Classifying Matter Worksheet Answer Key PDF

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Part 1: Building a Foundation

What is the definition of matter?

undefined. A) Anything that has color and texture

undefined. B) Anything that has mass and occupies space ✓

undefined. C) Anything that can be seen and touched

undefined. D) Anything that is solid or liquid

Matter is defined as anything that has mass and occupies space.

Which of the following are states of matter?

undefined. A) Solid ✓

undefined. B) Liquid ✓

undefined. C) Gas ✓

undefined. D) Plasma ✓

The states of matter include solid, liquid, gas, and plasma.

Describe the difference between an element and a compound.

An element is a pure substance that cannot be broken down, while a compound is made of two or more elements chemically combined.

List two examples of physical properties and two examples of chemical properties.

1. Physical Property 1

Color

2. Physical Property 2

Density

3. Chemical Property 1

Reactivity

4. Chemical Property 2

Flammability

Physical properties include color and density; chemical properties include reactivity and flammability.

Part 2: Understanding and Interpretation

Which of the following best describes a homogeneous mixture?

undefined. A) A mixture with a uniform composition throughout ✓

undefined. B) A mixture with visible different parts

undefined. C) A mixture that cannot be separated

undefined. D) A mixture that changes its state

A homogeneous mixture has a uniform composition throughout.

Which of the following are characteristics of a chemical change?

undefined. A) Formation of a new substance ✓

undefined. B) Change in color ✓

undefined. C) Change in state

undefined. D) Release of gas ✓

Characteristics of a chemical change include the formation of a new substance, change in color, and release of gas.

Explain why the conservation of mass is important in chemical reactions.

The conservation of mass states that mass is neither created nor destroyed in a chemical reaction, which is crucial for balancing equations.

Part 3: Application and Analysis

If you dissolve sugar in water, what type of mixture is formed?

undefined. A) Element
undefined. B) Compound
undefined. C) Homogeneous mixture ✓
undefined. D) Heterogeneous mixture

Dissolving sugar in water creates a homogeneous mixture.

Which of the following processes involve physical changes?

undefined. A) Melting ice ✓
undefined. B) Burning wood
undefined. C) Dissolving salt in water ✓
undefined. D) Rustling iron

Processes that involve physical changes include melting ice and dissolving salt in water.

Provide a real-world example of a chemical change and describe the evidence that indicates a chemical change has occurred.

An example of a chemical change is burning wood, evidenced by ash formation and smoke.

Part 4: Evaluation and Creation

Which of the following statements best explains why a salad is considered a heterogeneous mixture?

undefined. A) It contains only one type of substance.
undefined. B) It has a uniform composition throughout.
undefined. C) Its components can be easily separated. ✓
undefined. D) It changes its state when mixed.

A salad is considered a heterogeneous mixture because its components can be easily separated.

Analyze the following scenarios and identify which involve chemical properties:

undefined. A) Iron rustling ✓

undefined. B) Water boiling

undefined. C) Wood burning ✓

undefined. D) Sugar dissolving

Iron rusts and wood burns, both indicating chemical properties.

Compare and contrast physical and chemical changes using examples.

Physical changes alter form but not composition, while chemical changes result in new substances.

Which of the following scenarios best demonstrates the principle of conservation of mass?

undefined. A) Ice melting in a closed container ✓

undefined. B) Burning paper in an open space

undefined. C) Mixing vinegar and baking soda in an open container

undefined. D) Evaporating water from a beaker

Ice melting in a closed container demonstrates the conservation of mass.

Imagine you are tasked with separating a mixture of sand and salt. Which methods could you use?

undefined. A) Filtration ✓

undefined. B) Evaporation ✓

undefined. C) Distillation

undefined. D) Magnetism

Methods to separate sand and salt include filtration and evaporation.

Design an experiment to demonstrate a chemical change. Describe the materials, procedure, and expected results.

An experiment could involve mixing vinegar and baking soda, producing gas and bubbles as evidence of a chemical change.