

Sample Lesson #1

Investigating Powders

Matter can be identified based on its properties. Use the table to complete the items in this lesson.

Properties of White Substances						
Substance	Physical Properties			Chemical Properties		
	Color	Texture (using hand lens)	Soluble in Water	Reacts with Iodine	Reacts with Vinegar	Reacts with Water
sugar	white	granular/crystals	yes	no	no	no
plaster of Paris	white	powder	no	no	no	heat given off
cornstarch	white	powder	no	turns purple	no	no
baking soda	white	powder	yes	no	bubbles/gas given off	no
baking powder	white	powder	yes	turns purple	bubbles/gas given off	bubbles/gas given off

- What chemical property do baking soda and baking powder have in common?
 - Both substances react with vinegar.
 - Both substances are soluble in water.
 - Both substances are white powders.
 - Baking soda and baking powder have no chemical properties in common.

- What physical property do all the substances have in common?

texture

magnetism

color

solubility

- Which two substances react with water?

- Which two substances react with iodine?

5. Jan has two substances that are not labeled. She conducts several tests to find out what the substances are. The table displays Jan's test results.

Mystery Substance	Color	Texture (using hand lens)	Soluble in Water
A	white	granular/crystals	yes
B	white	powder	yes

What is Mystery Substance A? _____

Mystery Substance B is either _____ or _____? (Select both answers.)

baking powder

cornstarch

baking soda

plaster of Paris

6. According to the table, sugar is soluble in water. Is dissolving sugar in water a chemical change or a physical change? Explain your answer.

7. When water is added to plaster of Paris, what is the observable sign that a chemical reaction has occurred?

A) change in color

C) a precipitate forms

B) a gas is released

D) energy is released

8. (Gravity / Magnetism) is the force that pulls objects toward Earth's center.

9. Earth casts a (curved / straight) shadow on the moon. This tells us that Earth is a (sphere / rectangle).

10. According to the Law of Conservation of Matter, matter is neither _____, nor _____.