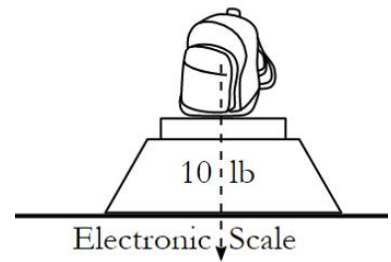
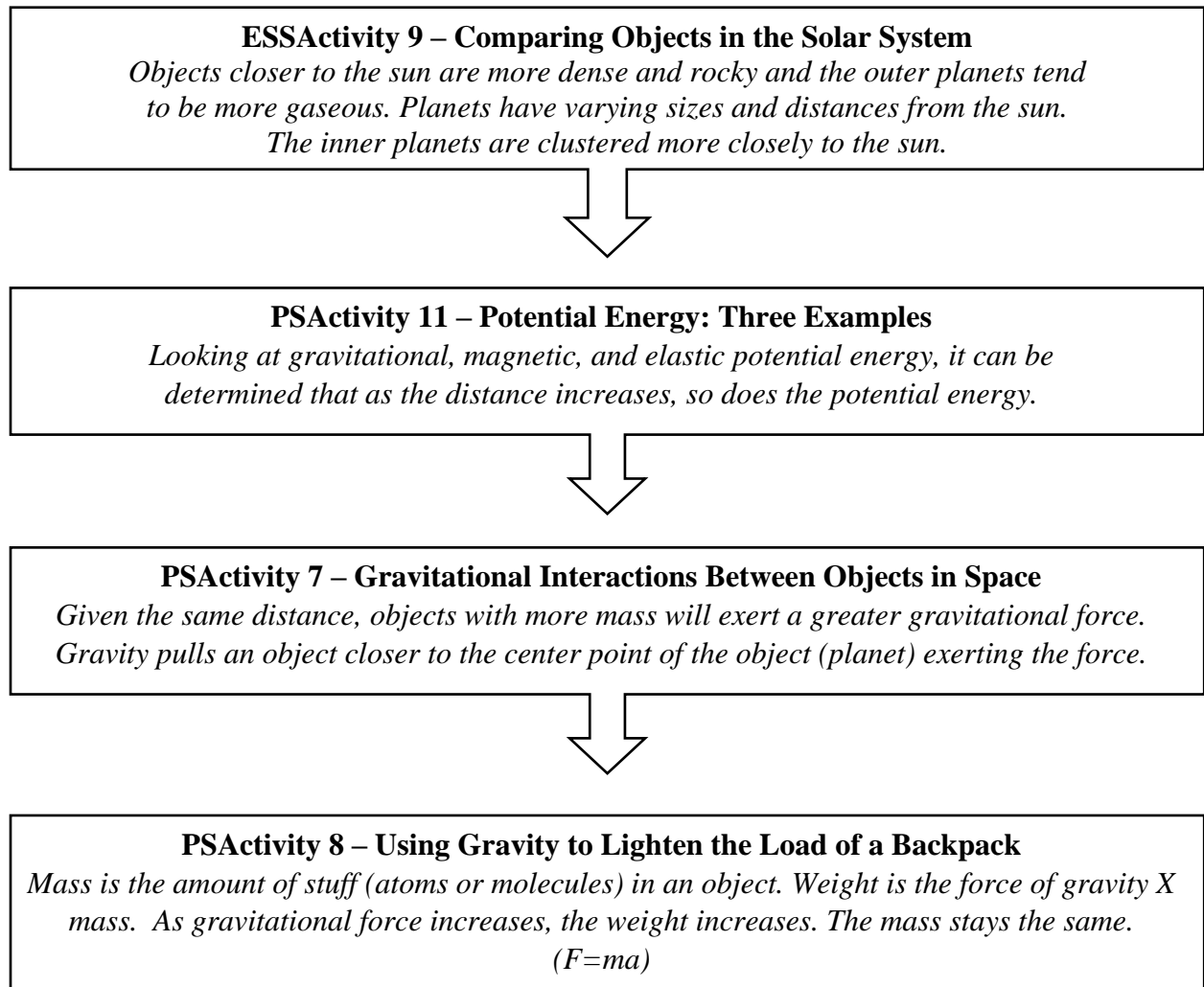


**Anchoring phenomenon:  
Carrying a backpack from Earth to  
Mercury – What happens to its weight?  
Why?**



POGIL<sup>®</sup> Activities that support the anchoring phenomenon:



<b>POGIL® Activity</b>	<b>NGSS Performance Expectation</b>	<b>Learning Outcomes</b>
ESSActivity 9	<p><b>MS-ESS1-3</b> Analyze and interpret data to determine scale properties of objects in the solar system.</p>	<p><b>Comparing Objects in the Solar System</b></p> <ol style="list-style-type: none"> <li>1. I can describe the relative distances between the planets and the relative sizes of the planets and their moons, based on appropriate scale diagrams.</li> <li>2. I can compare and contrast the interior structures of solar system objects, based on a scale diagram of these solar system objects.</li> <li>3. I can assess various models of solar system objects to determine which model is most useful for answering a specific question about those objects.</li> </ol>
PSActivity 11	<p><b>MS-PS3-2</b> Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system</p>	<p><b>Potential Energy: Three Examples</b></p> <ol style="list-style-type: none"> <li>1. I can describe how three types of potential energy change in systems of objects.</li> <li>2. I can create a model to illustrate how the potential energy of a system changes as the distances between interacting objects in the system change.</li> </ol>
PSActivity 7	<p><b>MS-PS2-4</b> Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.</p>	<p><b>Gravitational Interactions Between Objects in Space</b></p> <ol style="list-style-type: none"> <li>1. I can draw a diagram to show the direction of gravitational forces for any planet in space.</li> <li>2. I can describe how the total mass of a system of two planets affects the gravitational force between those planets.</li> </ol>
PSActivity 8	<p><b>MS-PS2-4</b></p>	<p><b>Using Gravity to Lighten the Load of a Backpack</b></p>

Anchoring Phenomenon: Backpack on Earth and Mercury 7/16/22

	<p>Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.</p>	<p>1. I can describe the difference between weight and mass. 2. I can use a table of gravitational forces to predict the weight of an object on another planet if I know the object's weight on Earth.</p>
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