

CURIOSITY AT HOME

OSMOSIS EGGS



Watch eggs grow and shrink in this eggstraordinary eggssperiment! Explore the process of osmosis as you observe water move through an egg's membrane.

Note: This experiment takes place over a few days.

MATERIALS

- 2 eggs
- Four clear glasses or jars
- White vinegar
- Corn syrup (alternative option: simple syrup solution made by heating equal parts sugar and water)
- Food coloring
- Water
- Spoon
- Science notebook or paper
- Something to write with

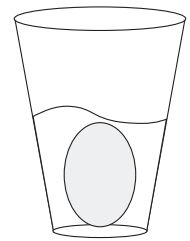
PROCEDURE

- Place each egg in a clear glass or jar. Cover with white vinegar and let stand for 48 hours.
- Make some observations at various points over the 48 hours. What do you notice is happening inside the jars? Write or draw your observations in your science notebook.
- After 48 hours, prepare your two remaining glasses/jars.
 - Fill one jar with corn syrup.
 - Fill the other jar with water and a few drops of food coloring. Stir.
- Using a spoon, carefully remove each egg from vinegar and gently rinse with water. Be very careful not to puncture the membrane – ask an adult for help if needed!
- Transfer one egg into the jar of corn syrup and the other into the jar of colored water.

Experiment continued on next page...



White Vinegar



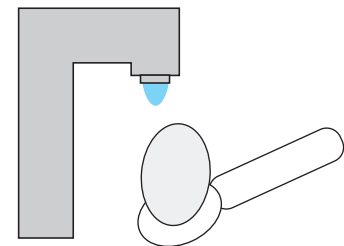
White Vinegar



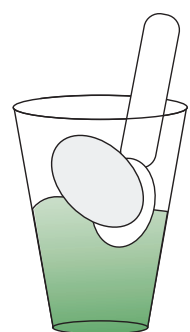
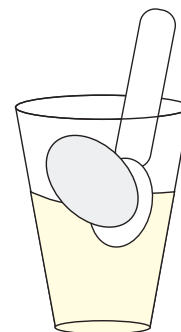
Corn Syrup



Food Coloring



Remove eggs and gently rinse with water.



Transfer one egg into each solution.



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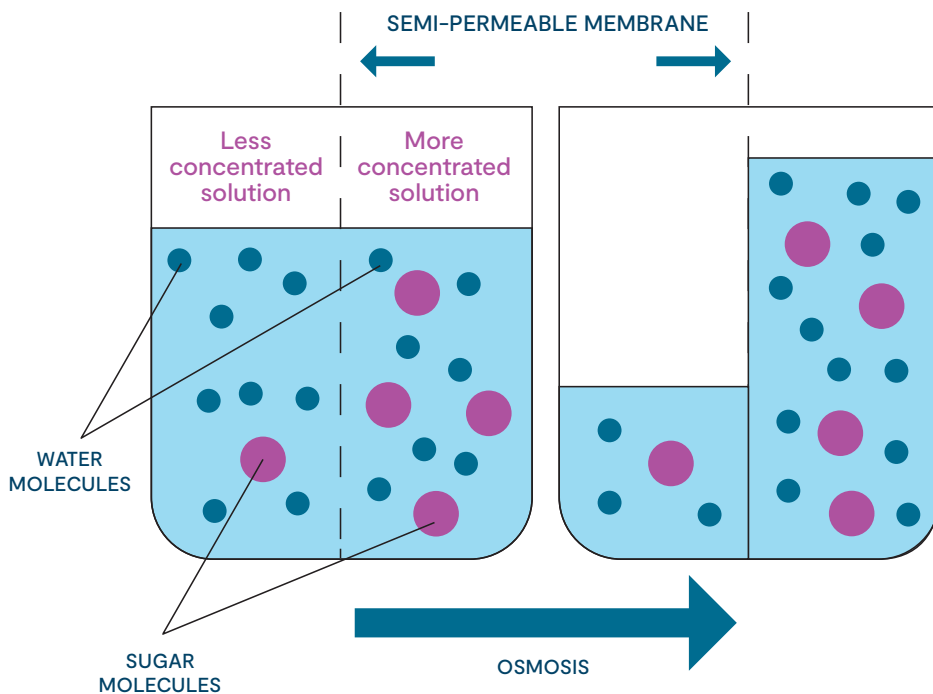
PROCEDURE *continued...*

- Make some initial observations in your science notebook. Draw each egg in its jar and write down what you see.
- Come back in an hour and make more observations—draw or write down what you see.
- Leave eggs for 24 hours. Draw or write your observations.

DID YOU KNOW

Osmosis is the movement of water from areas of higher concentration to areas of lower concentration. Submerging an egg in vinegar causes the acetic acid in the vinegar to break down the calcium carbonate eggshell, exposing the egg's membrane. The membrane of the egg allows water to pass through without letting the contents of the egg escape, much like how the cells in our body work.

In the jar with colored water, there is a higher concentration of water outside the egg, so the water flows into the egg, causing it to swell. Since the concentration of water is lower in the corn syrup than in the egg, water flows out of the egg causing it to shrink and shrivel.



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3–5 GRADE EXPLORATION

- What would happen if you placed your shrunken egg in plain water overnight? Write your predictions in your science notebook, try the experiment, and record your results! What happened to make these changes occur?
- Experiment with your plain eggs by soaking them in other solutions. What happens if you put an egg in salty water?
- In our original experiment, the vinegar dissolved the eggshell. What else can you dissolve in vinegar? Try some chalk or a shell—both have similar ingredients to an eggshell.
- Have you ever been swimming and your hands became wrinkly or pruney? How does this relate to our experiment?



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