Materials Needed
- o Egg
- o Sink or bowl

Grade Range
Pre-K
K-2
3-5
6-8

Topics/Skills
Cause and Effect; Structure and Function; Matter

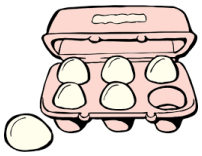
Learning Standards
NGSS: Structure and Properties of Matter

Duration
20 minutes

Prep Time
5 minutes

Super Egg

Squeeze an Egg and See what Happens!



Guess what? Chicken butt? No, chicken egg! Eggs have the reputation of being fragile, but this activity will let you explore another side of the egg – its strength.

Activity Challenge
Squeeze an egg in three different ways to see if it cracks.

Preparation
Review the Materials Needed list and gather all materials.

To Do
Complete the following steps over a sink or bowl:

1. Place an egg in the palm of your hand. Close your hand, wrapping your fingers completely around the egg. Squeeze the egg by applying even pressure all around the shell.
2. Hold the egg between thumb and forefinger and squeeze the top and bottom of the egg.
3. Hold the egg in the palm of your hand. Press your fingers into just one side of the shell. Do not squeeze the egg – just press on one side.

Observations
- What happens when you squeeze the egg evenly? Why?
- What happens when you press on only one side of the shell? Why?
- What are some other ways to squeeze the egg without it cracking?

Extensions
- Design and build a kitchen gadget that will cleanly crack eggs.
- Design and build an egg protector that will protect eggs from cracking.

The Content behind the Activity
When you hold the egg in your hand and squeeze, you are distributing pressure evenly around the curved egg. An eggshell can withstand significant compressive force applied along its curved surface, like the way that an archway can support a building or bridge. However, an eggshell is not strong when pressure is applied unevenly — across, rather than along the egg's curvature. When an egg is cracked on the side of a bowl, it breaks, since the pressure is applied at just one point. When a hen sits on an egg, the egg does not break because her weight is evenly distributed. But a baby chick can break through the eggshell because its beak's pecking force is applied at just one point on the egg.