

Plants

Characteristics

- * **All Plants:**

- * Are Multicellular

- * Have cell walls made of **cellulose**

- * Do not move

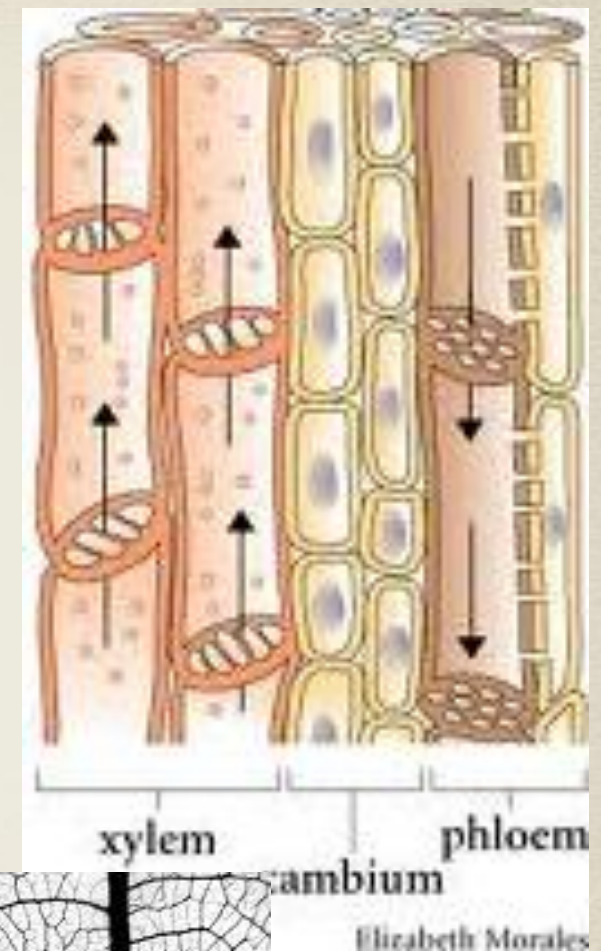
- * Use **photosynthesis** to make food

Plant Divisions

- * Some plants have different properties than others
- * Scientists put these plants into groups:
 - * **Mosses**
 - * **Ferns**
 - * **Conifers**
 - * **Flowering Plants**

Plant Vascular Tissue

- * Some plants have **Vascular Tissue**
- * These are tubes that carry water or sugar to different parts of the plant
- * **Xylem**-carries water
- * **Phloem**-carries sugar



Mosses



- * Short plants (less than 10cm tall)
- * Live in damp places
- * Simple roots (do not absorb water)
- * No vascular tissue
- * Use spores to reproduce



Ferns



- * Have vascular tissue
- * Have stems, leaves & roots
- * Reproduce using spores
- * Very old plants



Conifers

- * Have vascular tissue
- * Have stem, roots & needle shaped leaves
- * Reproduce using seeds in cones
- * Most are 'evergreens'



