



## Environmental Science Pacing Guide

**Cross-cutting Concepts:** Systems and System Models, Scale, Proportion, and Quantity, Energy and Matter, Stability and Change, Cause and Effect

### Rhythms and Cycles

Nine weeks for a traditional schedule and 4.5 weeks for a block schedule

Anchoring Phenomenon	Standard	Instructional Segment	Disciplinary Core Ideas	Science and Engineering Practices	Instructional Notes
<a href="#">Time lapse-Photosynthesis seen from space</a>	<b>SEV1.</b> c, e <b>SEV2.</b> a, b	<a href="#">Rhythms and Cycles</a> (on TRL)	Frameworks of K-12 Science Education: <i><b>By the end of grade 12:</b></i> <b>HS-LS2-7</b> Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.  <b>HS-LS4-6</b> Create or revise a simulation to test a solution to mitigate adverse impacts of human activity on biodiversity.  <b>HS-ESS2-4</b> Use a model to describe how variations in the flow of energy...result in changes in climate.  <b>HS-ESS3-1</b> Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.	<ul style="list-style-type: none"> <li>● Using mathematics and computational thinking</li> <li>● Developing and using models</li> <li>● Engaging in argument from evidence</li> <li>● Analyzing and interpreting data</li> </ul>	By the end of this unit, students are using the following language in their speaking and writing: <ul style="list-style-type: none"> <li>● Climate change</li> <li>● Greenhouse gases</li> <li>● Greenhouse effect</li> <li>● Ozone depletion</li> <li>● Ocean acidification</li> <li>● El Nino</li> <li>● La Nino</li> <li>● Milankovitch</li> <li>● Cycles of Carbon, Nitrogen, Hydrology, Phosphorus</li> </ul>

			<p><b>HS-ESS3-2</b> Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.</p> <p><b>HS-ESS3-4</b> Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.</p> <p><b>HS-ESS3-5</b> Analyze results from global climate models to make and evidence-based forecast of the current rate of global or regional climate change and associated future impacts to biodiversity and human life.</p> <p><b>HS-ESS3-6</b> Illustrate the relationships among Earth's systems and how those relationships are being modified due to human activity.</p>		
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This instructional segment will connect to the culminating performance task of designing and defending a personal sustainability plan.