

DRAFT - DO NOT COPY - FOR DISCUSSION/FEEDBACK PURPOSES ONLY

<p>Explore: What hands-on/minds-on common experience(s) will you provide for students?</p>	<p>1. Place a few drops of food coloring into the beaker of water so you will be able to tell it apart from the other liquids. (This is not necessary if you are using dark corn syrup.)</p> <p>2. Carefully pour each of the liquids into a 600 ml beaker or a large jar. Let them settle.</p> <p>3. What happened? Did the three liquids mix together or separate into layers? Which liquid is at the bottom of the jar? Which is at the top?</p>	<ul style="list-style-type: none"> • 3 150 ml beakers (or use glass jars or clear plastic cups) • 600 ml beaker (or use a large jar) • Water • Corn syrup • Vegetable oil • Food coloring • Several small objects - raisins, paperclips, pennies, small corks, etc. 	<p>Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence, using fair tests in which variables are controlled and the number of trials considered.</p>	<p>PS1.A: Structure and Properties of Matter</p> <p>ETS1.B: Developing Possible Solutions</p>	<p>Systems & System Models</p> <p>Structure & Function</p> <p>Cause & Effect</p> <p>Scale, Proportion & Quantity</p>
<p>Explain: How will you help students connect their exploration to the concept/topic under investigation?</p>	<p>Bring the class back as a whole group to discuss their findings. Discuss the term density and devise a definition as a class based on their observations.</p>		<p>Constructing Explanations and Designing Solutions: Generate and compare multiple solutions to a problem based on how well they meet the criteria and constraints of the design problem. (3-5-ETS1-2)</p> <p>Carrying Out Investigations: Make observations and/or measurements to produce data to serve as the basis for evidence for an explanation of a phenomenon or test design solution.</p> <p>Engaging in Argument from Evidence: Engaging in argument from evidence in 3–5 builds on K–2 experiences and progresses to critiquing the scientific explanations or solutions proposed by peers by citing relevant evidence about the natural and designed world(s).</p>	<p>PS1.A: Structure and Properties of Matter</p> <p>ETS1.B: Developing Possible Solutions §</p>	<p>Patterns</p> <p>Cause & Effect</p>

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			Distinguish among facts, reasoned judgment based on research findings, and speculation in an explanation.		
<i>Evaluate: How will students demonstrate their mastery of the learning objective(s)?</i>	<p>Answer Questions in Science Notebook or Create an exit slip from the following questions:</p> <p>How did your observations correlate to your predictions? Students are beginning to discern the definition of density, so the liquid with the most density will be at the bottom of the jar, the next on top of that, and the least dense floats on the very top.</p>		Analyzing and Interpreting Data: Compare and contrast data collected by different groups in order to discuss similarities and differences in their findings.	<p>PS1.A: Structure and Properties of Matter</p> <p>ETS1.B: Developing Possible Solutions §</p>	<p>Patterns</p> <p>Cause & Effect</p>
<i>Extend: How will students deepen their conceptual understanding through use in new context?</i>	<p>Students may want to recreate this investigation with other liquids to observe the various conclusions that may be derived a change in density</p>		<p>Analyzing and Interpreting Data</p> <p>Planning & Carrying Out an Investigation</p>	<p>ETS1.C: Optimizing the Design Solution</p>	<p>Cause & Effect</p>