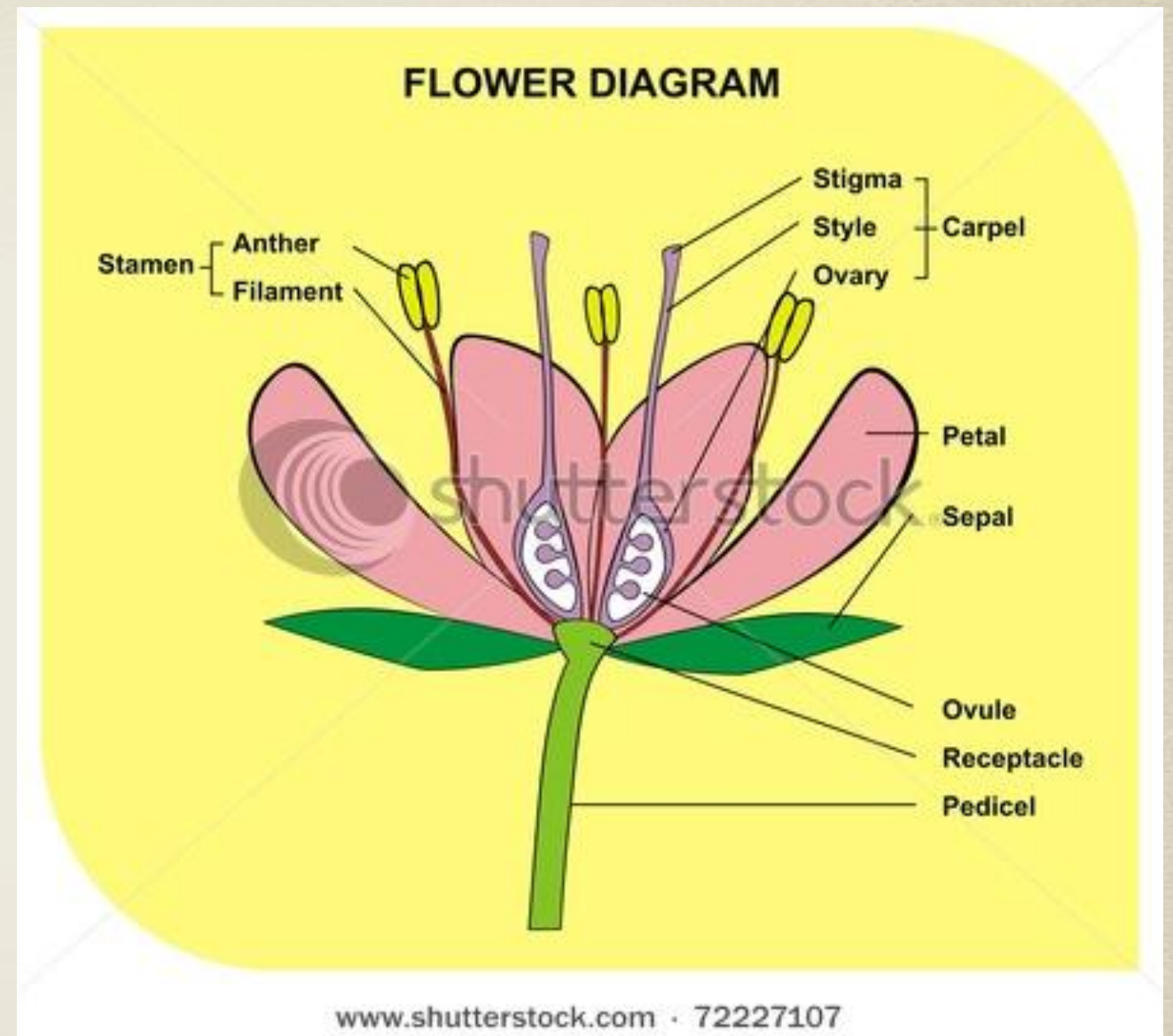
Flowering Plants

- * Have vascular tissue
- * Have stem, roots and broad leaves
- * Reproduce using seeds made in flowers & fruit



Flowers

- * Flowers have several parts
 - * **Stamen**-make pollen
 - * **Stigma**-receives pollen
 - * **Petals**-colorful leaves attract pollinators
 - * **Sepals**-protective leaves



Fruit

- * Fruit protects the seeds of the plant
- * The flowers turn into fruit when the pollen enters the stigma



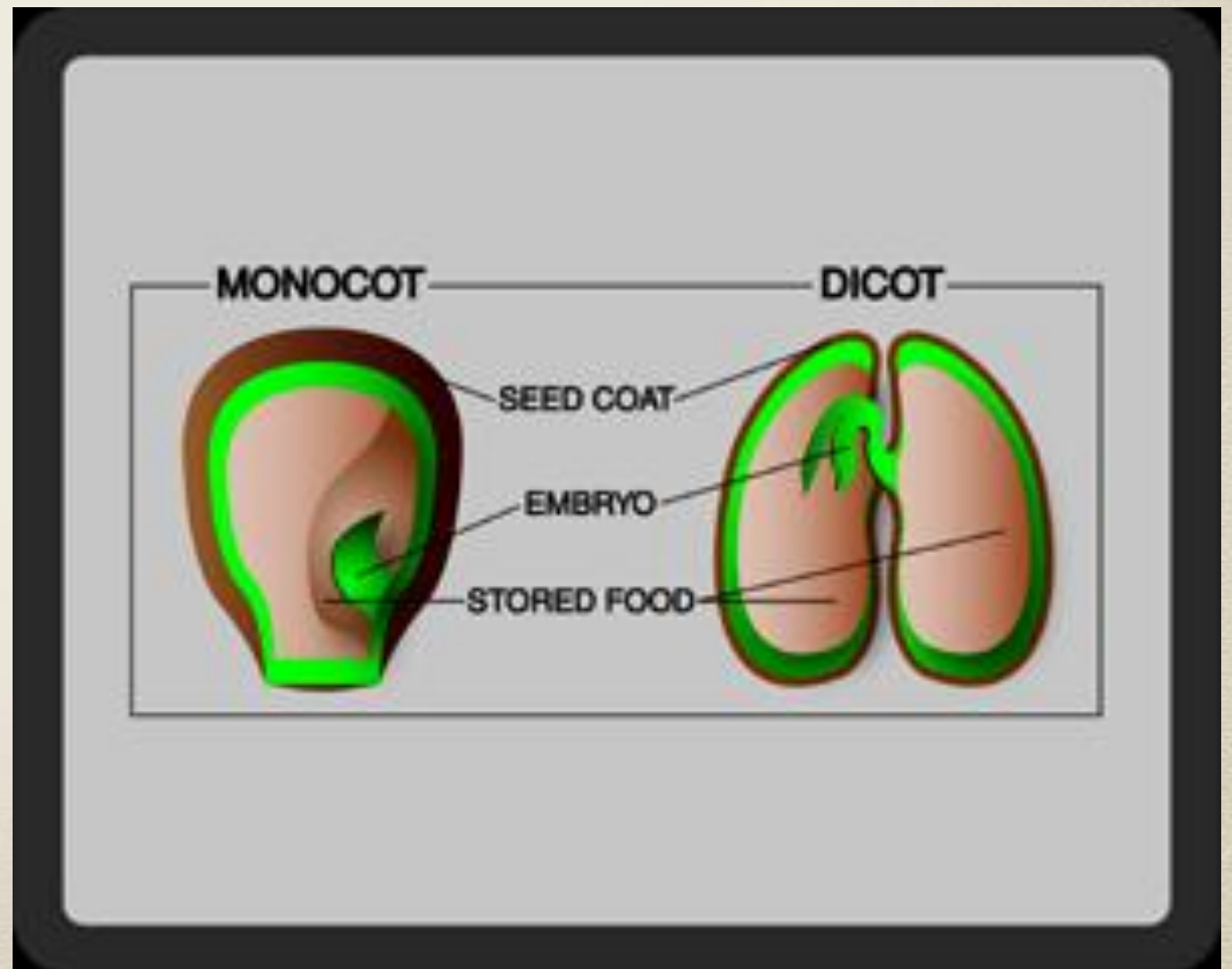
Seeds

- * A seed has everything a baby plant needs to grow
- * **Embryo**-the baby plant
- * **Cotyledon**-the ‘seed leaf’ has food for the baby plant to grow until it can make leaves



