Physical And Chemical Change Worksheet

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Part 1: Building a Foundation

Which of the following is an example of a physical change?

Hint: Think about changes that do not alter the chemical composition.

- ◯ A) Burning wood
- ◯ C) Melting ice
- ◯ D) Baking a cake
- ◯ C) Rustin iron

Select all the indicators of a chemical change:

Hint: Look for signs that indicate a new substance is formed.

- ☐ A) Change in state
- ☐ C) Formation of a precipitate
- ☐ D) Change in shape
- ☐ C) Production of gas

Define a chemical change and provide two examples.

Hint: Consider changes that result in new substances.

List two physical properties and two chemical properties of matter.

Hint: Think about properties that can be observed without changing the substance.

1. Physical Property 1

2. Physical Property 2

3. Chemical Property 1

4. Chemical Property 2

Which property is observed without changing the substance's identity?

Hint: Consider properties that do not alter the chemical structure.

- ◯ A) Chemical property
- ◯ C) Reactivity
- ◯ D) Flammability
- ◯ C) Physical property

Part 2: Comprehension and Application

What happens to the molecules of a substance during a physical change?

Hint: Think about the arrangement of molecules.

- ◯ A) They form new substances.
- ◯ C) They remain the same but rearrange.
- ◯ D) They disappear.
- ◯ C) They change their chemical structure.

Which of the following are examples of chemical changes?

Hint: Identify changes that result in new substances.

- ☐ A) Digest food
- ☐ C) Lighting a match
- ☐ D) Dissolving sugar in water

- [ ] C) Freezing water

Explain why melting is considered a physical change and not a chemical change.

Hint: Consider the nature of the change and the substance involved.

Describe two scenarios where a color change indicates a chemical change.

Hint: Think about reactions that produce new substances.

1. Scenario 1

2. Scenario 2

If you observe bubbles forming when two liquids are mixed, what type of change is likely occurring?

Hint: Consider whether a new substance is being formed.

- ◯ A) Physical change
- ◯ C) No change
- ◯ D) Phase change
- ◯ C) Chemical change

In which scenarios would you expect a chemical change to occur?

Hint: Look for reactions that produce new substances.

- [ ] A) Mixing vinegar and baking soda
- [ ] C) Baking bread
- [ ] D) Cutting paper
- [ ] C) Melting butter

Describe a real-world example where both physical and chemical changes occur simultaneously.

Hint: Think about processes that involve both types of changes.

Part 3: Analysis, Evaluation, and Creation

Which of the following best explains why rust forms on iron?

Hint: Consider the environmental factors that contribute to rust formation.

- ◯ A) Physical abrasion
- ◯ C) Exposure to sunlight
- ◯ D) Change in temperature
- ◯ C) Chemical reaction with oxygen

Analyze the following scenarios and identify which involve a chemical change:

Hint: Look for changes that produce new substances.

- ☐ A) A candle burning
- ☐ C) A nail rustling
- ☐ D) Water boiling
- ☐ C) Ice melting

Analyze the process of digestion and explain why it is considered a chemical change.

Hint: Consider the breakdown of food into new substances.

Break down the process of photosynthesis and identify the chemical changes involved.

Hint: Think about the reactants and products of photosynthesis.

1. Reactant 1

2. Reactant 2

3. Product 1

4. Product 2

Which process would you evaluate as having the most significant environmental impact due to chemical changes?

Hint: Consider processes that release pollutants or alter ecosystems.

- ◯ A) Combustions of fossil fuels
- ◯ C) Evaporation of water
- ◯ D) Dissolution of salt in water
- ◯ C) Melting of ice caps

Evaluate the following statements and select those that accurately describe the impact of chemical changes:

Hint: Consider the effects of chemical changes on health and the environment.

- ☐ A) They can release harmful gases.
- ☐ C) They can produce energy.
- ☐ D) They never affect the environment.

☐ C) They are always reversible.

Create a hypothetical experiment to demonstrate a chemical change, including the materials and procedure.

Hint: Think about a simple reaction that can be observed.

Propose two methods to prevent rust and explain the chemical principles behind them.

Hint: Consider methods that inhibit oxidation.

1. Method 1

2. Method 2