

Curriculum Map/Pacing Guide

School: HMS

Grade Level: 8th

Subject: Changing Environment

Ky Standard	Content/Topic	Skill/Time Period	Assessment
HS-LS2-7 HS-ESS2-2 HS-ESS3-2 HS-ESS3-3 HS-ESS3-4 HS-ESS2-5 <u>Learning Targets:</u> A. I can describe what the environment is. B. I can explain what sustainability is.	Pollution (Water, Land) <u>Essential Questions:</u> A. What is the Environment? B. What three factors make the most impact on our environment? C. What is pollution? D. What are the three main areas of the planet that are the most polluted? Why? E. What impact have we, humans, made on our environment? F. What is water availability? G. What is crop rotation? H. What is a commodity?	Continue working on region project. A. Review information from week 1-3. B. Videos "A Tale of Two Cities-Air Quality," and "Historical Perspective on Air Pollution." C. Farm to School program (6 weeks, one day a week) Reda Fugate D. Read and summarize article, "Industrialization and its Backlash: Focus on Climate Change and its Consequences." (first writing piece) Complete a set of questions that go with the article. E. What is air pollution? Activity. Lab experiment, design and carry out.	A. Science Notebook. B. Articles, on pollution, summarized and submitted to Google Classroom. C. Classroom discussion/participation. D. Quizzes E. Flow Chart (<i>Killing the Colorado</i>) F. Unit Test G. PowerPoint H. Experiment (Testing water samples, soil samples) I. Two writing pieces J. TCT K. Argumentative paper on GMO's. L. Study Island Assignments M. Most Wanted Poster (GMO Organism)

<p>F. I can explain how contaminants in the water, air, and soil can and will cause health problems.</p> <p>G. I can explain how industrialization contributed to climate change.</p> <p>H. I can describe how land pollution is destroying habitats, ecosystems, and species.</p> <p>I. I can explain how crop rotation helps the environment.</p> <p>J. I can explain what a commodity is.</p> <p>K. I can cite textual evidence to summarize an article on climate change.</p> <p>L. I can describe the importance of grains.</p> <p>M. I can describe the importance of dairy products.</p> <p>N. I can describe the importance of proteins.</p>	<p>I. What is sustainability?</p> <p><u>Unit Vocabulary:</u></p> <p>A. Environment</p> <p>B. Species</p> <p>C. Pollution</p> <p>D. Sustainability</p> <p>E. Ecosystems</p> <p>F. Contaminants</p> <p>G. Fallow</p> <p>H. Habitats</p> <p>I. Natural Resources</p> <p>J. Commodity</p> <p>K. Ecosystem Service</p> <p>L. Food web</p> <p>M. Food Chain</p> <p>N. Disturbance</p> <p>O. Primary Consumer</p> <p>P. Secondary Consumer</p> <p>Q. Invasive Species</p> <p>R. GMO</p> <p>S. Genetic Engineering</p> <p>T.</p>	<p>F. Assessment over air pollution.</p> <p><u>Week 11-18:</u></p> <p>A. What is land pollution? Notes. Bill Nye Pollution and Solutions video.</p> <p>B. Monitoring Ecosystems (Know Atom)</p> <p>C. Changing Food Webs (Know Atom)</p> <p>D. Lake Michigan Food Web Investigation (Know Atom) Ecosystem Disturbance</p> <p>E. Changing Shoreline</p> <p>F. PowerPoint research over how shorelines have changed in the last 200 years.</p> <p>G. Create graphs showing the change in shorelines. Compare/contrast different shorelines (Use graphing calculators to gather data)</p> <p>H. Designing Solutions (Know Atom)</p> <p>I. Disappearing Shorelines</p>	
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<p>O. I can describe the importance of fruits/vegetables.</p> <p>P. I can describe what a fossil is.</p> <p>Q. I can describe the different types of fossils</p> <p>R. I can describe the conditions needed for an organism to become a fossil.</p> <p>S. I can describe Earth History.</p> <p>T. I can create a timeline of Earth's history.</p>		<p>J. Waves in the Ocean (Know Atom)</p> <p>K. Presentations of PowerPoint</p> <p>L. Class discussion</p> <p>M. Review material covered in unit</p> <p>N. Summative Test over unit.</p> <p>O. Intro. to fossils.</p> <p>P. Create a timeline of earth history. Student choice.</p> <p>G.</p>	
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		<p>Continue working on region project.</p> <ul style="list-style-type: none"> H. Review information from week 1-3. I. Videos "A Tale of Two Cities-Air Quality," and "Historical Perspective on Air Pollution." J. Farm to School program (6 weeks, one day a week) Reda Fugate K. Read and summarize article, "Industrialization and its Backlash: Focus on Climate Change and its Consequences." (first writing piece) Complete a set of questions that go with the article. L. What is air pollution? Activity. Lab experiment, design and carry out. M. Assessment over air pollution. <p><u>Week 11-18:</u></p> <ul style="list-style-type: none"> Q. What is land pollution? Notes. Bill Nye Pollution and Solutions video. R. Monitoring 	
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		<p>X. Designing Solutions (Know Atom)</p> <p>Y. Disappearing Shorelines</p> <p>Z. Waves in the Ocean (Know Atom)</p> <p>AA. Presentations of PowerPoint</p> <p>BB. Class discussion</p> <p>CC. Review material covered in unit</p>	

