Name _____

Investigating the States of Matter of Water

Objective:

Students will learn about the three states of matter—solid, liquid, and gas—by observing how water changes between these states.

Materials:

Ice cubes (solid water)
A clear cup
A pot or kettle
A stove or hot plate (for teacher use only)
A spoon
A thermometer (optional)
Notebook and pencil
Tray or plate

The Scientific Method Steps:

Ask a Question:

How can water change from one state of matter to another?

Make a Hypothesis: (What do you think will happen when ice is heated up or water is cooled down?)

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_____

Conduct the Experiment:

Part 1: Solid to Liquid

Observe the Ice Cube (Solid Water):

Place an ice cube on a plate or tray.

Touch the ice cube. What does it feel like?

_____

Watch the Ice Melt:

Leave the ice cube out at room temperature and observe what happens over time.

What is happening to the ice cube?

_____

Write down how long it took for the ice cube to melt. _____

What caused the ice to melt? _____

Part 2: Liquid to Gas

Heat Water in a Pot (Teacher Use Only):

Pour some liquid water into a pot and heat it on a stove or hot plate.

As the water heats up, steam will begin to rise from the pot.

Observe the Steam (Gas):

Observe the steam (from a safe distance).

What do you notice happening to the water?

_____

Part 3: Gas Back to Liquid

Cool the Steam (Condensation):

Hold a metal lid or cold spoon above the pot of steam.

After a few moments, water droplets will form on the surface of the spoon or lid.

Observe Condensation:

What do you see happening? _____

_____

Analyze the Data:

Look at the different states of water we observed:

The solid ice cube melted into liquid water.

The liquid water turned into gas when heated.

The gas turned back into liquid water when cooled.

Conclusion:

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_____

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