Physical Changes

A. Fill in the Blanks

Complete the sentences using the words from the word bank below.

1. A physical change alters the form of a substance, but not its chemical _____.

2. Melting ice is a change in the _____ of matter from solid to liquid.

3. Crushing a rock changes its size and _____, but it is still a rock.

4. Many physical changes, like freezing water, are easily _____.

5. Even when sugar dissolves in water, it is still the same _____, just in a different form.

B. Match the Following;

Match the physical change term in Column A with its correct description in Column B.

Column A	Column B
1. Melting	A. A gas turns directly into a solid..
2. Freezing	B. A solid turns into a liquid.
3. Evaporation	C. A liquid turns into a gas.
4. Condensation	D. A solid turns directly into a gas.
5. Sublimation	E. A liquid turns into a solid.
6. Deposition	F. A gas turns into a liquid.

C. Practice Problems

For each process below, identify whether it is a Physical Change or a Chemical Change. Provide a brief reason for your choice.

1. Dissolving sugar in water: _____ (Reason: _____)

2. Baking a cake: _____ (Reason: _____)

3. Boiling water: _____ (Reason: _____)

4. Rusting of an iron nail: _____ (Reason: _____)

5. Crushing an aluminum can: _____ (Reason: _____)

6. Mixing sand and water: _____ (Reason: _____)

7. Frying an egg: _____ (Reason: _____)

8. Making a fruit smoothie: _____ (Reason: _____)

9. A firework exploding: _____ (Reason: _____)

10. Sublimation of dry ice (solid CO_2 to gaseous CO_2): _____ (Reason: _____)

D. Warm-up Questions

Answer the following basic questions to get started.

1. What is the main difference between a physical change and a chemical change?

2. Is melting an ice cube a physical or chemical change?

3. Tearing a piece of paper is an example of a _____ change.

4. Name one process where a liquid turns into a gas._____

5. Which of the following is a physical change: burning wood or chopping wood?

E. Challenge Questions

Think critically to answer these more difficult questions.

1. Are all physical changes easily reversible? Explain your answer with one example of an easily reversible physical change and one that is not.

2. When you dissolve salt in water, it seems to disappear. Why is this considered a physical change and not a chemical one? How could you prove it?

3. Describe the series of physical changes that occur to a puddle of water on a hot day, which then leads to the formation of clouds and eventually rain.

4. If you have a 50-gram block of chocolate and you melt it, what is the mass of the melted chocolate? Explain how this demonstrates a key principle of physical changes.

5. Compare and contrast bending a metal wire and burning a magnesium ribbon. Why is one a physical change and the other a chemical change?

F. Word Problems & Application

Apply your knowledge of physical changes to these real-world scenarios.

1. In the Kitchen: Maria is making a salad. She chops lettuce, grates carrots, slices tomatoes, and mixes them all in a bowl with dressing. List three physical changes that occurred.

2. Art Class: An art student melts crayons to create a new, multi-colored crayon block. Is this process a physical or chemical change? Explain why.

3. Jewelry Making: A jeweler receives a rough gold nugget. They melt it, pour it into a ring-shaped mold, and then polish it until it shines. Explain why all these steps are considered physical changes.

4. Winter Morning: On a cold winter morning, you see frost on the grass. This frost formed directly from water vapor in the air. What is the name of this physical change (gas to solid)?

5. A Broken Glass: If a glass cup falls and shatters into a hundred pieces, is this a physical or chemical change? Explain your reasoning.

G. True or False

1. A new substance is formed during a physical change. _____

2. Dissolving sugar in tea is a chemical change because the sugar disappears. _____

3. All physical changes are easy to reverse. _____

4. Cutting a log into smaller pieces is a physical change. _____

5. When water boils, the bubbles are made of a new gas, not water vapor. _____