2

Pure Substances and Mixtures

Background Information for Teachers

This lesson introduces several new terms that have specific meaning regarding matter. Students will need to have a firm grasp of these terms if they are to understand the lessons that follow.

Pure Substance: matter consisting of only one type of particle (e.g., distilled water, refined sugar)

Mixture: matter consisting of more than one type of particle (e.g., air, tap water, granola). Mixtures can be divided into two categories: mechanical mixtures and solutions.

Mechanical Mixture: a mixture where individual particles can be identified (granola, concrete). Mechanical mixtures can be homogeneous or heterogeneous.

Homogeneous Mixture: a mixture where particles of each component substance are evenly dispersed

Heterogeneous Mixture: a mixture where particles of each component substance are not evenly dispersed

Solution: a mixture where individual particles are interspersed homogeneously. Individual particles cannot be identified (air, tap water).

Materials

- 8 glass jars or other transparent containers (at least 500 mL each)
- water
- granulated sugar
- breakfast cereal (such as granola that has different parts that can be viewed easily)
- index cards
- chart paper
- markers

- candle or wooden splint
- matches
- food colouring
- rice
- marbles or pebbles
- chicken noodle soup
- carbonated water or soda pop

Activity: Part One: Define and Illustrate

Place two glass jars (or other transparent containers) on the desktop. Fill one jar with granulated sugar. Fill the second jar with breakfast cereal. Label the jars A and B. Ask your students to describe the contents of each container. Record their responses on chart paper.

On two index cards, record the terms *pure* substance and *mixture*. Challenge students to place these cards in front of the appropriate jars. As a class, discuss definitions of a pure substance and of a mixture.

Individually, or in small groups, have students complete Activity Sheet A. Once they have completed this sheet, have them share their responses with the group.

Activity Sheet A

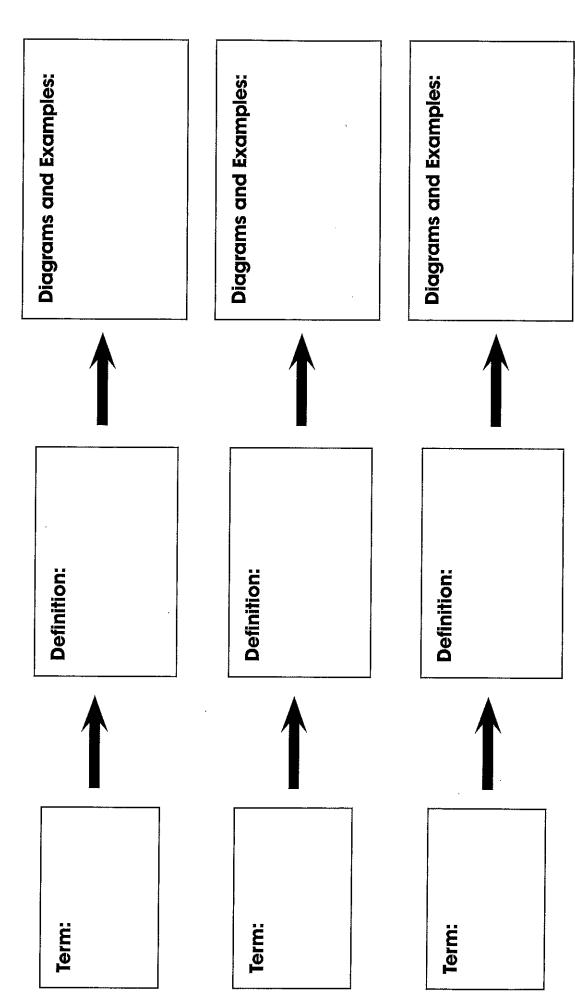
Directions to students:

Define the terms *pure substance*, and *mixture* in your own words. Draw a diagram that illustrates the difference between a pure substance and a mixture. List several examples of pure substances and mixtures in everyday life (2.2.1).

Date: Name:				
Pure Substances and Mixtures				
Define the following terms in	Define the following terms in your own words:			
Pure substance:				
	1			
Mixture:				
Draw a diagram that illustrates the diff	ference between pure substances and mixtures.			
Pure Substance	Mixture			
	•			
	-			
List some examples of pure substance	es and mixtures in everyday life.			
Pure Substance	Mixture			

Mixture of gas and gas	Mixture of solid and solid	Mixture of solid and gas
Jar #	Jar #	Jar #
Substances:	Substances:	Substances:
and	and	and
/lixture of liquid and liquid	Mixture of gas and liquid	Mixture of solid and liquid
ar #	Jar #	Jar #
ubstances:	Substances:	Substances:
nd	and	and
efine homogeneou	us mixture, and give a	ın example:

Unit Glossary



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