Lesson: Decomposition Reaction	Name:
Teacher:	Date:

Decomposing Hydrogen Peroxide with Yeast – Free Experiment Guide – STEM Scholars Hub

Lesson Focus: Understanding chemical reactions and energy changes using yeast as a catalyst to decompose hydrogen peroxide.

Materials

- 3% hydrogen peroxide
- Active dry yeast
- Warm water (~100°F)
- Liquid dish soap
- Measuring spoons
- Small bowl
- Clear plastic or glass bottle
- Food coloring (optional)
- Tray or shallow container
- Safety goggles

Safety First

- Wear safety goggles at all times.
- Be careful with hydrogen peroxide – avoid touching your skin and eyes.
- Clean up spills immediately.
- Wash your hands after the experiment.

Procedure

1. **Prepare the Yeast Solution**
   - Mix 1–2 teaspoons of yeast in a small bowl with warm water.
2. **Prepare the Hydrogen Peroxide**
   - Add a few drops of dish soap to about 50 mL of hydrogen peroxide in a bottle.
   - (Optional) Add a few drops of food coloring.

3. Combine Solutions
    - Pour the yeast mixture into the hydrogen peroxide bottle.
    - Place the bottle on a tray to catch foam.
4. Observe
    - Watch foam form and note if the bottle feels warm (exothermic reaction).
    - Identify the gas released (oxygen).

Scientific Inquiry Questions

- What role does yeast play in the reaction?

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- Why is heat released?

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- How does the foam form?

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- What happens if you use cold water instead of warm water for the yeast?

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- What would happen if you used more yeast?

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- How is this reaction an example of a chemical change?

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Clean-Up

- Dispose of leftover solutions and foam safely.
- Rinse all containers.
- Wipe the workspace clean.
- Wash hands thoroughly.