

Solids & Liquids Unit Design - Grade 2

The **Solids and Liquids Module** provides experiences that heighten students' awareness of the physical world. Matter with which we interact exists in three fundamental states: solid, liquid, and gas. In this module first and second graders have introductory experiences with two of these states of matter, solid and liquid.

RI Statements of Enduring Knowledge - (Established Goals):

PS1- All living and nonliving things are composed of matter having characteristics properties that distinguish one substance from another (independent of size or amount of substance).

PS3 – The motion of an object is affected by forces.

Related Rhode Island GSE's (Understandings)	RI Assessment Targets Assessment Evidence ***High Emphasis Targets
<p>PS1 (K-2)-1 Students demonstrate an understanding of characteristic properties of matter by...</p> <p>1a identifying, comparing, and sorting objects by similar or different physical properties (e.g., size, shape, color, texture, smell, weight).</p> <p>1b recording observations/data about physical properties.</p> <p>1c using attributes of properties to state why objects are grouped together (e.g., things that roll, things that are rough).</p> <p>PS1 (K-2)-2 Students demonstrate an understanding of states of matter by...</p> <p>2a describing properties of solids and liquids.</p>	<p>***PS1 (K-4) – INQ–1 <i>Collect and organize data about physical properties in order to classify objects or draw conclusions about objects and their characteristic properties (e.g., temperature, color, size, shape, weight, texture, and flexibility).</i></p> <p>Investigation 1, Parts 1-2, pp. 8-20 Investigation 2, Parts 1-3, pp. 10-27</p> <p>Investigation 1, Parts 1-2, pp. 8-20 Investigation 2, Parts 2-3, pp. 15-27</p> <p>Investigation 1, Part 2, pp. 17-20</p> <p>PS1 (K-4) – POC–2 <i>Make a prediction about what might happen to the state of common materials when heated or cooled or categorize materials as solid, liquid, or gas.</i></p> <p>Investigation 1, Parts 1-3, pp. 8-24 Investigation 2, Parts 1-3, pp. 10-27 Science Stories, pp. 3-13</p>

Related Rhode Island GSE's (Understandings)	RI Assessment Targets Assessment Evidence ***High Emphasis Targets
2b identifying and comparing solids and liquids.	Investigation 1 , Parts 1-3, pp. 8-24 Investigation 2 , Parts 1-3, pp. 10-27 Science Stories , pp. 3-13 Investigation 2 , Science Extension, p. 31 Science Stories , pp. 14-17 FOSS Web, Activity: Change It

Investigation- Time (45min. periods)	Investigation	Focus-Essential Questions	Big Ideas
1.1-(1)	Introduce Solids	<ul style="list-style-type: none"> How can solids be described? 	<ul style="list-style-type: none"> Solids are one state of matter Solid materials have properties that separate them from other states of matter We use our senses to observe the properties of solids
1.2-(1)	Sort Solid Objects	<ul style="list-style-type: none"> In what ways are some solids the same? 	<ul style="list-style-type: none"> Solids can be sorted by their properties We use our senses to observe the properties of solids Solid materials have properties that separate them from other states of matter
1.3-(1)	Construct With Solids	<ul style="list-style-type: none"> How can the properties of solids be used? 	<ul style="list-style-type: none"> Solid materials have distinct uses based on their properties Engineers are scientists who use their knowledge of materials to design useful objects and structures
2.1-(1)	Liquids In Bottles	<ul style="list-style-type: none"> How do liquids differ from each other? 	<ul style="list-style-type: none"> Liquids are one state of matter. Liquids have many properties. Liquids pour and flow.
2.2-(1)	Properties Of Liquids	<ul style="list-style-type: none"> How do liquids differ from each other? 	<ul style="list-style-type: none"> Liquids have many properties.

Investigation-Time (45min. periods)	Investigation	Focus-Essential Questions	Big Ideas
2.3-(1)	Liquid Levels	<ul style="list-style-type: none"> • How do liquids flow when a bottle is turned upside down? • How does the same amount of liquid look in various shapes of containers? • In what ways are liquids the same? 	<ul style="list-style-type: none"> • Liquids pour and flow. • Liquids take the shape of their container. • The surface of liquid is level with respect to the ground. • Solids and liquids have distinct properties that separate them as two states of matter
3.1-(1)	Solids In Containers	<ul style="list-style-type: none"> • Are these materials solid or liquid? 	<ul style="list-style-type: none"> • Solid materials come in all sizes and shapes. • Particles of solid materials can pour like liquids, but maintain their shape. • Solid materials can support denser materials on their surface
3.2-(2)	Separating Soup Mix	<ul style="list-style-type: none"> • How can mixtures of solid particles be separated? 	<ul style="list-style-type: none"> • Mixtures of solid particles can be separated with a screen • Solid materials come in all sizes and shapes.
3.3-(1)	Solids In Bottles	<ul style="list-style-type: none"> • How do particles of solids move in bottles? 	<ul style="list-style-type: none"> • Senses of sight, hearing, and touch can be used to observe the properties of materials • Particles of solid materials can pour like liquids, but unlike liquids they maintain their shape. • The behavior of small solids has similarities to and differences from liquids
3.4-(1)	Separating Beads With A Screen	<ul style="list-style-type: none"> • How do you know which screens to use for separating a mixture of solids? 	<ul style="list-style-type: none"> • Mixtures of solid particles can be separated with a screen.
4.1-(1)	Solids And Water	<ul style="list-style-type: none"> • What happens when different solids are mixed with water? • How can a mixture of water and solids be separated? 	<ul style="list-style-type: none"> • Some solids change when mixed with water; other do not • Some solids dissolve in water; evaporation leaves the solid behind • Water can be separated from a mixture through evaporation
4.2-(1)	Liquids And Water	<ul style="list-style-type: none"> • What happens when water is mixed with different liquids? 	<ul style="list-style-type: none"> • Some liquids mix with water • Some liquids form a layer above or below water
4.3-(2)	Toothpaste Investigation	<ul style="list-style-type: none"> • Is toothpaste a solid, a liquid, a mixture, or some other form of matter? 	<ul style="list-style-type: none"> • Some materials have properties of both solids and liquids • Scientists test materials in many ways in order to compare them to what is known