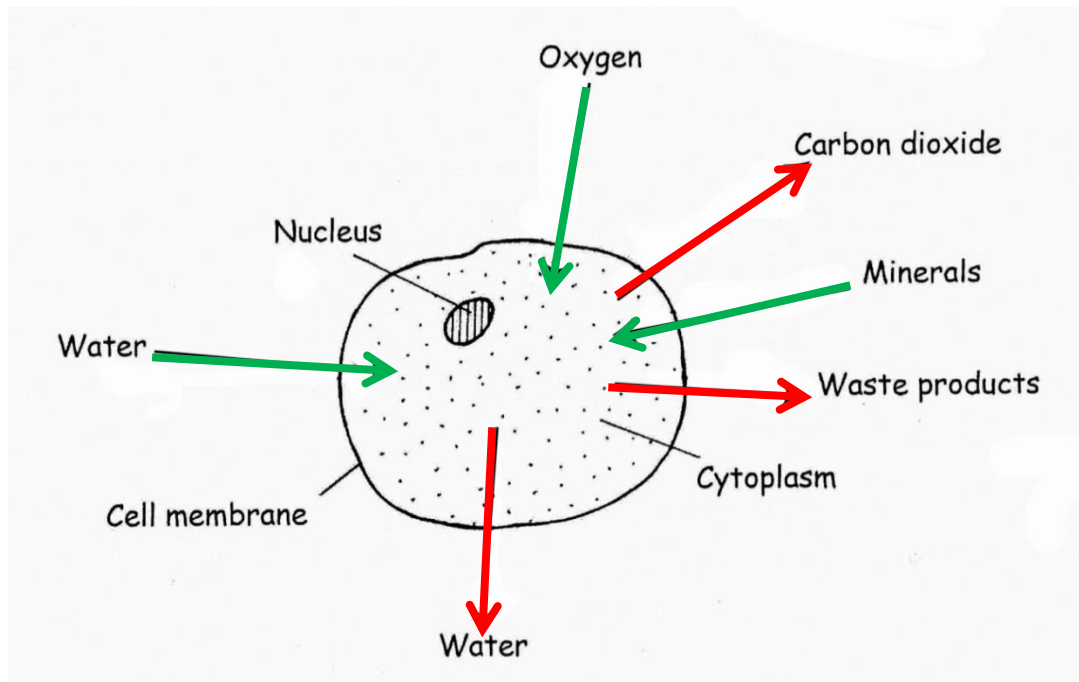


# What Moves In and Out of Cells?

Living things need substances to move 'in' and 'out' of their cells. The **cell membrane** controls what passes in and out of the cell.

Substances that move in and out of the cells of living things include **oxygen, carbon dioxide, water, glucose** and **minerals**.



## Activity 4

1. Which part of the cell controls what substances move in and out?

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2. Name 2 substances that move into a cell.

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3. Name 2 substances that move out of a cell.

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# Cell Respiration

Respiration is a process where energy is released from glucose. It happens all the time in the cells of animals and plants. Aerobic means in the presence of oxygen.

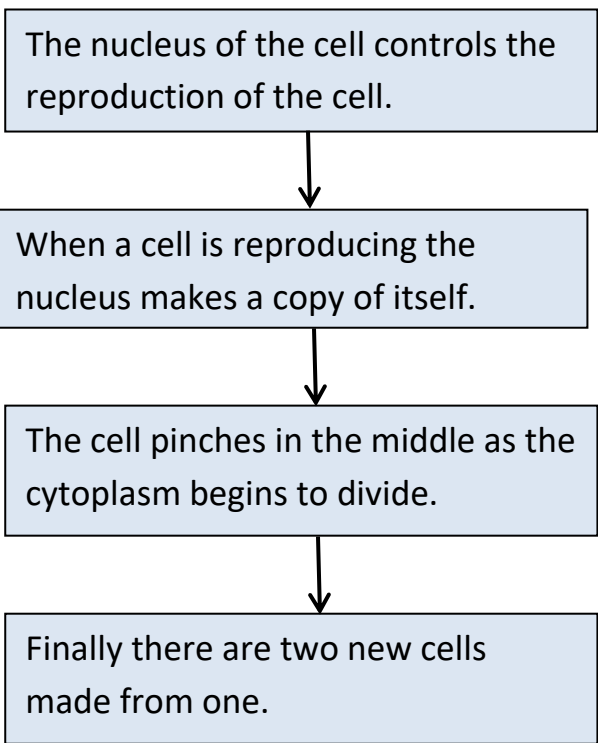
Aerobic respiration uses oxygen and water to make glucose. Carbon dioxide and water are also made but are not needed, so we call them waste products.

The **water** and **oxygen** used **move into** the cell through the cell membrane and the **water** and **carbon dioxide** made **move out** of the cell the same way.

# Cell Division

Scientists have found out that **healing and growth is mainly the work of cells.**

For healing to occur, more skin must be made. Cells must be able to reproduce. Cells need to be **able to divide** for growth and repair.



## Activity 5

1. Why do cells divide? \_\_\_\_\_



# Experiment 1

**Aim:** To make a 3D model of a cell.

## Equipment

Lemon (or uncoloured) jelly

Water

Jug

Small bowl

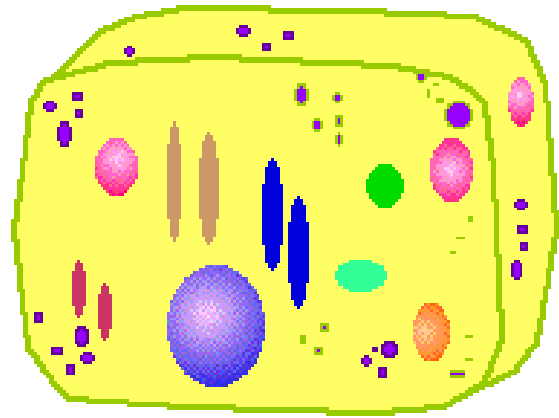
Spoon

Kettle

A small zip lock bag

Lollies and/or fruit (eg sultanas, gummy lollies, jelly beans, grapes, M&M's)

Fridge



## Method

1. Make the jelly in a jug following the directions on the packet. Use slightly less water than suggested.
2. Allow jelly to cool slightly.
3. Place the zip lock bag into the bowl and open the top of the bag.
4. Pour the jelly into the open zip lock bag.
5. Place the bowl and bag into the fridge and allow the jelly to almost set (about one hour).
6. Take the bag out of the fridge and push lollies and fruit into the cell to represent the different cell parts; nucleus, chloroplasts, vacuoles.
7. Return the bowl and bag to the fridge and allow jelly to completely set.
8. Remove jelly from fridge and eat!

## Observations

1. What was used to represent the cytoplasm? \_\_\_\_\_
2. What did you use to represent the nucleus? \_\_\_\_\_
3. What does the zip lock bag represent? \_\_\_\_\_