



Candy Osmosis

Learn how water travels through membranes as you watch gummy bears grow. Observe osmosis in action using delicious candy!

TEKS:

SCI 4/5.5: The student knows that matter has measurable physical properties and those properties determine how matter is classified, changed, and used.

SCI 4.5 A: The student is expected to measure, compare, and contrast physical properties of matter, including mass, volume, states (solid, liquid, gas), temperature, magnetism, and the ability to sink or float.

SCI 7.6: The student knows that matter has physical and chemical properties and can undergo physical and chemical changes. The student is expected to distinguish between physical and chemical changes in matter.

Materials:

- Gummy candy (gummy bears work best)
- Salt
- 4 small bowls
- Teaspoon measure
- Water

How To:

1. Take out four small bowls and add approximately $\frac{1}{4}$ of a cup of water to each bowl.
2. Add one teaspoon of salt to one bowl, two teaspoons of salt to a second bowl, and three teaspoons of salt to a third bowl. Stir all three mixtures well, until the salt dissolves as much as possible. Leave one bowl as plain water.
3. Place two pieces of gummy candy into each bowl and let them sit for 2-3 hours or overnight. Remember which bowl is which!
4. Observe what happens to each piece of gummy candy.

EXPLORE the WORLD of **STEM** from your HOME

www.STEMatHome.org | [#STEMatHome](https://twitter.com/STEMatHome) | © 2020 by Girlstart www.girlstart.org

STEM at Home is a trademark of Girlstart



STEM Explanation:

You just observed osmosis! Osmosis is the movement of water molecules from a substance that has a lot of water molecules to a substance that only has a few water molecules. And these water molecules move across a membrane that only allows certain things to pass through. In the candy osmosis experiment, the gummy bear had a coating that allowed water molecules to move across it. At first, there were lots of water molecules outside of the gummy bear (a high concentration of water) and only a few water molecules inside the gummy bear (a low concentration of water). This caused some water molecules to move into the gummy bear, through the process of osmosis! Osmosis continued until the water concentration was the same inside and outside the gummy bear.

You may have noticed that the gummy bears in salty solutions did not expand as much as the ones you placed in plain water. This is because adding salt to water causes the overall concentration of water to be lower, so not as much water needs to flow into the gummy bears for the water concentration inside the gummy bears to be the same. What happens if you place your plain water-soaked gummy bear into a saltwater solution?

Career Connection:

Chemists study the properties of matter at the level of atoms and molecules. Their research includes understanding the structure and composition of many different chemicals and even creating new substances that help our lives!

Resources:

<https://sciencedipity.co.uk/gummy-bear-osmosis-experiment/>

https://www.michigan.gov/documents/explorelabscience/Gummy_Bears_and_Osmosis_622469_7.pdf

EXPLORE the WORLD of **STEM** from your HOME

www.STEMatHome.org | [#STEMatHome](https://twitter.com/STEMatHome) | © 2020 by Girlstart www.girlstart.org

STEM at Home is a trademark of Girlstart