



Bouncy Green Eggs

Dr. Seuss is one of the most beloved children's authors of all time. His books have touched the hearts of many people across the country. His stories teach us valuable lessons about the world through wild tales and wacky characters. Celebrate "Dr. Seuss Day" on March 2nd with this hands-on science experiment based on the book *Green Eggs and Ham*.

Fun Facts:

- Dr. Seuss was born on March 2nd, 1904. If Dr. Seuss was alive today, he would be 121 years old!
- Eggshells are made of calcium carbonate, and vinegar is an acid. When these two substances react, the eggshell dissolves, leaving behind a gas called carbon dioxide and a shell-less egg.
- The shell-less egg will be soft and squishy. There is a thin layer inside an egg called the semi-permeable membrane that helps hold the egg together. This membrane allows water to flow in and out of the egg in order to keep a balanced and healthy environment on the inside of the egg.

Learning Objectives:

- Students will make observations about a chemical reaction.
- Students will identify characteristics of a semi-permeable membrane.



Materials Needed

- Egg
- Vinegar
- Green food coloring
- Jar with a lid
- Ladle or large spoon
- Plate
- Toothpick



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Procedure:

1. Prepare Your Jar

- Pour vinegar into the jar. The amount of vinegar will depend on the size of your jar. You want to pour enough vinegar to cover your egg entirely.
- Add a few drops of green food coloring to your vinegar.
- Close the lid of your jar and shake gently until the water is completely green.
- Remove the lid and gently place your egg in the jar using your ladle or large spoon. Be careful! If you crack your egg, you must replace it with another egg in order for the experiment to be successful.
- Close the lid of your jar and leave the egg in the jar for three days.

2. Make Observations

- Make observations about what you see each day.

3. Remove the Egg

- After three days, carefully remove the egg from the jar using a ladle or large spoon.
- Rinse the egg under warm running water. Be gentle! You want to make sure the membrane around the egg stays intact.
- Make observations about what you see and feel.
- Try to bounce the egg by holding it 1-2 inches above your plate and let it go.

Discussion Questions:

- A chemical reaction makes a new substance by changing one substance into another substance. A physical reaction only changes how something looks or feels without making a new substance. *Do you think that the egg underwent a physical or chemical reaction? (Hint: The vinegar reacted with calcium in the eggshell to completely dissolve it and make bubbles of carbon dioxide.)*
- Take your toothpick and pierce the membrane of the egg. *Are the yolk and the inside of the egg green too? How could this happen? (Hint: The semi-permeable membrane lets water in and out. Food dye is water based!)*

Extensions:

- Place your shell-less egg in a glass of water overnight. Make observations about the size of the egg. *What do you think caused the change in size?*

Safety Considerations:

- The egg is raw and is not safe to eat after the experiment. Also, it would taste pretty gross after being soaked in vinegar for three days!
- When taking your egg out, make sure you wear clothes that you don't mind getting messy.