



HANDS-ON ACTIVITY

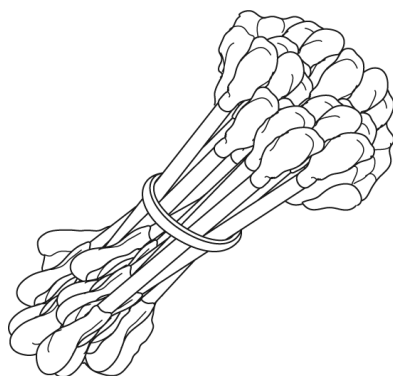
Modeling the Cell Membrane

PREDICT

How does the cell membrane regulate what moves into and out of the cells?

PROCEDURE

1. Bundle the cotton swabs as shown.



2. Make a receptor from one pipe cleaner. It should extend through the bunch of swabs and have a region that would bind to a signal molecule. Use the other pipe cleaner to make a carbohydrate chain. Insert the chain into the “membrane” of the bunch of swabs.
3. Cut the drinking straw in half and insert both halves into the bunch of swabs.

ANALYZE

1. How do the swabs represent the polar and nonpolar characteristics of the cell membrane?

2. In this model, the swabs and proteins can be moved around. Explain whether this is an accurate representation of actual cell membranes.

EXTEND

Using materials found in your classroom or at home, add additional components to your cell membrane model, such as cholesterol and carbohydrate chains. Choose materials that accurately reflect the structure of function of these molecules.

MATERIALS

- cotton swabs (25)
- drinking straw
- pipe cleaners, assorted colors (2)
- rubber band, thick medium-sized
- scissors

