


Three Dimensional Learning Plan: K-PS2-1

Grade Level: **Kindergarten**






Title		Phenomenon/Problem	
Designed by		Course(s)	
Brief Learning Description			
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Desired Results			
Performance Expectation(s)			
<u>K-PS2-1: Pushes, Pulls, and Motion</u> Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object. (Cause and Effect)			
Summative Assessment			
Assessment: Investigating Soccer K-PS2-1: Evidence Statement			
What skills (practices) will students need to learn?	What thinking concepts will students need to learn?	What science concepts will students need to learn?	What relevant or local phenomenon can be used to teach these concepts?
-Carry out investigation -Collaboration -Coordination	-Cause & Effect	-Force & Motion -Pushing & Pulling -Hard/Soft Push & Pull	-Waves -wind -sport (golf; bowling; baseball; croquet) -recess play



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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.
Caine's Arcade	Students will define a problem requiring a structure that uses pushes and pulls .	<p>This is the anchor problem for the unit.</p> <p>Get students excited for the storyline.</p>	<p>Show video of Caine's Arcade.</p> <p>Students ask questions to clearly define the problem.</p> <p>Share games that they are familiar with that kinesthetic (push & pulls) (not videos)</p> <p>Show them the purpose of the design problem. Show supplies that they will have to use at the end - cardboard, tape.</p>
 Formative Assessment What information are you collecting to know that they met the target?		Students define the problem including the supplies that they can use.	






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.
Complex motion phenomenon with push and pull (Dominoes with string for pull)	Students will analyze patterns in the motion of objects in the phenomenon .	<p>It allows students to better understand the motion involved in the phenomenon.</p> <p>Students will use push and pull motion in their final design.</p>	<p>Mini-lesson on cause and effect where the phenomenon is broken into its parts. Domino 1, then Domino 2, then the string pulling the domino.</p> <p>Mini-lesson on evidence - anything that we see.</p>
 Formative Assessment What information are you collecting to know that they met the target?		Students organize the motion as being a push or a pull using a T-chart.	






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>Images of motion about to happen.</p>	<p>Students will construct an explanation of how the motion will cause a change the stationary object.</p>		<p>Show image. Students make predictions about what will happen.</p> <p>Students investigate what would happen</p>
 <p>Formative Assessment What information are you collecting to know that they met the target?</p>			

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>Students will carry out an investigation into the causes of a push and pull.</p>		
 <p>Formative Assessment What information are you collecting to know that they met the target?</p>			

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>Students will design a simple solution using pushes and pulls that will change the motion of a stationary object.</p>		
 <p>Formative Assessment What information are you collecting to know that they met the target?</p>			





Summative Assessment

What information are you collecting to know that they met the target?



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Materials / Resources

Vocabulary

Object

Cause and Effect

Push

Pull

Strength (e.g. Harder, softer)

Direction (e.g. Which way?)

Motion

Mini Lessons

[Causation Level 2 - Testing Causes Mini-Lesson](#)

[Causation Level 2 - Testing Causes Thinking Slides](#)

Graphic Organizers

[The Effects of Pushes and Pulls Graphic Organizer \(Student Version\)](#)

[The Effects of Pushes and Pulls Graphic Organizer \(Teacher Version\)](#)

[Phenomena Observation Graphic Organizer](#)

[Questioning Graphic Organizer](#)

[Modeling Graphic Organizer](#)

[Planning an Investigation Organizer](#)

[Investigation Evidence Organizer](#)

[Engaging in Argumentation Organizer](#)



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