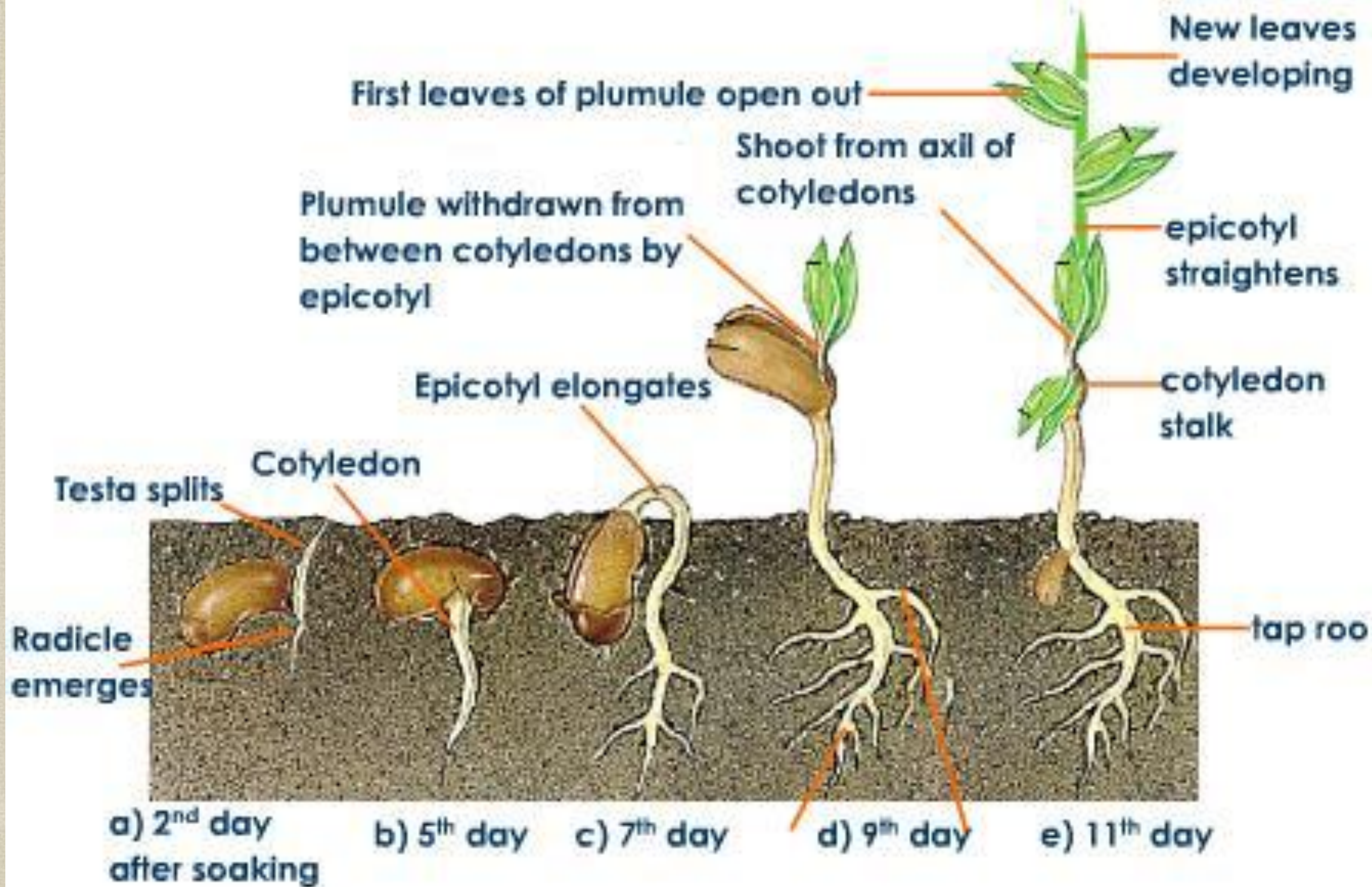
Seeds

- Plants are grouped based on the number of cotyledons they have
 - **Monocot**-only 1 seed leaf
 - Corn
 - **Dicot**-2 seed leaves
 - Lima Beans



Germination

- **Germination**-When a seed starts to grow into a plant
- How fast this happens depends on:
 - **Water**-seeds are very dry, they need to absorb water before the cells can grow again
 - **Oxygen**-seeds need oxygen for respiration, to make the ATP so their cells can grow
 - **Temperature**-all plants have a specific temperature that they like the most

