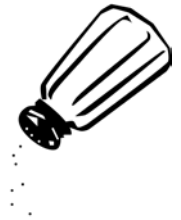


# “EGGS-PERIMENTS”

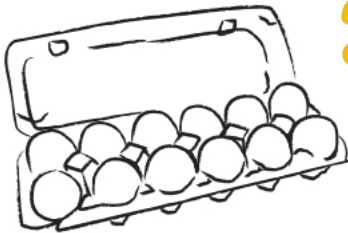
## Science Fun Using Eggs!



### 1 Now it Sinks, Now it Floats

Fill two glasses with water. Stir  $\frac{1}{4}$  cup (50 mL) salt into one glass until the salt is dissolved. Place a raw egg in its shell in each glass. What happens?

Result: When you add salt to the water, you make it heavier, or denser, than the egg which means the egg will float in the water. With a little “eggs-perimenting” you can add just enough salt to make the egg float halfway in the glass.



### 2 Find the Fresh Egg

Fill a bowl with water. Place a fresh egg and an older egg (one that is well past the Best Before date on the carton) in the water. What happens?

Result: The fresh egg will sink and the older egg will float. As an egg ages, air enters it through tiny pores in the shell and collects at the wide end of the egg. Over time, this makes the egg light enough to float in water.

### 3 Find the Uncooked Egg

Spin an uncooked and a hard-cooked egg on a table top. Ask a friend to guess which one is the uncooked egg.

Result: When you try to spin an uncooked egg, its liquid yolk and white will move around making the egg wobble instead of spin. The hard-cooked egg will spin smoothly since the insides are solid and therefore more stable.

### 4 The Un-Crushable Egg Shell

Wrap masking tape over the broken edges of four washed egg shell halves. Trim the edges so the eggs will sit flat. Position the egg shells so that they will support the four corners of some books. Carefully balance the books, one by one, on top. How many books can you stack before the egg shells start to crack?

Result: The egg shells can support the weight of the books because of the curved shape of the shells. This shape helps distribute the weight of the books down and over the entire shell instead of just on the end.

### 5 Egg and Soda

Soak an egg in a glass filled with cola for 30 minutes to 1 hour. What happens? Try brushing the egg with toothpaste using a toothbrush. What happens? Are there any similarities between the egg and your teeth?

Result: The egg becomes stained with cola and is removed by the toothpaste.



## 6 a) Can You Remove the Shell of an Egg Without Cracking it?

Place an egg into a glass. Add enough vinegar to cover the egg. After one day, use a spoon to carefully lift the egg out of the glass. Rinse the egg under a bit of water while gently rubbing the shell with your fingers. If the shell doesn't come off completely, place the egg back in the vinegar and leave it for two to three more days until the shell can be removed completely.

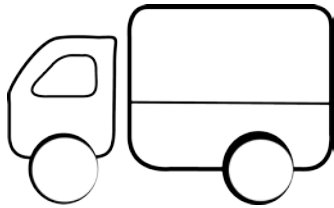
Result: Egg shells contain calcium which makes them hard. Vinegar, an acid, dissolves the calcium in the shell. The skin or membrane under the shell does not react to the vinegar and is left to hold the egg together.

## b) Can You Make an Egg Bounce?

Take the shell-less egg that has been soaking in vinegar and let it soak in a glass of water for a couple of days. What happens? Try dropping the egg from a few feet (1 m) above the floor or table. What happens?

Result: The vinegar removes the hard shell but the membrane surrounding the egg remains. Soaking the egg in water causes the egg to expand due to osmosis; there is a greater concentration of water on the outside of the egg membrane so the water moves into the egg. The water stretches the membrane, making the egg "bouncy."

For more fun egg resources, visit us online at [www.getcracking.ca/education/for-teachers](http://www.getcracking.ca/education/for-teachers)



## DID YOU KNOW?



- A hen lays about one egg per day.
- It takes 4 to 7 days for eggs to get from the farm to your grocery store.
- Brown and white eggs have the same nutritional value and quality. Brown eggs are generally laid by brown-feathered hens and white eggs are laid by white-feathered hens.
- Research shows that eating a high protein breakfast that includes eggs can improve performance in school by increasing concentration levels.
- Eggs are a source of DHA, the Omega-3 fat related to healthy brain development. A child (1 to 8 years old) can get over 80 percent of the recommended daily amount of DHA by eating one Omega-3 egg.
- Eggs also contain choline which stimulates brain development and improves concentration.



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