		DD. Summative Test over unit. EE. Intro. to fossils. FF. Create a timeline of earth history. Student choice.	
Kentucky Standard	Content/Topic	Skill/Time Period	Assessment
HS-LS2-5 HS-LS2-6 HS-LS2-7 HS-LS2-8 HS-LS4-5 HS-LS4-6 <u>Learning Targets:</u> A. I can describe what a cell is. B. I can describe what the two categories of cells are. C. I can describe what an organelle is.	Biological Evolution: Unity and Diversity (18 Weeks) <u>Essential Questions:</u> A. What is a cell? B. How are simple forms of life similar to more complex forms of life? How are they different? C. What are the six characteristics of all living things? D. What are cellular processes?	<u>Week 1-2:</u> A. Pre-test on cells B. Parts of a microscope lab. C. Read Section 1 in the Know Atom Lab Manual as a class. D. Comparing cells activity (Onion cells versus celery cells) E. Lab write up after all observations are made. <u>Week 3-4:</u> A. Review cells. B. Yeast Cell Respiration.	A. Science Notebook B. Quizzes C. Unit Test D. Labs E. Exit Slips F. Articles: extinction and diversity submitted to Google Classroom G. Activities H. Research Project

<p>D. I can describe the importance of a microscope and the parts of a microscope.</p> <p>E. I can list and describe the six characteristics all living things have in common.</p> <p>F. I can describe why respiration is important.</p> <p>G. I can describe what an adaptation is and why adaptations are important.</p> <p>H. I can describe what carrying capacity is and how it works.</p> <p>I. I can describe how evolution and diversity are related.</p> <p>J. I can describe how bacteria can cause mutations and adaptations to occur in organisms.</p> <p>K. I can describe how DNA and mutations are related.</p> <p>L.</p>	<p>E. What is cellular respiration?</p> <p>F. How does carbon dioxide effect organisms?</p> <p>G. What is protein synthesis?</p> <p>H. What is diversity?</p> <p><u>Unit Vocabulary:</u></p> <p>A. Cell</p> <p>B. Prokaryote</p> <p>C. Eukaryote</p> <p>D. Animal</p> <p>E. Cell Membrane</p> <p>F. Chloroplasts</p> <p>G. Cytoplasm</p> <p>H. Organelle</p> <p>I. Organism</p> <p>J. Mitochondria</p> <p>K. Nucleus</p> <p>L. Nutrients</p> <p>M. Plant</p> <p>N. Protein</p> <p>O. Cellular Respiration</p> <p>P. Organ</p> <p>Q. Organ System</p> <p>R. Tissue</p> <p>S. Heredity/Genetics</p> <p>T. DNA/RNA</p> <p>U. Amino Acid</p>	<p>C. Create digital graphs to show data collection (TI calculators)</p> <p>D. Test over cells/cellular processes.</p> <p><u>Week 5-10:</u></p> <p>A. What is Biological Diversity? Notes</p> <p>B. Poor Frank (Frank is a fish) activity. Study.com</p> <p>C. Adaptation activity. T-Chart (Physical vs Behavioral Adaptations)</p> <p>D. Learning from Extinction: Ill-Tempered Parrots and Warty Pigeons www.shareitscience.com</p> <p>E. Design a Fantasy Creature STEM Challenge</p> <p>F. Think Like Darwin Activity (Students examine organisms from different locations, draw conclusions and make generalizations.)</p> <p>G. Speciation Lab using skittles.</p> <p>H. What Am I? Biodiversity game.</p>	
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	<p>V. Codon</p> <p>W. Gene</p> <p>X. Nucleotide</p> <p>Y. Trait</p> <p>Z. Asexual Reproduction</p> <p>AA. Cell division</p> <p>BB. Chromosome</p> <p>CC. Daughter cell</p> <p>DD. Meiosis</p> <p>EE. Mitosis</p> <p>FF. Replicate</p> <p>GG. Sexual Reproduction</p> <p>HH. Mutation</p> <p>II. Adaptation</p>	<p><u>Week 11-18:</u></p> <p>A. Notes on evolution (science and creationism)</p> <p>B. What is evolution? Video</p> <p>C. Notes on natural selection.</p> <p>D. Evolution Organism Research Project. Students will conduct research on an organism and create a presentation in which they answer the following questions: 1. What are some of the most recent common ancestors of the organism you are researching? 2. Search for the phylogenetic tree of the organism. 3. Analyze the phylogenetic tree and include a discussion about the shared characteristics. 4. Identify and cite evidence for one type of speciation that occurred in the evolutionary history of organism. 5.</p>	
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		<p>What types of genetic variation exist in individuals in the species due to mutations? 6.</p> <p>What competition exists for limited resources for your organism?</p> <p>E. Research paper on how antibiotics have changed life expectancy.</p> <p>F. How have bacteria and virus's ben around for millions of years, activity.</p>	