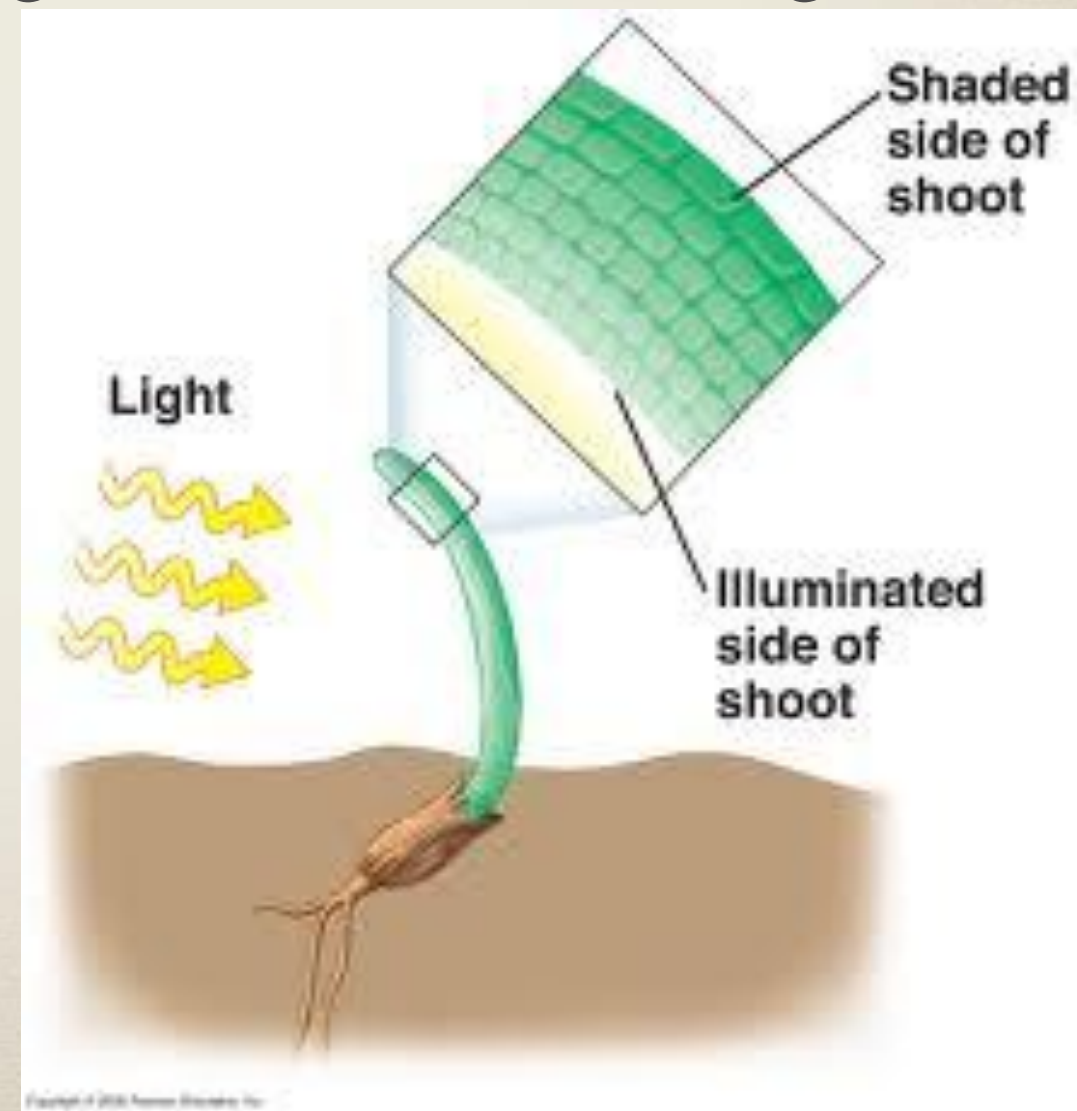




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Plant Response

- Plants can respond to their environment:
- **Phototropism**-plants will grow towards the light



Plant Response

- **Geotropism**-roots will grow down, stems will grow up, regardless of how you plant the seed



Plant Resources

- Plants need:

