To Sink or to Float

Egg and Salt Experiment

The egg in salt floats to the top while the egg in normal water sinks to the bottom.

Materials:

Salt

Tablespoon

2 clear glasses

Warm water

2 raw eggs

Will an egg sink or float in normal water? What effect will salt have? Place the two glasses of warm water on a table. Add about 10 heaping tablespoons of salt to one of the glasses and stir until the salt is dissolved in the water.

Place an egg in each glass and observe what happens. The egg in the normal water will sink to the bottom while the egg in the salt water will float to the top.

Expand on the experiment by mixing the two types of water. Remove the eggs from the glasses. Empty about half of the salt water. Then pour the plain water into the salt water cup up to the amount the glass had before. Place the egg in the cup. The egg will float in the middle of the cup.

Make the egg rise to the top again by removing the normal water. With the egg still in the glass, begin slowly removing the water a spoonful at a time. The egg will rise higher and higher as each spoonful is removed.

The egg floats in salt water because of density. Salt water is denser than the egg thereby causing the egg to rise to the top. The egg is denser than normal water, though, which is why it sinks to the bottom when in the cup of normal water.

Spinning Around

Materials:

1 hard-boiled egg

1 raw egg

Ever wondered how you can tell the difference between a hard-boiled egg and a raw egg? Just spin them to figure it out. Place a hard-boiled egg and a raw egg on the table. Spin each of them and observe what happens. The boiled egg will spin faster. The raw egg will spin slowly. The reason for this has to do with the insides. The boiled egg is one solid piece. Therefore the whole egg spins in the same direction. The raw egg has liquid inside which moves separately from the shell. The movement of the inside of the raw egg keeps the whole egg from spinning quickly.

Observe what happens when you try to stop the spinning of the eggs. Spin the eggs and then put your finger on them to stop them. The boiled egg should stop immediately. The raw egg will keep spinning for a moment because the liquid inside the egg will keep moving.

Spinning Eggs

The boiled egg spins faster than the raw egg.

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FRESH THINKING

Suck It In

Materials:

Glass bottle or jar with a narrow opening

Matches

Newspaper

Hard-boiled, peeled egg

In this experiment, the egg will be sucked into the bottle. First, sit the egg in the mouth of the bottle. The egg should sit in the opening without falling in. Now move the egg away and light the piece of newspaper and drop it into the bottle. Quickly place the egg over the opening of the bottle with the narrow part of the egg pointing down into the bottle. As you watch, the egg will get sucked down into the bottle. Now try to get the egg back out of the bottle. It won't be able to go back through the opening without breaking apart.

The egg gets sucked into the bottle because the fire causes the air pressure inside the bottle to become greater than the air outside. The air is looking for a place to escape, so the egg is sucked in. The egg won't come back out of the bottle easily because the pressures have stabilized and there is no force acting on the egg.

Bouncing Around

Materials:

Egg

Cup

White vinegar

Place the egg into the cup. Pour vinegar into the cup so that the egg is completely submerged. Let the egg soak in the vinegar for 2 to 3 days. Remove the egg from the cup. Check to make sure the shell has completely dissolved. The egg should feel leathery. Wash the egg with water. Let the egg dry completely for a day or two.

When the egg is dry you can bounce the egg. It will bounce about a foot without breaking. Test to see how high you can bounce it before it breaks. You could also test whether the surface you bounce the egg on effects how high it can bounce.

The egg bounces like a ball because the acidic quality of vinegar dissolves the shell of the egg. You can try to trick your friends and family by "dropping" the egg.