

Three Dimensional Learning Plan:

Grade Level:

Title	Apples	Phenomenon/Problem	Unknown Apple Parent
Designed by	Paul Andersen	Course(s)	Katy - Elementary Training
Brief Learning Description	Students will identify the unknown parent of an offspring based on patterns of similarities and differences.		

Desired Results

Texas Essential Knowledge and Skills for Science

KNOWLEDGE:

(10) Organisms and environments. The student knows that organisms undergo similar life processes and have structures and behaviors that help them survive within their environment. The student is expected to:

(A) explore how structures and functions enable organisms to survive in their environment; (B) explore and describe examples of traits that are inherited from parents to offspring such as eye color and shapes of leaves and behaviors that are learned such as reading a book and a wolf pack teaching their pups to hunt effectively; and

(C) explore, illustrate, and compare life cycles in living organisms such as beetles, crickets, radishes, or lima beans.






PRACTICE: Construct an Explanation Based on Evidence






THEME: Patterns of Similarities and Differences





Summative Assessment - (The Wonder of Science [assessments](#))

[Possible Puppy Parents](#)






What skills (practices) will students need to learn?	What recurring themes and concepts will students need to learn?	What science concepts (knowledge) will students need to learn?	What relevant or local phenomenon can be used to teach these concepts?
<p>Ask questions</p> <p>Analyze and interpret data</p> <p>Engage in argument from evidence.</p>	<p>Structures and Function</p> <p>Patterns of</p> <p>Similarities (inheritance) and Diversity</p>	<p>Organisms</p> <p>Structures</p> <p>Functions</p> <p>Inheritance</p> <p>Traits</p> <p>Life Cycles</p>	<p>Various bird beaks in local ecosystems.</p> <p>Monarch butterfly structure and functions</p> <p>Plant similarities and differences.</p>







Activity 1			
 Phenomenon or Problem	 What will they do? The three dimensions woven together into a single learning performance. (LP Generator)	 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.
Apple growth - seed to tree	<p>Students investigate patterns in a plant growing and producing a fruit.</p> <p>Students develop structure and function models for a plant growing and producing a fruit.</p>	<p>Anchor - Katie Prairie Preserve</p> <p>Students will learn how important plant structures are required for growth and development. Plants form the basis for all healthy ecosystems.</p>	<p>Mini-lesson on structures and functions (fork).</p> <p>Watch the apple time-lapse</p> <p>Have the students develop a model of Structure / Function</p>
 Formative Assessment What information are you collecting to know that they met the target?		Teacher surveys students models and gives feedback on	

Activity 2			
 Phenomenon or Problem	 What will they do? The three dimensions woven together into a single learning performance. (LP Generator)	 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.
Plant grafting	<p>Students will obtain information about patterns of inheritance through grafting.</p>	<p>Anchor - Katie Prairie Preserve</p>	<p>Students will watch a short video on grafting apples.</p> <p>Students will receive information on parents and offspring in apples.</p>
 Formative Assessment What information are you collecting to know that they met the target?			

Activity 3			
 Phenomenon or Problem	 What will they do? The three dimensions woven together into a single learning performance. (LP Generator)	 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.
Apple with Three Possible Parents.	<p>Students will investigate observational patterns in offspring and possible apple parents.</p>	<p>Anchor - Katie Prairie Preserve</p>	Type Here

 Formative Assessment What information are you collecting to know that they met the target?	
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Activity 4			
 Phenomenon or Problem	 What will they do? The three dimensions woven together into a single learning performance. (LP Generator)	 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.
Apple with Three Possible Parents.	Students will analyze and interpret patterns of similarities and differences in offspring and possible apple parents.	Anchor - Katie Prairie Preserve	Type Here
 Formative Assessment What information are you collecting to know that they met the target?			

Activity 5			
 Phenomenon or Problem	 What will they do? The three dimensions woven together into a single learning performance. (LP Generator)	 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.
Apple with Three Possible Parents.	Students will engage in argument from evidence using patterns of similarities and differences in offspring and possible apple parents.	Anchor - Katie Prairie Preserve	Type Here
 Formative Assessment What information are you collecting to know that they met the target?			
 Summative Assessment What information are you collecting to know that they met the target?	Possible Puppy Parents		

Materials / Resources

Vocabulary

Mini Lessons

Graphic Organizers

Reflections: Type Here			
	No	Partial	Yes
1. The assessment contains a phenomenon (science) or a problem (engineering)			
2. The prompts match the Science and Engineering Practice (SEP) and engage students in sense making.			
3. The stimuli have multiple and sufficient information needed to utilize the SEP . (e.g. multiple data sets to analyze)			
4. The prompts elicit observable understanding of the Disciplinary Core Idea (DCI) .			
5. The prompts explicitly mention the Crosscutting Concept (CCC) .			
6. The prompts include language (i.e. bullets) from grade appropriate progressions. (SEP) (DCI) (CCC)			
7. The graphic organizers provide space for the observable features (e.g. 1, 2, 3...) in the evidence statement. (e.g. claim, evidence and reasoning)			
8. The entire assessment contains information that is scientifically accurate and properly attributed. (e.g. don't make up data and include the source)			
9. The prompts point in the direction of explaining a phenomenon (science) or designing a solution (engineering).			
10. The phenomenon or problem is authentic, interesting, and requires students to figure something out.			
11. The phenomenon or problem is novel to show the transfer of knowledge. (i.e. not in the unit)			