Nasco education LESSON PLAN
K TO Career solutions
science
VOL. 11

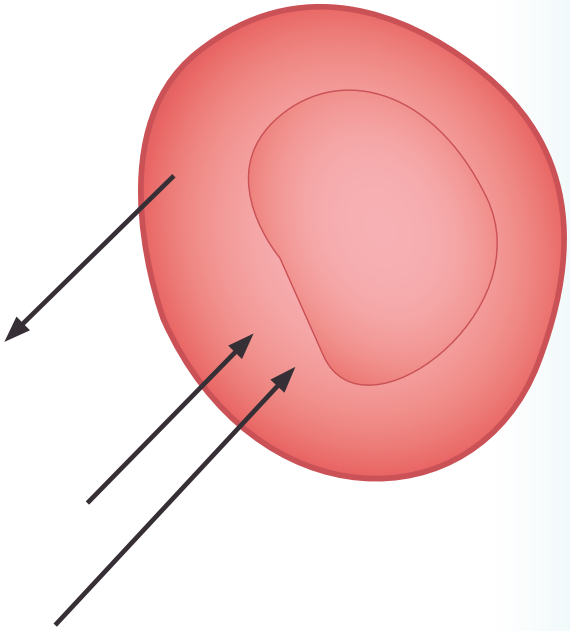
Diffusion • Passive Transport

Developed by Linda Roberts
Grades 3-7

Objectives

Students will...

- Observe and be able to explain diffusion and passive transport.
- Be able to determine the difference between a cell wall and cell membrane.



Materials

- Clear Plastic Cups, 10 oz. (Cat. No. SB41297)
- Plastic Sandwich Bags with Twist Ties (do NOT use zip-close bags)
- Cornstarch and Water Mixture
- Iodine, 100 ml (Cat. No. KM00626) and Water Solution
- Safety Goggles (Cat. No. SB46780)

Demonstration

This is a quick demonstration to make diffusion through cell membranes easier to understand. **Tell the students not to taste any of the materials.**

- Mix cornstarch with water until you have a slightly watery mixture. Make enough so each student can have about ¼ cup of mixture.
- Add about a teaspoonful of iodine to a beaker of water. The color should be light brown. Make enough so each student can have about ¼ cup of the solution.
- Add a small amount of the cornstarch mixture to a small amount of the iodine solution in a clear cup to show students what happens when they are mixed. The mixture should turn blue/black.
- Give each student a plastic bag with a twist tie containing about ¼ cup of the starch mixture. Each student will also need a plastic cup with about ¼ cup of the iodine solution. Place the plastic bag with cornstarch into the cup with the iodine solution (be careful not to overfill the cup).
- After about 15 minutes, students will notice the cornstarch in the plastic bag changing color to blue/black.

Discussion

Q: How did the iodine get into the bag of cornstarch?

A: The plastic bag is permeable. It has tiny holes in it that let the iodine in.

Q: Why didn't the cornstarch come out of the bag?

A: The holes in the bag are too small to allow the cornstarch molecules to move out of the bag. Introduce the idea of selective permeability in a cell. Only certain things can come into the cell (water, oxygen, nutrients), and certain others are released from the cell (waste products).

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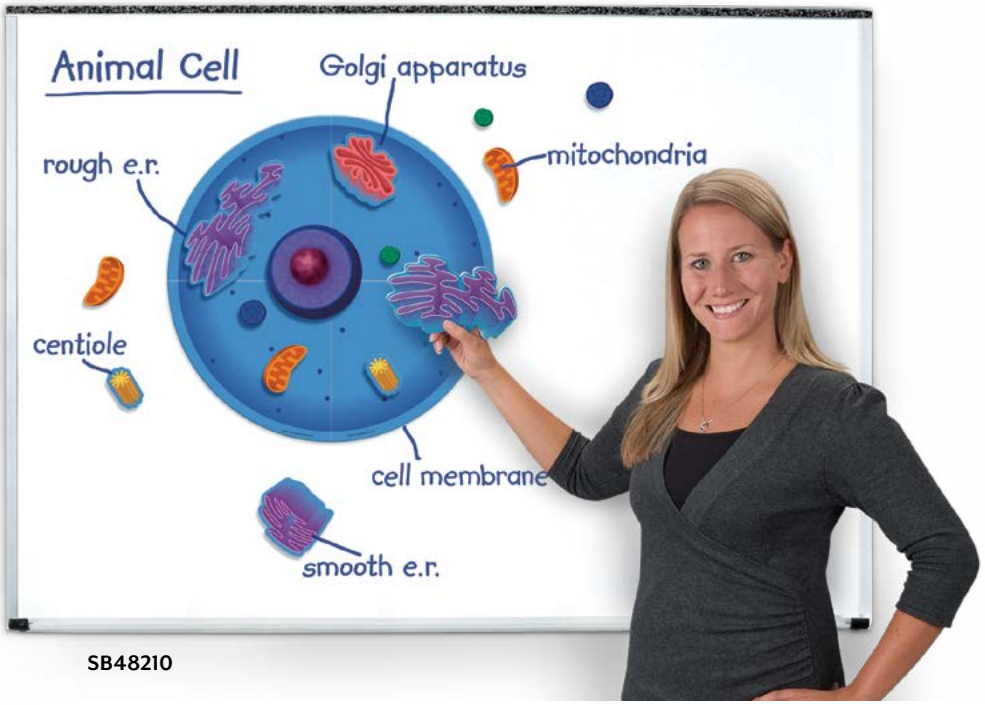

SB48210

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4D Science™ Cell Complete Model Set

Assemble models to better understand composition and structure of plant and animal cells. Each model features detailed parts and transparent outside for viewing internal structures. 16". ⚠ CHOKING HAZARD (1). Not for under 3 yrs.
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Cross Section Models
SB42003 Animal Cell (Blue)
SB42002 Plant Cell (Green)

CHOKING HAZARD (1) ⚠ **WARNING: CHOKING HAZARD** — Small Parts. Not for children under 3 yrs.

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