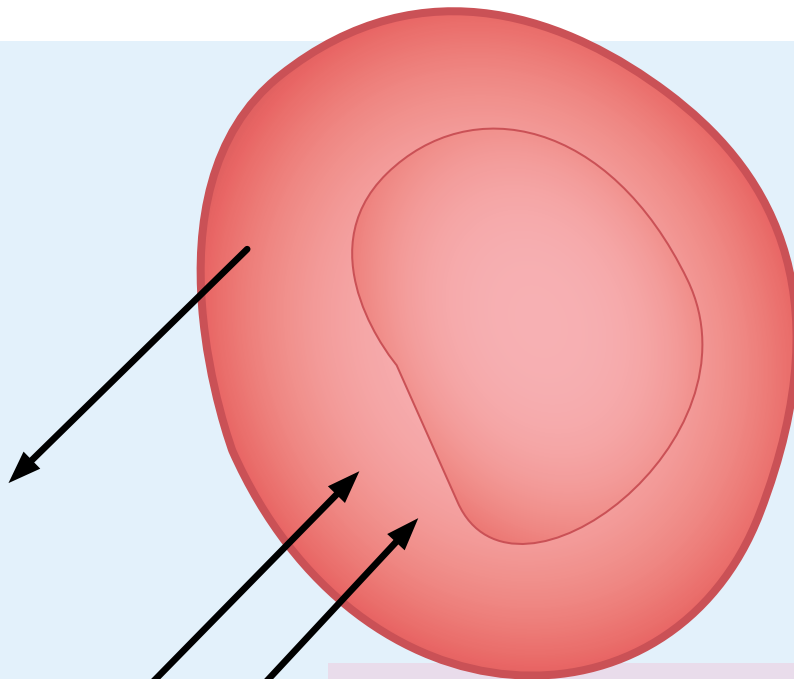




Diffusion – passive transport



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

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 $\frac{1}{4}$ 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 $\frac{1}{4}$ 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 $\frac{1}{4}$ cup of the starch mixture. Each student will also need a plastic cup with about $\frac{1}{4}$ 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.

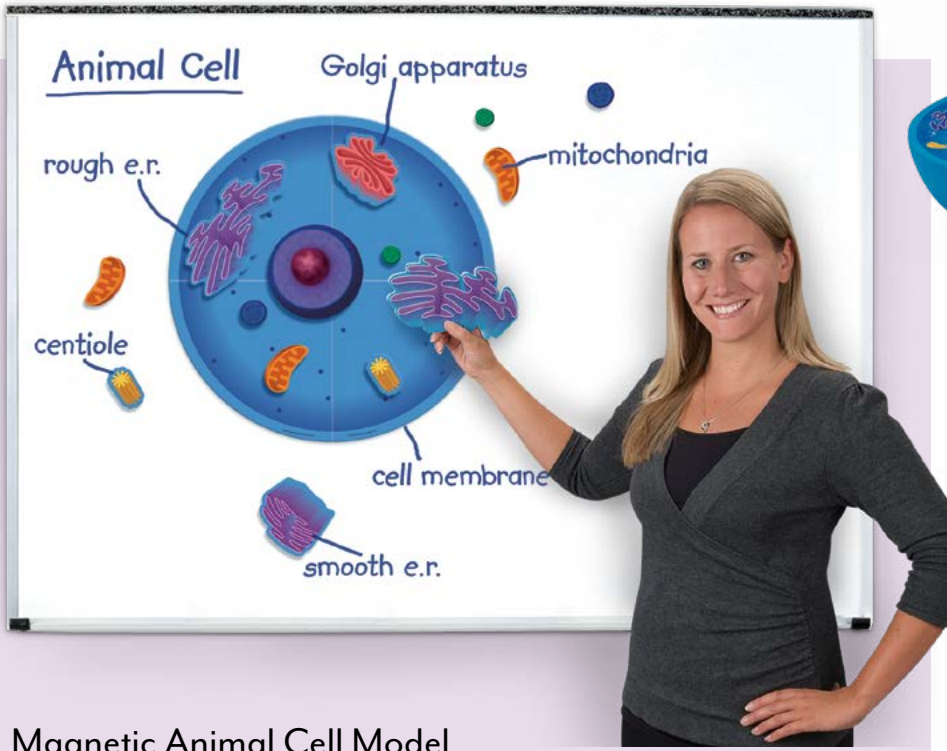
Q: Why didn't the cornstarch come out of the bag?

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).

Materials list

- Clear plastic cups, 10 oz. ([SB41297](#))
- Plastic sandwich bags with twist ties (do NOT use zip-close bags)
- Cornstarch and water mixture
- Iodine, 100 ml ([KM00626](#)) and water solution
- Safety goggles ([SB46780](#))

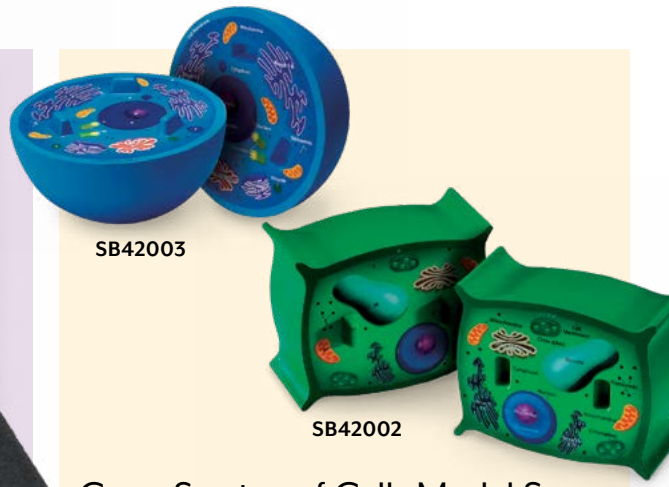
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Magnetic Animal Cell Model

Cell structures are printed on raised foam magnets for a 3-D effect. Coordinates with animal foam cell model. Includes guide.

SB48210



SB42003

SB42002

Cross Section of Cells Model Set

5" foam cross sections of a plant cell and an animal cell. One side in each cross section is labeled, the other side can be used for quizzes. Cross sections identify key organelles and their functions and comes with guide.

SB42004

Cross Section Models

SB42003 Animal Cell (Blue)

SB42002 Plant Cell (Green)

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.

SB51409

Animal. 26 detachable parts.

SB49141

Plant. 24 detachable parts.

SB49142



SB49141



SB49142

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