

incredible!

American Egg Board

Grades K–5

Strong As an Egg?

What does an egg have to do with architecture and strength? You'll find out when you try this simple (and simply amazing) experiment!

What You Need

- several raw eggs
- bowl or sink
- ring



What You Do

1. Place the egg in the palm of your hand.
2. Close your hand around the egg so that your fingers are completely wrapped around the egg.
3. Squeeze the egg, making sure to apply even pressure all around the eggshell. (If you're nervous about the possible results, do this step over the bowl or a sink.) Are you surprised by the result?
4. Hold the egg between your thumb and forefinger; then squeeze the top and bottom of the egg. What happens?



Step 2



Step 4

5. Repeat Steps 1–3 over a bowl or sink, but this time put a ring on your ring finger. What are the results this time?



Step 5

If you end up with egg on your hands, be sure to wash your hands with soap and water.

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Why It Happened

So what makes the egg so strong? The answer is in the egg's arched shape. Architects know that a three-dimensional arch is one of the strongest architectural forms around. The smooth curve of an arch can support the weight of buildings and bridges for hundreds of years. In the same way, the eggshell's curved shape distributes pressure all around the egg, so the egg didn't break when you squeezed it. The egg is strongest at its top and bottom, which explains why it didn't break when you completed Step 4.

When is the eggshell a bit more wimpy? An eggshell isn't as strong when you apply uneven pressure on it, such as when you put a ring on your finger and squeezed in Step 5. Uneven pressure is why eggs crack easily when you tap them on the side of a bowl. How can you use this information to explain why eggs don't crack when hens sit on them?

Try holding the egg in your hand again but press on one side of the shell without squeezing the egg. What happens? Why?



How do eggs get from the farm to your table? Find out with the informational reading worksheet, "From Hen to Home"!

From Hen to Home

A lot happens before an egg gets from a farm to your plate! First, an egg farmer gathers eggs. Some farmers have machines that collect eggs. Some farmers get the eggs by hand.

Next, the eggs are washed. After the eggs are clean, the farmer checks them. He looks at the shells. He looks inside the eggs, but he does not break see.

If the eggs look good, he puts them in cartons. He puts large eggs with large eggs. He puts small eggs with small eggs. The eggs are packed on trucks that keep them cool. The trucks take the eggs to stores. Then people buy the eggs and take them home!

1. Circle the word **gathers**. Circle the word below with the same meaning.
plants cooks collects gives

2. How does the farmer sort the eggs? Explain.

3. Underline the first sentence. Write three details that support it.