

WHAT ARE WE INVESTIGATING?

Can you make an egg shell disappear and still have an egg?

MATERIALS:

- Tall Glass
- Vinegar
- Raw Egg
- Strive Academy's Engineering Design Process Handout (found at www.striveacademy.org)
- Pencil or Pen

EXTENSION:

- * Try this variable - repeat the experiment but with a different type of egg. You can test different brands of eggs or organic vs. non-organic. See if there is any difference.
- * If you want to make your egg bounce, repeat the experiment but take it out of the vinegar after 24 hours. Starting at 1 inch above the ground, drop the egg and see what happens. Then repeat at 2 inches, 3 inches, etc. See how high the egg has to be before it breaks. CAUTION - THIS COULD GET MESSY!

DIRECTIONS:

1. Gather all of your materials. Our materials are just suggestions - feel free to add other things too!
 2. On your handout (found at www.striveacademy.org), fill in the title of your experiment (Disappearing Egg Shell).
 3. On your handout, fill in your hypothesis. You want to answer the question: How do you think you can remove an egg shell and still keep the egg?
 4. On your handout, sketch a design of your experimental setup. You will be putting the raw egg in a cup full of vinegar. Feel free to use color and label the materials that you will be using!
 5. Carefully put your egg in the tall glass or cup. Pour in enough vinegar so that it covers the egg.
 6. Under “Data Collection/Observation”, draw a picture of what you see forming on the outside of your egg. Feel free to use color!
 7. Leave the egg in the vinegar for a full 24 hours. After 24 hours, under “Results”, write “1 Day” and describe what the egg looks like.
 8. Carefully pour off the vinegar into the sink. Add some fresh vinegar to cover the egg again. You will leave the egg in the cup for 5-7 days.
 9. Each day, observe your egg. Under “Results”, write the day (Day 2, Day 3, etc.) and describe what the egg looks like. Note any changes from the previous day.
 10. After 5-7 days, carefully pour out the vinegar in the sink and rinse the egg with water. The shell should be gone! Handle your egg carefully because the only thing keeping it together is a thin membrane!
- II. Answer the “Analysis” questions on your handout:
- On which day did you notice the biggest change in your egg?
 - Did you notice that your egg got a little bigger? This is because of osmosis - water moves in and out of the egg (there is water in the vinegar). Based on what happened to your egg, do you think water moved into the egg or out of the egg?
 - Shine a flashlight on your egg. What do you notice?

**** Try the extension activities on the first page for more fun! ****