

Rubber Egg Experiment

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Summary

In this experiment, students can learn about a simple chemical reaction by putting an egg in vinegar. The eggshell is composed of calcium carbonate (CaCO_3), while vinegar is a little bit of acetic acid (CH_3COOH) mixed with water. The acetic acid reacts with the calcium carbonate of the eggshell, which forms calcium acetate ($\text{Ca}(\text{CH}_3\text{COO})_2$), water (H_2O), and carbon dioxide (CO_2). This carbon dioxide is released as a gas, which can be seen as bubbles form on the surface of the shell. For the next twenty four hours, the vinegar will react with all of the shell until it is entirely consumed, leaving only the interior, rubber part of the egg remaining.

Materials

1. Vinegar
2. Raw Egg
3. Tall Glass or Jar

Procedure

Link to Video: <https://tinyurl.com/y7munp7e>

Written Out Instructions:

1. Put your egg into the tall glass or jar.
2. Pour enough vinegar into the jar so that the egg is completely submerged in the liquid.
3. Put the glass aside and let the egg soak for at least twenty four hours. During this time, feel free to observe what's happening. Are there bubbles on the egg?
4. After waiting a day, you can take out the egg and wash it off.
5. Observe your rubber egg. The hard outer shell should be gone, and you can see the egg white and yolk surrounded by a thin membrane.
6. If the egg still seems to have some shell on it, put it back into another cup of vinegar and wait a few more days. Make sure you use a fresh cup of vinegar, not the old one.

Materials & Resources

<https://www.stevespanglerscience.com/lab/experiments/naked-egg-experiment/>

<https://littlebinsforlittlehands.com/naked-egg-experiment-rubber-egg-science/>

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