

Unit 3: Connecting Places, Connecting People

WEEK 1 Lesson 1

Science and Engineering: Physical Science
Matter and Its Interactions: States of Matter

S & E Big Ideas	Matter can change from one state to another. Some changes of matter are reversible, some are not.
S & E Guiding Question	What is matter?
Content Objective	I can use evidence to support a claim about whether a material is a solid, a liquid, or a gas. (Practice 7, 2-PS1-1)
Language Objective	I can describe and name examples of solids, liquids, and gases. (L.6)
Vocabulary	gas: state of matter that expands to fill any space and is often difficult to see liquid: state of matter that flows and adopts the shape of its container matter: everything that has weight and takes up space solid: state of matter that has and keeps its own shape state: the form in which matter exists: liquid, solid, or gas
Materials and Preparation	<ul style="list-style-type: none">● a glass of water● empty glass that has a different shape from the glass of water● a clear zip lock bag, filled with air● Science and Engineering packets● writing tools● chart paper Prepare the following States of Matter Around Us chart.

	<table border="1"> <thead> <tr> <th colspan="3">States of Matter Around Us</th> </tr> <tr> <th>solid</th> <th>liquid</th> <th>gas</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>On the whiteboard, write the following sentence stems:</p> <p>This is a _____. I think this because _____.</p> <p>I am not sure what this is. I notice _____ and _____.</p>	States of Matter Around Us			solid	liquid	gas			
States of Matter Around Us										
solid	liquid	gas								
<p>Opening 9 minutes</p>	<p><i>In Unit 1 we explored properties of materials, and we used what we learned to design chairs. Now we will look at materials again, this time to explore how they can change when we act upon them—in other words, when we do something to them.</i></p> <p><i>Materials come in different states. When we talked about a “state” in Unit 2, we referred to a place, such as Maine. This is a word that has different meanings depending on how it is used. In science, state means the form a material exists in.</i></p> <p><i>Some materials are solids, some are liquids, and some are gases. These are different states. My shoe is a solid; so is this book. Solids are materials that keep their own shape.</i></p> <p><i>The water in this glass is a liquid. Watch me pour this water from one container into another. Liquids are materials that flow and take the shape of whatever container they are in.</i></p> <p>Show the bag filled with air.</p> <p><i>What material is inside this bag?</i></p> <p><i>Air! Air is a gas. It’s a material that is all around us. It fills up its container and is usually difficult to see. Smoke is another example of a gas.</i></p> <p><i>What other examples of a solid can you see or think of?</i></p> <p><i>What other examples of a liquid can you see or think of?</i></p> <p><i>What other examples of a gas can you see or think of?</i></p>									

	<p>Harvest a few examples of each state of matter, and record them on the chart. Offer examples of things that are immediately available or very familiar (chair and pants; morning beverages such as milk and coffee; the air in the classroom).</p> <p>Model using the sentence stems to make a statement and offer evidence: <i>This is a _____. I think this because _____.</i> <i>I am not sure what this is. I notice _____ and _____.</i></p> <p>Refer to established discussion prompts to support conversation, especially in the case of disagreement.</p> <p><i>Today you'll work with a partner/small group to think and talk about the materials around you and what states they are in.</i></p> <p>Show one Science and Engineering Packet, and indicate the appropriate page.</p> <p><i>Write down each material you identify in the column where it belongs: solid, liquid, or gas. What is your evidence for the state of matter you chose? How do you know? Do you and your partner agree?</i></p> <p>Model recording one example, with evidence.</p> <p>Distribute the Science and Engineering packets, and send children to their work spaces with partners or small groups.</p>
<p>Investigation 18 minutes</p>	<p>Circulate to observe, support discussion, and take notes. Encourage children to generate examples for each column, although solids will be easiest to identify.</p> <p>Suggestions for liquids include juice, tea, shampoo, oil, and milk.</p> <p>Suggestions for gas include air, steam, helium, and clouds.</p>
<p>Discussion</p>	<p><i>Discussion about this experience happens in Lesson 2.</i></p>
<p>Closing 1 minute</p>	<p><i>Today you listed examples of solids, liquids, and gases. Tomorrow we will look at your lists and talk about the properties of each of these states.</i></p>
<p>Standards and Practices</p>	<p>L.6 Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening; demonstrate independence in gathering vocabulary knowledge when encountering an unknown term important to comprehension or expression.</p> <p>2-PS1-1. Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.</p>

Ongoing assessment	Review children’s packets to note categorization trends and individual errors; consider whether these are misconceptions or language-based errors. Find examples that might be particularly helpful to highlight with the whole group.
---------------------------	---

Notes
