

Can you Make an Egg Float in Water?

Learn about Density with an Egg, a Glass, Water and Salt!

What You'll Need: One Egg
A Clear Drinking Glass
Water
Salt (whatever you use for cooking will work)
A Spoon

Directions:

Fill the drinking glass $\frac{3}{4}$ of the way up with clean water.
Gently drop an Egg in.

Observe the egg in the water, notice that it sinks to the bottom.

Remove the Egg and add a spoonful of salt to the water and stir until dissolved.
Try the Egg again, does it sink or float?

Remove the egg and add another spoonful of salt. Try the egg again. Repeat until you notice that the egg isn't sinking to the bottom of the glass. (For us it took about 3 spoonfuls but that will depend on the size of your glass and the size of your spoon).

Ta Da! You CAN make an Egg Float in Water

Questions to ask:

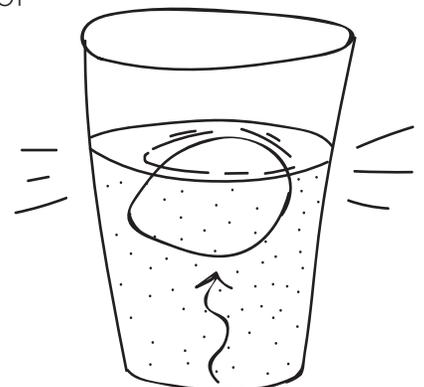
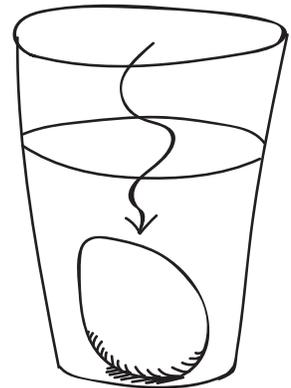
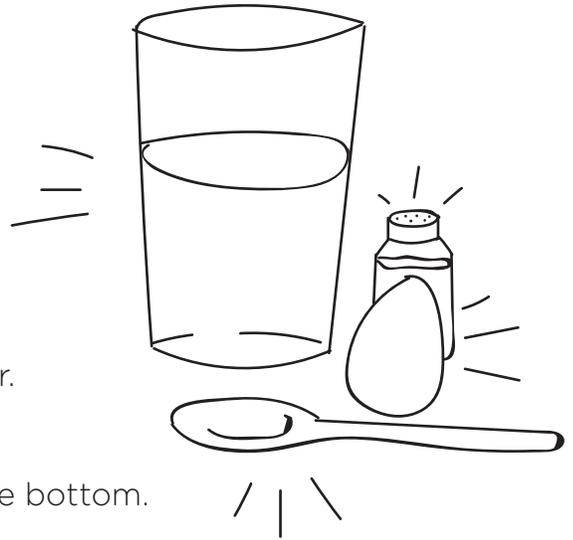
What do you think this egg will do when we put it in the glass of water?

Why did it sink to the bottom?

Do you think adding salt will make a difference?

Why did the egg start to float after adding X spoonfuls of salt, what changed?

Do you think it would be easier for us to float in a freshwater lake or a saltwater ocean?



The Science Behind this Experiment:

The density of saltwater is greater than fresh water. An egg is denser than fresh water and sinks but when enough salt is added, the density of the egg is less than the salt water and it starts to float.

What is density? Density is the degree of compactness of a substance measured by the quantity of mass per unit of volume.

What makes objects float or sink? An object sinks when its own density is greater than the liquid's density.

How does the addition of salt into fresh water make the salt water denser?

When you add salt to water, the salt dissolves, breaking down into ions that are attracted to the water molecules. This attraction causes the ions to bind with the water molecules, increasing the amount of matter per volume (density).

Fun Fact: The salt ions bind so well with the water molecules, that the volume of the saltwater is smaller than the initial water volume plus the initial salt volume.