

Performance Expectations

HS-PS1-1: Valence Electrons and Properties of Elements

Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

HS-PS1-3: Electrical Forces and Bulk Scale Structure

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles. (Patterns)

HS-PS2-6: Molecular-Level Structure of Designed Materials

Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials. (Structure and Function)

Assessments

HS-PS1-1 - [Ordering Reactivity](#)

HS-PS1-3 - [Testing SmartKlean's Claims](#)

HS-PS2-6 - [The Most Prescribed Drugs in the World](#)

Backward Design Elements		
What new skills (practices) will students need to learn?	What thinking concepts will students need to learn?	What science concepts will students need to learn?
<u>HS-PS1-3</u> Identify the phenomenon under investigation. Model intermolecular forces Plan and conduct an investigation Refine the design based on evidence Evaluate methodology and identify limitations of the data gathered in the investigation.	<u>HS-PS1-3</u> Patterns at one scale properties (macroscopic) are caused by intermolecular forces (intermolecules)	<u>HS-PS1-3</u>
<u>HS-PS1-1</u>	<u>HS-PS1-1</u>	<u>HS-PS1-1</u>
<u>HS-PS2-6</u>	<u>HS-PS2-6</u>	<u>HS-PS2-6</u>

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 Phenomenon or Problem	 Learning Performance - 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.	 Learning Experience - How will they do it? Graphic organizers, protocols, scaffolds, labs, mini-lesson, student discourse, etc.
Gecko Water striders, Post-Its, Tape - Things that stick	Students will ask questions about the structure and function of the gecko feet . Students will investigate structures of things that stick . Students will analyze patterns in data of the gecko sticky feet and the things that stick .	Generate excitement about the unit - what we learn is connected to life. Students are learning forces between materials and by understanding those we can explain how materials work. Thinking about how structures determine function.	
Evidence of Student Learning - What information are you collecting to know that they met the target?		Collection of questions and designs	
Liquid on pennies	Students will investigate patterns in the liquid on pennies investigation. Students will model patterns of scale in the liquid on pennies investigation. Students will construct an explanation for		Update model of gecko foot?
Evidence of Student Learning - What information are you collecting to know that they met the target?			
Various surface area stations.	Students will plan and carry out investigation on the various intermolecular forces phenomenon (patterns) . Students will analyze patterns in data from the various intermolecular		

	forces phenomenon. Students will develop scale models on the various intermolecular forces phenomenon. (patterns)		
Evidence of Student Learning - What information are you collecting to know that they met the target?		Completed graphic organizer	
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