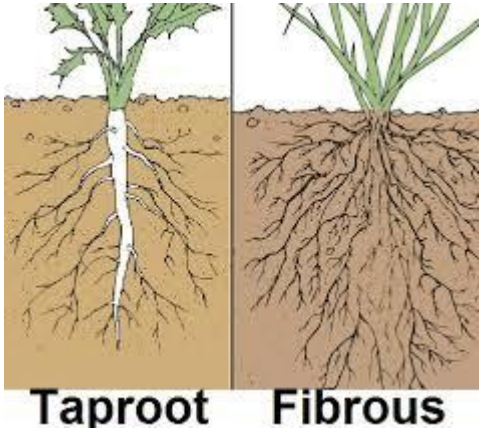
Structures

Topic 2

Roots

- Roots perform **several important functions**
- They **absorb water and minerals** from the soil
- They **support and anchor** the plant, so it is not blown over by wind or washed away by water
- They **store food** to help the plant survive

- Most plants have a single, strong **taproot** with many **smaller roots** coming out of it
- These smaller roots are covered in tiny **root hairs** that can help absorb more nutrients
- Other plants have **fibrous roots**, a shallow system of **similar sized** roots

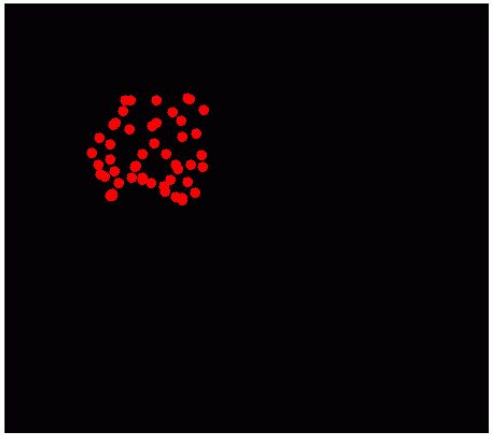


Roots Crops

- Many plants that we eat are **root vegetables**
- **Carrots, beets, turnips, radishes and parsnips** are all roots
- Root crops generally **grow quickly** and can survive in harsher climates

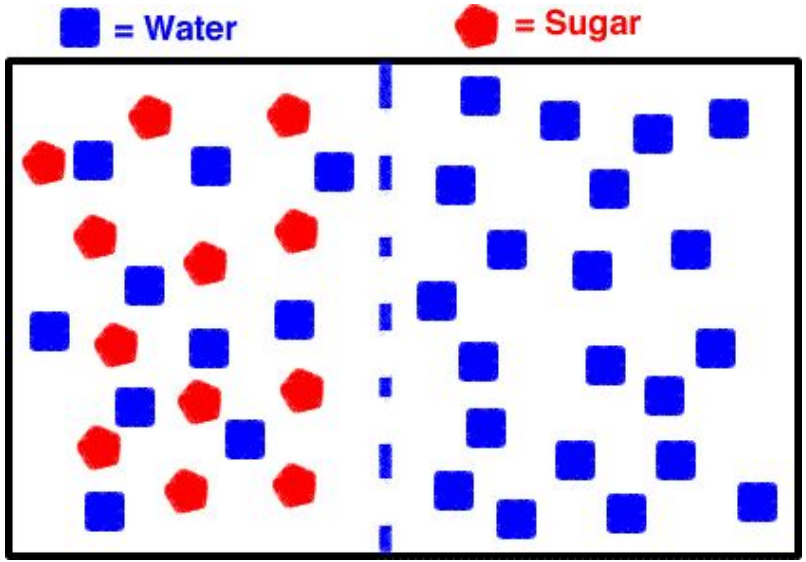
Diffusion and Osmosis

- Diffusion and osmosis are two key processes that allow plants to absorb water and nutrients
- Diffusion is the tendency of particles to spread evenly, by moving from an area of high concentration to an area of low concentration



Osmosis

- Osmosis is a similar process to diffusion, but is the diffusion of water through a semi permeable membrane
- Semi permeable membranes only allow certain particles to travel through them



Voacb Time!

Stems

- Stems perform many functions for plants
- They are the support, food storage and transportation system for plants
- Since plants absorb water through their roots they must move the water and nutrients up to the leaves
- The stem contains xylem which moves water from the roots to the leaves

Storage

- Stems (similar to roots) store extra food for the plant
- Potatoes are large swollen stems known as tubers
- Sugar cane is a stem that stores food as a sugar for later use

Support

- Stems can range in size depending on the size of the plant
- Stems direct the plants towards the light source
- Stems can grow up to 110 + metres tall

Different Types of Stems

- Stems that grow horizontally such as strawberries are called **runners**
- Fleshly horizontal underground stems are called **rhizomes**, such as the ones found in **cattails**
- Some plants have **flattened stems, such as cacti**

Leaves

- During spring and summer a pigment called **chlorophyll makes leaves green**
- Most of the chlorophyll is in the top of **leaves**
- When water and sunlight combine they create **sugar** through **photosynthesis**
- Carbon dioxide enters the leaves through the **stoma**

Respiration

- In addition to **photosynthesis**, plants go through **respiration**, which is the same process that animals use to breathe