- Water

- Sunlight

- Carbon Dioxide



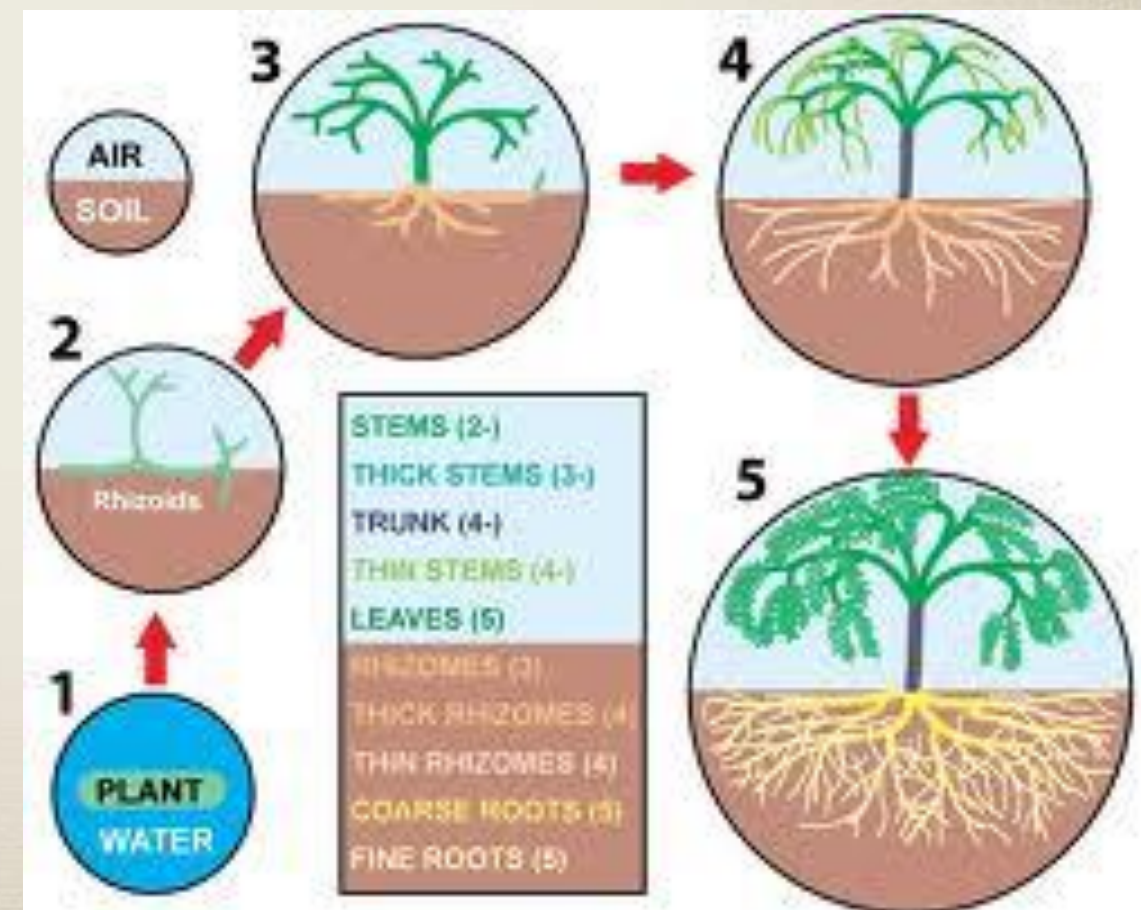
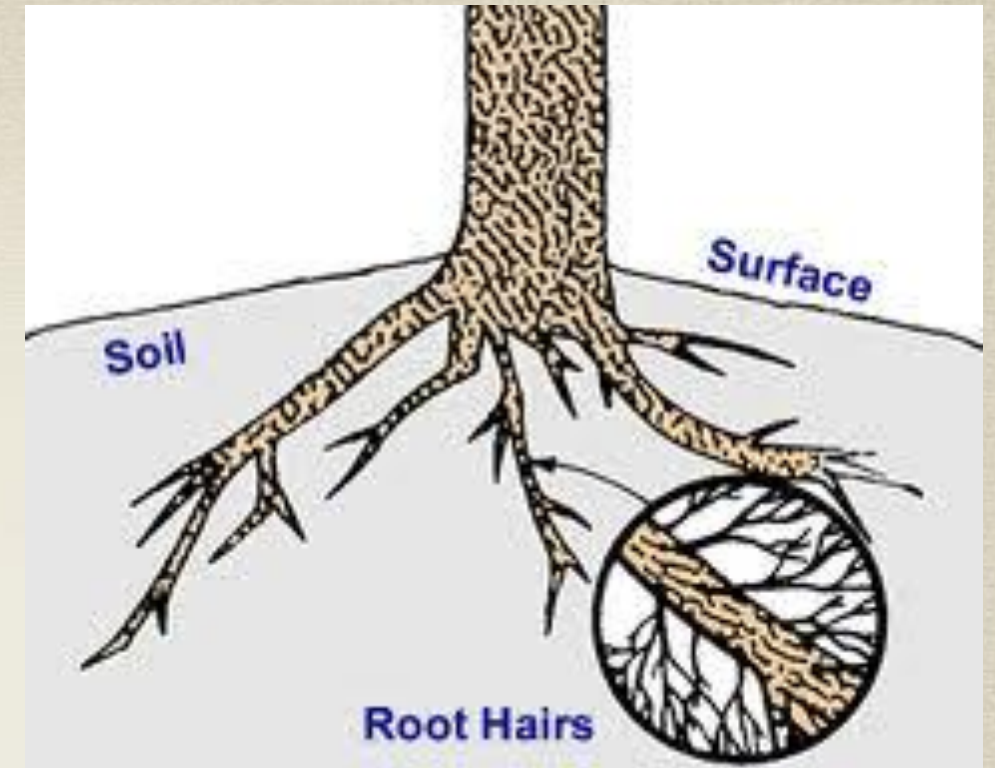
- These are their **resources**

