

## THE NAKED EGG (A 3+ day experiment)

Start this experiment over the weekend (no later than Fri or Sat) bring to class the next week on Tues.

### Materials:

1. Two eggs
2. Two 8-12 oz glass jars or drinking glasses that the eggs will fit in to.
3. Enough Karo syrup to completely cover the egg in the jar.
4. Water.
5. At least 1 qt of vinegar.

### Procedure:

1. Carefully place one raw egg into each glass container. Do not break the shell.
2. Pour enough vinegar into each container to completely cover each egg.
3. Bubbles will form on the egg shells. This is the conversion of the calcium carbonate in the egg shell into carbon dioxide gas. The calcium becomes calcium acetate which is soluble in the vinegar (an acetic acid/water solution).
4. The next day turn the eggs and carefully rub off any remaining egg shell, but don't rub too hard. You may want to pour off some of the vinegar and add fresh vinegar to remove the remaining egg shell. What is left is the membrane surrounding the egg white and egg yolk.
5. Later the same day or the next day, do a final cleaning of the eggs. They must be handled carefully so not to break the membrane. Rub the eggs gently under cold running water to remove the last remnants of egg shell residue. The eggs will feel like water balloons and the yolk will be visible through the membrane.
6. Empty the glass containers and rinse with water.
7. Carefully place one de-shelled egg (now a naked egg) into each container.
8. Pour Karo syrup into one container to completely cover the egg.
9. Pour water into the other container to completely cover the egg.
10. Label the containers "A and B" or "1 and 2" or "Karo and Water". Whatever...
11. Wait and swirl the containers occasionally over the next few days. When you swirl the egg in the Karo syrup you'll notice a "halo" around the egg. This is the water that is coming out of the egg. Swirling removes the water from around the egg so that more water can come out. See how much you can shrink your egg.
12. Derive a hypothesis for your observations of what happens to the eggs.

### For class Tues

Bring your naked eggs to class for a discussion of what's going on with your eggs. We will also do further experiments with the eggs.