

incredible!

American Egg Board

Grades K-5

How to Fold an Egg

If you think folding an egg sounds crazy (and messy), you just might be mistaken. Try this experiment to see for yourself!

What You Need

- several raw eggs
- emery board
- pushpin or thumb tack
- bowl or sink
- plastic coffee stirrer
- beaker or tall glass
- vinegar
- spoon or pair of tongs
- baby powder
- plastic straw



What You Do

1. With the help of an adult, gently rub the emery board along each end of an egg. Then use the pushpin or tack to poke a small hole in both ends of the egg. Make sure the hole is about $\frac{1}{8}$ inch in diameter. (If you need to enlarge the hole, make several small holes close together. Then use the pin or tack to chip away at the eggshell until the hole is large enough.)

Step 1 can be tricky, so be prepared to crack a few eggs before you're successful. To minimize the mess, do this step over a paper plate.



Step 1

2. Hold the egg over a bowl or sink and blow on one end of the egg so that both the yolk and egg drain out the hole on the other end. To make it easier for the yolk to come out, gently insert the coffee stirrer in one hole and move it around to "scramble" the yolk.

If you don't want to put your mouth on the egg to blow out its contents, insert a coffee stirrer in one hole. Then blow gently as you hold the egg over the sink or bowl. The egg white and yolk will come out both holes as you blow.



Step 2

3. Put the hollowed out egg in a beaker or tall glass of vinegar. To keep the egg completely submerged in the vinegar, use the spoon or tongs to gently push the egg to below the surface and hold it there until the air escapes (which will take several minutes).

What You Do (cont'd.)

4. Leave the egg in the vinegar for several days until the shell has dissolved. (Some eggshells may take up to ten days to dissolve.) Observe the egg daily. You should notice bubbles forming on the shell on the first few days. You will also see the eggshell begin to break off from the egg, leaving a flexible membrane behind.



Step 4

5. When the eggshell has completely dissolved, use the spoon or tongs to remove the membrane from the beaker.
6. Rinse the membrane with water and very gently squeeze out the excess water.
7. Dust the membrane with baby powder. Using the coffee stirrer or straw, gently inflate the egg and try to get some powder inside. Doing this will help keep the membrane from drying out.



Step 7

What You Do (cont'd.)

- Place the membrane in your hand, flat. Then close your hand over the egg to fold it. There you have it—a folded egg!



Step 8

- Gently toss the egg back and forth between your hands until it unfolds and actually inflates again!



Step 9

Why It Happened

Vinegar contains acetic acid, which breaks down the calcium carbonate in the eggshell. This reaction is evidenced by the carbon dioxide bubbles that form on the surface of the egg. The carbon dioxide gas dissolves the hard outer shell of the egg, leaving the inner membrane. (This membrane is actually very strong because it contains a protein called keratin.) Since the egg white and yolk had been removed from the egg, all that's left in the membrane is air. Tossing the membrane causes air to re-enter and inflate the membrane back to its original egg shape.