2c 1.2d 1.2e 1.2j 4.1a 4.1c 4.1d 4.1e 4.1f 4.1g 4.1h 5.2a</p> <p>Homeostasis</p> <p>Body Systems</p>	<p>Lab Equipment and Glassware</p> <p>Lab materials specific to unit</p>	<p>homeostasis</p> <p>negative feedback mechanism</p> <p>digestive</p> <p>circulatory</p> <p>respiratory</p> <p>nervous</p> <p>endocrine</p> <p>reproductive</p> <p>immune</p>	<p>Keeping a Balance Activity</p> <p>Frog Dissection</p> <p>Blood Typing Lab</p> <p>Urinalysis Lab</p> <p>Immune System Comic</p> <p>Quiz</p>