TEACHING NOTES

Book title: State of Confusion: Solids, Liquids, and Gases

Series: Fusion: Physical Science

Can rocks be liquid? Can water be a solid? Can matter be a solid and a liquid at the same time? And what is a gas? State of Confusion *answers all these questions and more, as it untangles the mysteries of matter. Students will learn how to distinguish whether something is a solid, a liquid, or a gas, and how matter can change from one state to another.*

Text Structure: Description

Remind students that matter is made up of atoms and can be found in different states, such as solid, liquid, or gas. Tell them that because this is the case, the author uses description to tell readers about all the different ways matter can look and feel. Draw a concept web on the board similar to the one on the reproducible and write *Solids* in the center circle. Then read pages 8 and 9 aloud. Ask students to identify words the author uses to describe a solid *(hard, packed-tightly, keeps its shape).* Model how to record words in the web by writing *hard* in one of the outer circles. Have students complete their webs with the other descriptive words. As you continue reading the book with the students, stop frequently to ask them for new words to describe solids. Remind students to add circles to their webs as needed. If time permits, encourage students to also create concept webs that describe liquids and gases.

Text Feature: Experiments

Direct students' attention to the *Make your own oobleck* experiment on page 24. Explain to students that hands-on experiments allow them to test ideas first-hand instead of simply reading about them. Read over the experiment with students. Discuss how the author uses direction words, such as *put* and *add,* to clearly describe each step of the experiment. Point out that the author also includes measurements, such as *1 cup* and *200 ml.* Ask students to form hypotheses about what will happen. Then perform the experiment in class and discuss the results a few days later. Ask students how this experiment helps them to understand properties of matter. Encourage them to pay attention to the other experiments in the book. When they are unable to perform the experiments in class, encourage them to try the experiments at home with an adult's supervision.

Comprehension Strategy: Determining Main Idea and Supporting Details

Explain to students that books often give a lot of information, but some pieces of information are more important than others. Tell them that the most important ideas are called the *main ideas* and the pieces of information that help readers understand the main ideas are called the *supporting details*. Have students read page 19. Tell students that a passage's main idea can often be found in the heading or first few sentences of text. Ask: What is the main idea of this section? *(When matter changes its form, the particles move apart or come together.)* Then call on different students to provide supporting details. *(Ice is hard because its particles are packed close together; when particles get energy, they move faster and flow apart.)* As students continue reading, encourage them to identify the main ideas and supporting details of other sections of the book.

Word Study: Multiple Meaning Words

Write the word *states* (p. 8) on the board. Students will probably know at least one meaning of this word. Model how to identify when a word has more than one definition.

> ***Think Aloud***
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> "I read on page 8 that there are different states of matter. When I see the word *states,* I think of areas of land within a country. I know that this definition does not make sense in this sentence, so there is probably another definition for the word. I check the glossary on page 30, and I see that *states* are also forms of matter."

Remind students to use context clues and the glossary as they read to determine meanings of multiple meaning words. Ask students to think of other words that have different meanings and write the answers on the board.

Writing and Responding: How-to Guide

Point out the chart on page 12, and discuss the different characteristics of the states of matter. Then have students imagine that they are scientists who need to help students determine whether an object is a solid, a liquid, or a gas. Ask students to use the information from the text to create a guide that explains how students can decide whether matter is a solid, liquid, or gas by comparing the characteristics of the object in question to the known characteristics of the different states of matter. Remind them that a guide should be clear and informative without too many distracting images or tips. Place students into small groups to brainstorm ideas and draft the how-to guide together. Then ask groups to exchange guides for editing purposes.

Indicates a graphic organizer is linked to this activity.

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