- If the baby plant does not get enough of these, it will die



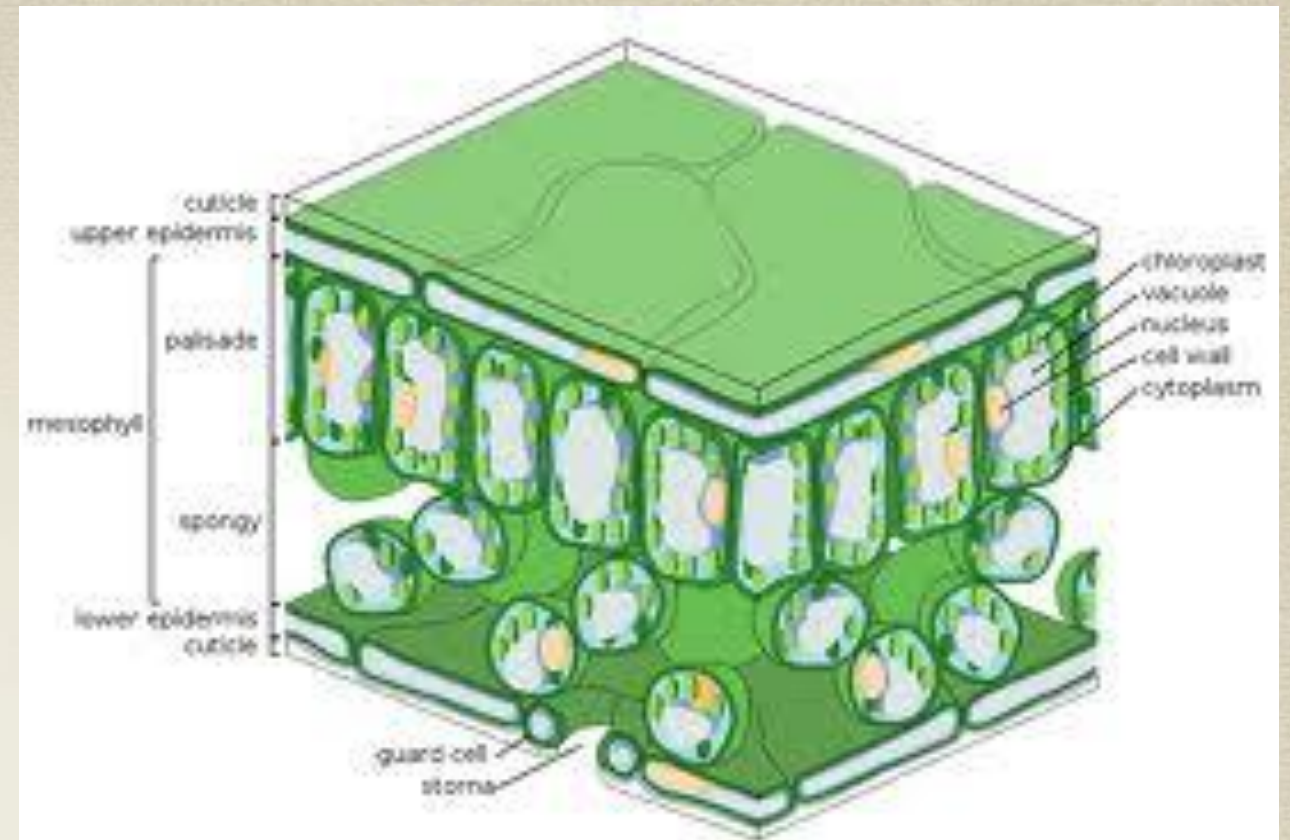
Water

- Plants get water from their roots
- Each root is covered with many, tiny roots called **Root Hairs**
- These help the plant absorb more water
- The water goes to the leaves through the **xylem**
- Roots can sense water and will grow towards it



