


# Three Dimensional Learning Plan: **HS-LS4-5**

Grade Level: **High School**






Title	HS-LS4-5 - Loss of Species	Phenomenon/Problem	Two Species or One
Designed by	Jessica Poseluzny and Lisa Reece	Course(s)	Living Environment
Brief Learning Description	Emphasis is on determining cause and effect relationships for how changes to the environment such as deforestation, fishing, application of fertilizers, drought, flood and the rate of change of the environment affect distribution or disappearance of traits in species.		
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Desired Results		
Performance Expectation(s)		
<b><a href="#">HS-LS4-5: Environmental Change - Speciation and Extinction</a></b> Evaluate the evidence supporting claims that changes in environmental conditions may result in: (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species. (Cause and Effect)		
Summative Assessment		
Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<input type="checkbox"/> Analyzing & Interpreting Data <input type="checkbox"/> Asking Questions <input type="checkbox"/> Constructing Explanations <input type="checkbox"/> Defining Problems <input type="checkbox"/> Designing Solutions <input type="checkbox"/> Developing & Using Models <input checked="" type="checkbox"/> <b>Engaging in Argument from Evidence</b> <input type="checkbox"/> Mathematics & Computational Thinking <input type="checkbox"/> Obtain, Evaluate, Communicate Information <input type="checkbox"/> Planning & Carrying Out Investigations	<input checked="" type="checkbox"/> <b>LS4.C: Adaptation</b>	<input checked="" type="checkbox"/> <b>Cause &amp; Effect</b> <input type="checkbox"/> Energy & Matter <input type="checkbox"/> Patterns <input type="checkbox"/> Scale, Proportion & Quantity <input type="checkbox"/> Stability & Change <input type="checkbox"/> Structure & Function <input type="checkbox"/> Systems & System Models



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Activity 1			
 Phenomenon or Problem	 What will they do? The three dimensions woven together into a single learning performance.	 Why is this important? How does this activity help build understanding of the anchoring phenomenon.	 How will they do it? Graphic organizers, protocols, scaffolds, labs, mini-lesson, student discourse, etc.
Video depicting overfishing, fertilizer usage or deforestation and how it is affecting animal species.	Students will brainstorm by <b>asking questions</b> on the <b>effects</b> of not cutting down trees or other negative ecological issues and focus on environmentally friendly practices,	Get students concerned about the loss of species due to human activity.	Have them in groups with a graphic organizer listing the alternative practices to their ecological issue such as deforestation.
 <b>Formative Assessment</b> What information are you collecting to know that they met the target?		<ul style="list-style-type: none"> <li>Create a poster showing alternative practices to the ecological / deforestation problem</li> </ul>	






Activity 2			
 Phenomenon or Problem	 What will they do? The three dimensions woven together into a single learning performance.	 Why is this important? How does this activity help build understanding of the anchoring phenomenon.	 How will they do it? Graphic organizers, protocols, scaffolds, labs, mini-lesson, student discourse, etc.
Video on the Galapagos Finch Evolution <a href="https://thewonderofscience.com/phenomenon/2018/5/13/galapagos-finch-evolution">https://thewonderofscience.com/phenomenon/2018/5/13/galapagos-finch-evolution</a>	Students will <b>model</b> the behaviors of animal feeding and explore the survival of an animal species to maintain the <b>stability of an ecosystem</b> .	Get students concerned with the continuation / loss of a species by having them ask <b>good questions</b> .	Natural selection using teddy grahams (happy versus sad bears) lab
 <b>Formative Assessment</b> What information are you collecting to know that they met the target?		<ul style="list-style-type: none"> <li>Create a data table and graph illustrating on how natural selection affects a population through success of generations.</li> </ul>	






## Activity 3









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 <p>Phenomenon or Problem</p>	 <p>What will they do? The three dimensions woven together into a single learning performance.</p>	 <p>Why is this important? How does this activity help build understanding of the anchoring phenomenon.</p>	 <p>How will they do it? Graphic organizers, protocols, scaffolds, labs, mini-lesson, student discourse, etc.</p>
<p>Pictures of animals and their DNA</p>	<p>Students will <b>investigate patterns</b> in structural and molecular differences in order to determine <b>relationships</b> in organisms.</p>	<p>Get students concerned with relationships of organisms through structural and molecular evidences</p>	<p>Relationships and Biodiversity Lab stations</p>
 <p><b>Formative Assessment</b> What information are you collecting to know that they met the target?</p>		<ul style="list-style-type: none"> <li>Complete the data sheet and associated questions.</li> </ul>	

Activity 4			
 <p>Phenomenon or Problem</p>	 <p>What will they do? The three dimensions woven together into a single learning performance.</p>	 <p>Why is this important? How does this activity help build understanding of the anchoring phenomenon.</p>	 <p>How will they do it? Graphic organizers, protocols, scaffolds, labs, mini-lesson, student discourse, etc.</p>
<p>Two species or one?</p>			
 <p><b>Formative Assessment</b> What information are you collecting to know that they met the target?</p>		<ul style="list-style-type: none"> <li></li> </ul>	

Activity 5			
 <p>Phenomenon or Problem</p>	 <p>What will they do? The three dimensions woven together into a single learning performance.</p>	 <p>Why is this important? How does this activity help build understanding of the anchoring phenomenon.</p>	 <p>How will they do it? Graphic organizers, protocols, scaffolds, labs, mini-lesson, student discourse, etc.</p>
 <p><b>Formative Assessment</b> What information are you collecting to know that they met the target?</p>		<ul style="list-style-type: none"> <li></li> </ul>	
 <p><b>Summative Assessment</b> What information are you collecting to know that they met the target?</p>		<ul style="list-style-type: none"> <li></li> </ul>	



## Materials / Resources

## Differentiation / Modifications



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