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Think Outside The Box

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Magic Egg Experiment

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Did you know that you could make an egg bounce? Try the Magic Egg Experiment and see how it works.



Egg Bounce Experiment, Woody Thrower

Yes, we know that an egg is so fragile you cannot knock it too hard or it will break. But there is actually a way you can make an egg bounce without breaking it.

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Psychology 101 Part 2



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Materials

Are you ready to make an egg bounce? You will need the following materials for the experiment:

- White vinegar
- Boiled egg
- Glass jar

Procedures

Take a raw egg and boil it. Place the boiled egg inside the glass jar and pour white vinegar into the jar until the boiled egg is fully immersed in it. Put the lid back on and close the jar tightly. Set it aside and away from direct sunlight for a full day and observe what happens to the egg. Leave it for another week before you drain the egg from the vinegar. Rinse the egg in tap water and dry it.

Discussion

What did you observe when you placed the egg into a jar of vinegar? What did you see after leaving it for one whole day?

If you noticed small bubbles forming around the egg, that is completely normal. After some time you will notice that the bubbles grow bigger and eventually rise to the surface of the white vinegar. After some time, the egg will start to float due to the bubbles that have gathered around it. The shell of the egg then starts to decompose because of the vinegar. After a week has passed, notice that the eggshell has decomposed completely. Once you take it out, feel the texture of the egg. It feels leathery doesn't it? Now, what's even more exciting is that it will bounce if you try to bounce it against the floor. Try it!

What is Happening?

Now what is the explanation behind this? The Magic Egg experiment actually demonstrates the process of osmosis. Osmosis is the movement of liquid from a solution of lower concentration to a more concentrated solution through a semi-permeable substance. Permeable means fluids or gases are able to pass through the material. In the Magic Egg experiment, the vinegar slowly diffuses through the eggshell until it dissolves it completely leaving the egg rubbery or leathery in texture.

So what is in the vinegar that gives it the ability to dissolve the eggshell? Vinegar is an acid. Specifically, it contains acetic acid, which reacts with calcium - the primary component of eggshell. As the eggshell breaks down, carbon dioxide is produced which appears in the form of bubbles. Leaving the egg immersed in the vinegar will cause its shell to dissolve completely.

Source URL: <https://explorable.com/magic-egg-experiment>