# Year 11 Biology: Practical Activity

# Movement of Materials across a Membrane

## Background Information

When substances enter or leave a cell, they must pass through the cell membrane. This structure is semi-permeable and only allows certain substances to cross. Materials can move into cells by diffusion, facilitated diffusion, osmosis, active transport or exocytosis. This practical activity will investigate osmosis and diffusion.

**Aim**: to investigate osmosis and diffusion in cells.

**Materials**:

Part A- rhubarb petioles, distilled water, sucrose solutions (0.1 and 1.0 M), microscope, slides, coverslips and forceps.

## Method:

Step 1. Peel off a small portion of the pink epidermis from a rhubarb petiole. Place it in a drop of distilled water. After 15 minutes, cover with a coverslip and observe under the microscope using high power. Draw a cell from the epidermis and label fully.

Step 2. Repeat Step 1 using sucrose solutions of 0.1 and 1.0 M.

## Questions:

1. Describe the differences between the three cells you have drawn, paying particular attention to the size of the vacuole.
2. What is osmosis?
3. Explain the role of osmosis in causing the differences in the three cells you have drawn.

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