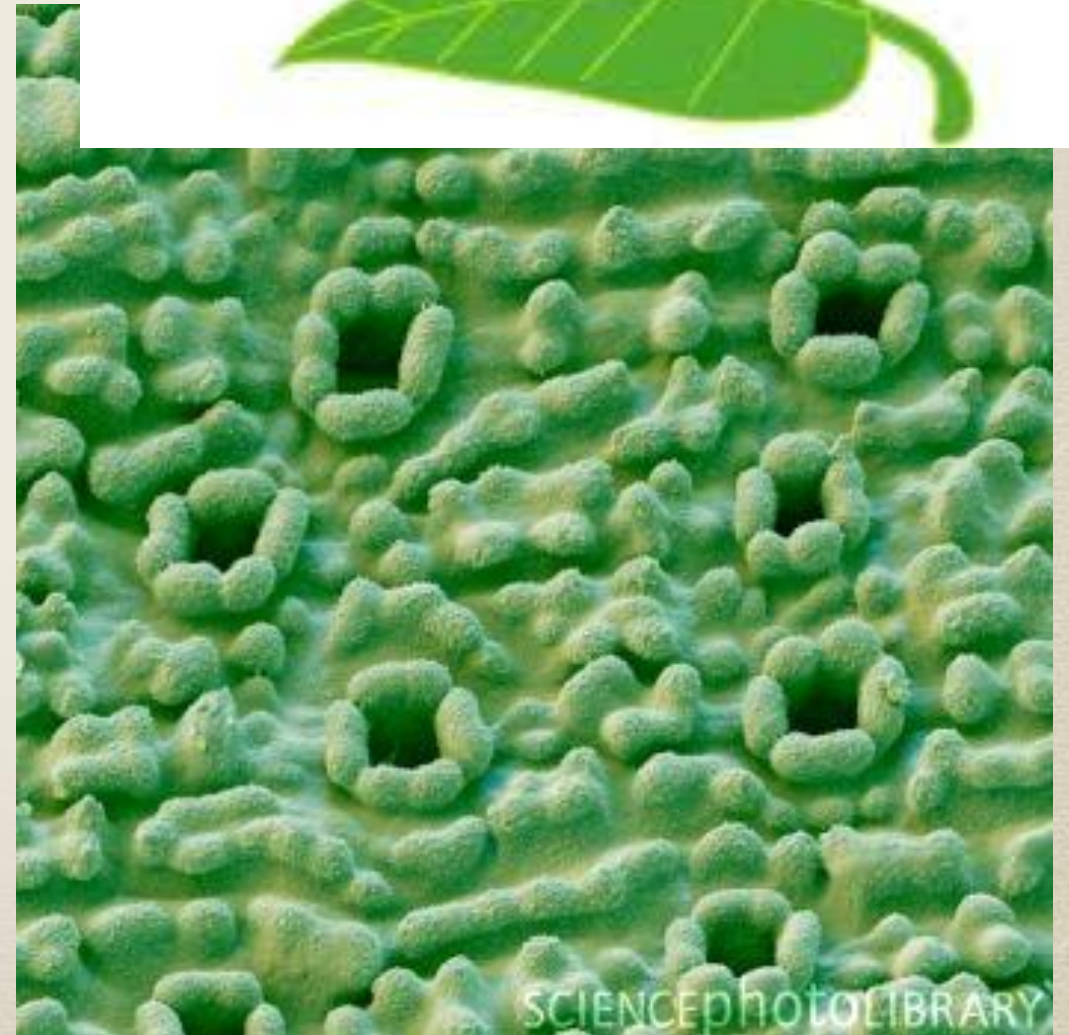
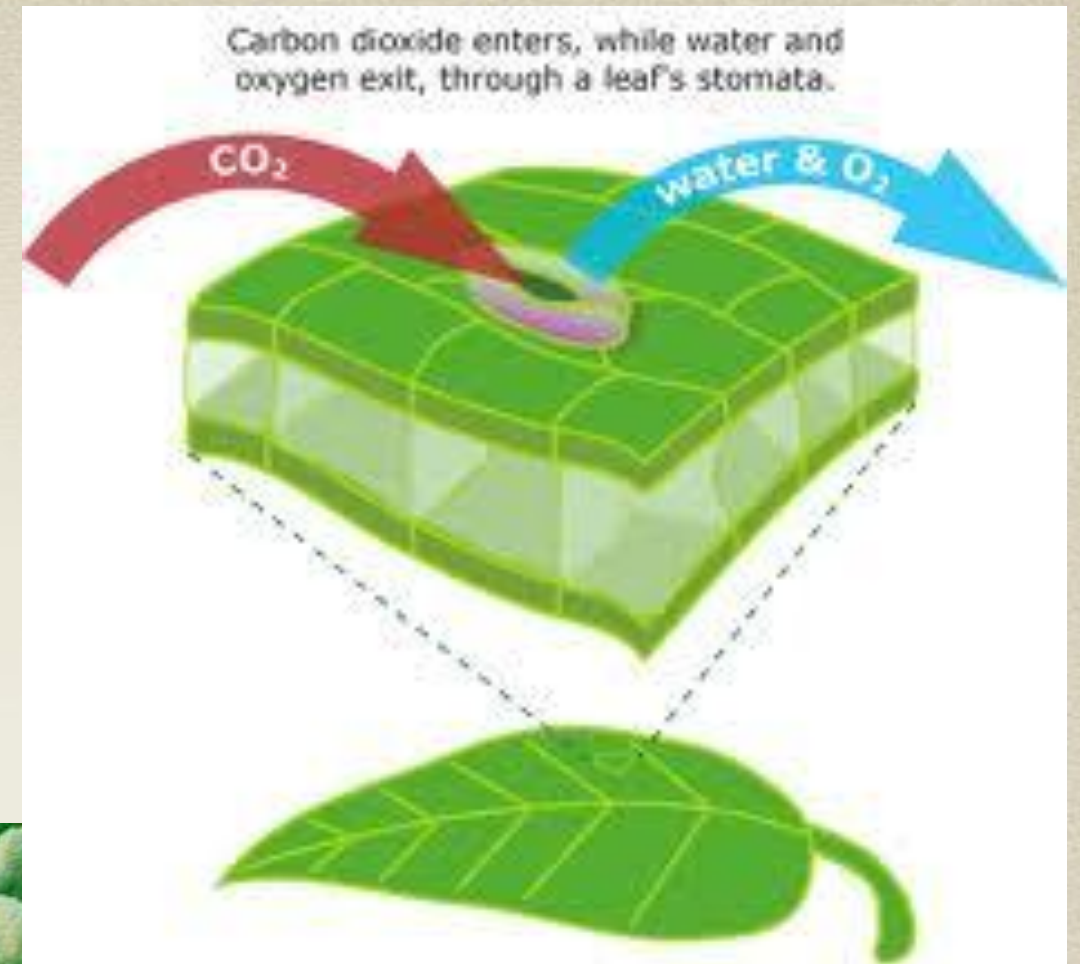
Sunlight

- Plants use **photosynthesis** to make the glucose that they use for food
- The cells in leaves have lots of chloroplasts
- The leaves carry the sugar to the rest of the plant through the **Phloem**
- Leaves tend to be very broad to catch as much sunlight as possible



Carbon Dioxide

- Plants use carbon dioxide to build glucose
- The leaves pull in carbon dioxide through holes in the bottom of the leaves
- There are holes in the leaf called **stomata**
- Oxygen also comes out of the stomata



Seed Dispersal

- Since plants do not move, where the seed falls is very important
- If it falls too close to the parent plant, the seedling will die
- Plants have developed ways to move their seeds to different places



