PHYSICAL SCIENCE EXPLORED

STUDENT LAB GUIDE

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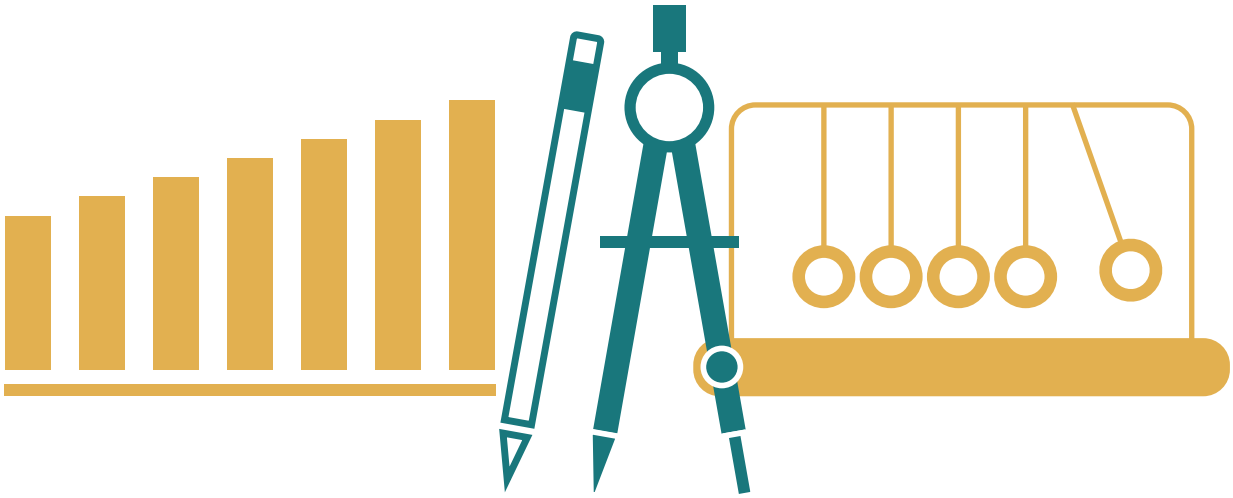

LESSON 4

PHYSICAL VS. CHEMICAL CHANGES

In this lab, you will explore the differences between physical and chemical changes.

Supplies

- Plastic bottle
- 25 or 50 mL Graduated cylinder
- Vinegar
- Small pot
- Balloon
- Funnel
- Water
- Stove
- Teaspoon
- Baking soda
- Salt
- Ice cube

Salt Water Instructions

1. Mix one teaspoon of salt with one cup of water in a small pot. Stir until the salt is fully dissolved (when you can no longer see salt in the water).
2. Record your observations in the data table below. Classify the type of changes as physical or chemical and explain your reasoning.
3. Carefully heat the salt water until the water is completely gone.
4. Record your observations in the data table below. Classify the type of changes as physical or chemical and explain your reasoning.

Ice Cube Instructions

5. Place an ice cube on the table or counter for several minutes and record your observations.
6. Record your observations in the data table below. Classify the type of changes as physical or chemical and explain your reasoning.

Vinegar & Baking Soda Instructions

7. Using the graduated cylinder, add about 5 mL of vinegar to the plastic bottle.
8. Using the funnel, put 2 teaspoons of baking soda into the balloon.
9. Carefully stretch the balloon over the bottle opening, making sure the baking soda stays in the balloon.
10. Lift up the balloon, letting the baking soda fall into the vinegar.
11. Record your observations in the data table below. Classify the type of changes as physical or chemical and explain your reasoning.

Data Table

	Observations	Type of change and why
Mixing salt and water		
Evaporating water		
Ice cube		
Baking soda and vinegar		

Questions

1. Was it difficult to tell if the changes were physical or chemical? Why or why not?

_____

_____

_____

2. What type of substance (element, compound, homogeneous mixture, or heterogeneous mixture) was the salt water after you stirred it?

_____

3. What type of substance (element, compound, homogeneous mixture, or heterogeneous mixture) was left over after the water evaporated?

_____

4. What type of substance (element, compound, homogeneous mixture, or heterogeneous mixture) was present when the ice cube melted?

_____

NOTES