

# LESSON CLUSTER 2

## Other Solids, Liquids, and Gases

### Question Set 2.1: Are Other Substances Made Of Molecules?

3. See if you can classify the following substances by writing a solid, liquid, or gas. Can you think of other solids, liquids, or gases to add to the list below?

Steel \_\_\_\_\_

Alcohol \_\_\_\_\_

Helium \_\_\_\_\_

Sugar \_\_\_\_\_

Milk \_\_\_\_\_

Carbon dioxide \_\_\_\_\_

2. Draw pictures to show how you think the molecules might be arranged and might be moving in:

Alcohol liquid:

Ice (solid water):

Oxygen gas:

(You will learn more about the answer to this question in Lesson 2.3)

3. How are liquid water and water vapor the same? How are they different?

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4. How are water vapor and oxygen gas the same? How are they different?

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5. Why can you change ice into water but not into glass?

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6. My friend says that we see the sunlight because the sun sends light molecules to us on earth. What do you think?

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Activity 2.2: Making Mixtures

1. Make each of the mixtures listed below and stir it thoroughly. Look at each mixture with a magnifying glass, then describe it using the chart below.

Mixture	Can you see different substances in the mixture?		What does the mixture look like? (write or draw)
Salt & pepper	YES	NO	
Salt & sugar	YES	NO	
Dirty water	YES	NO	
Sugar & water	YES	NO	
Syrup & water	YES	NO	

2. Can you tell a pure substance from a mixture by looking at molecules with a magnifier? \_\_\_\_\_ Explain your answer.

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3. What is a pure substance? What is a mixture? Talk about molecules in your answer.

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4. What do you think happened to the sugar grains when you mixed it with water? Talk about molecules in your answer.

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5. Suppose you could look at the sugar water with magic eyeglasses that showed the molecules. What do you think you could see? Draw or write your answer.

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Question Set 2.3: Molecules in States of Matter

1. Pick: a solid, a liquid and a gas other than ice, liquid water or water vapor. Then, fill out the chart below.

a. The substances that you picked: \_\_\_\_\_

solid: \_\_\_\_\_ liquid: \_\_\_\_\_ gas: \_\_\_\_\_

b. What does a single molecule look like? (make up a shape if you don't really know!).

solid:

liquid:

gas:

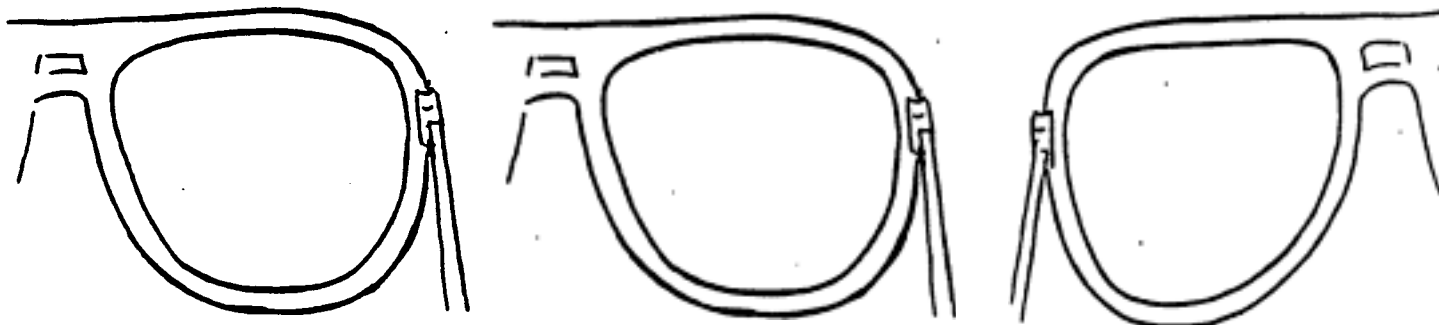
c. How the arrangement and motion of the molecules of the substances would look with "magic eyeglasses."

solid:

liquid:

gas:

d. If you didn't already, draw arrows to show how the molecules of each substance



are moving.

e. If you didn't already, draw arrows to show how the molecules of each substance are moving.

2. The sun was shining in the window and we could see specks of dust floating in the air. "Oh," my friend said, "I can see the dust molecules in the air." What my friend said was almost right, but not quite. Can you explain what was wrong?

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3. My friend and I went out on a boat in the ocean one day. We went swimming, and the water tasted very salty. However, the ocean water looked very clear. I said, "The ocean water appears to be pure here." My friend said, "Even 'clear' ocean water is really a mixture."  
Was my friend right? \_\_\_\_\_

Explain your answer.

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Draw your idea of what the molecules of "pure" ocean water would look like with magic eyeglasses.