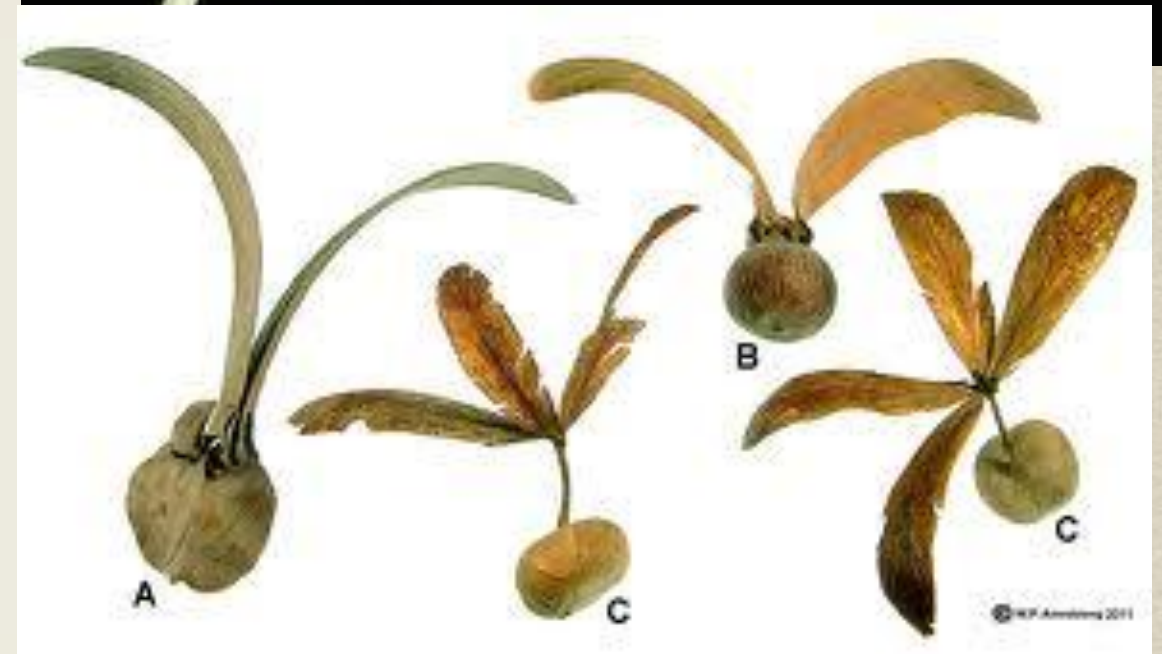
Gravity

- Gravity pulls everything down
- The seeds are in heavy fruits that fall when they are ripe
- The round fruits roll away from the tree
- The fruit then breaks down and fertilizes the seed



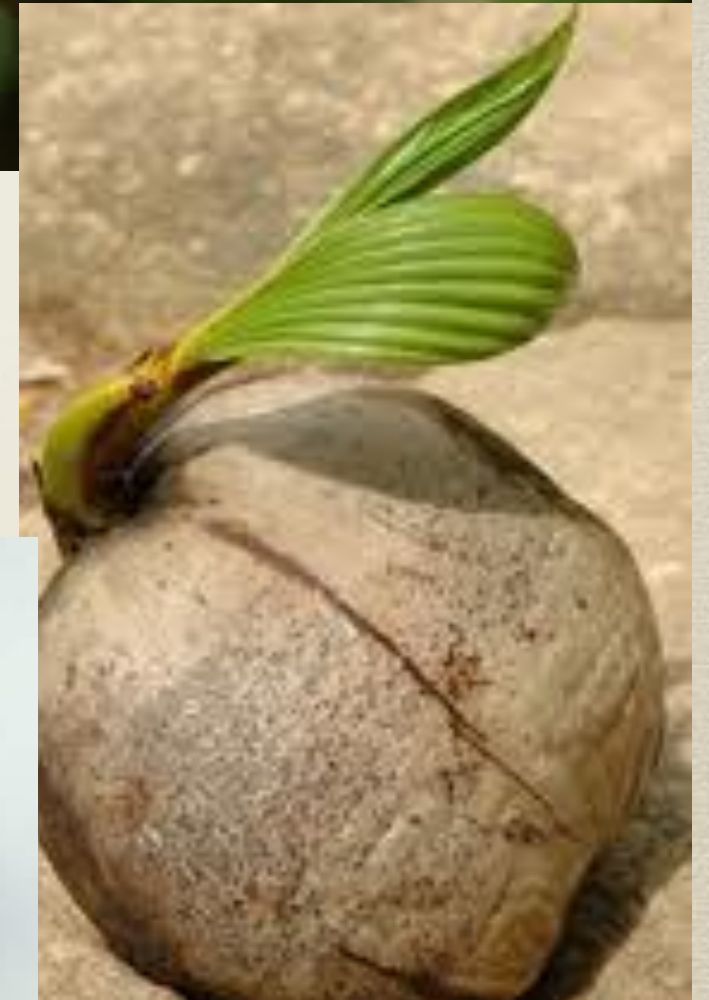
Wind

- Some plants make very light seeds
- These seeds are carried away from the plant by the wind when it blows
 - Some are parachutes
 - Some are helicopters
 - Some are gliders



Water

- Some plants make seeds that can float
- These are carried by water to new places
- When they run into ground, the seeds will germinate and a new plant will grow



Animal

- Some seeds are carried away by animals
- Some are in fruits that are eaten and the seeds pass through the digestive system
- Some attach to the animal's fur and brush off later

