


# SPROUT

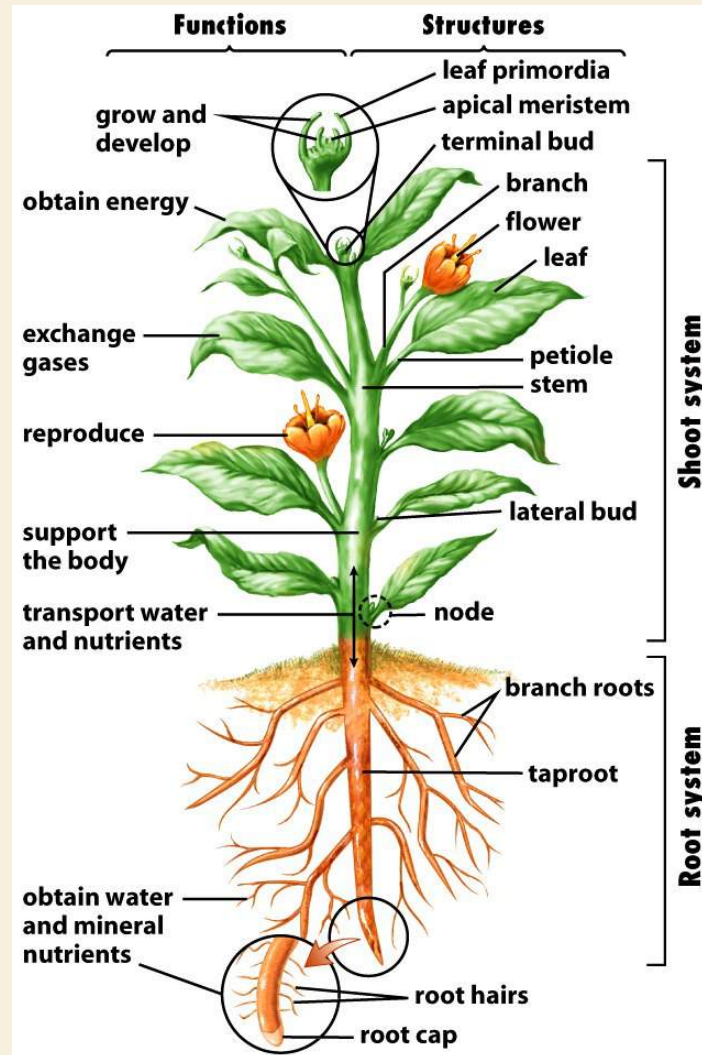
The logo for 'SPROUT' features the word in a bold, sans-serif font. The final letter 'T' is replaced by a magnifying glass icon. Inside the lens of the magnifying glass, there is a small green plant with two leaves.

How Plants Get Nutrients

# POSSIBLE TOPICS

- Plant Structure
- Root Structure
- Water Retention
- Soil Type Relative to Water Retention
- Plant water needs (Wet plants (Rice) vs Dry Plants (Desert plants))
- Leaf Structure
- Photosynthesis

# ANATOMY OF A PLANT STRUCTURE / FUNCTIONS

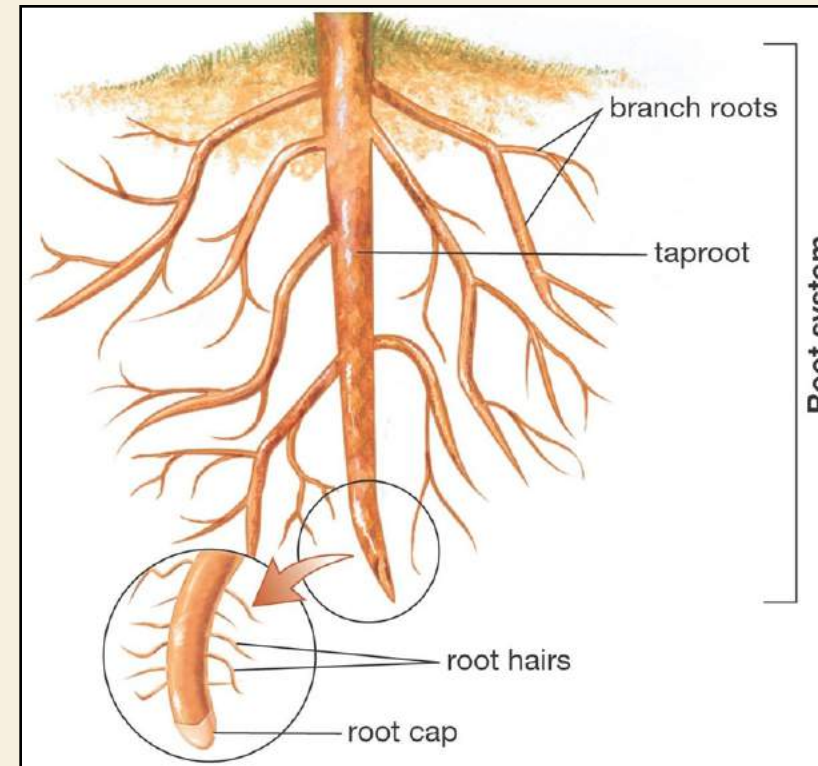


# Root System Functions

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- Anchor plant (Keeps it upright.)
- **Absorb water and minerals.**
- Store sugar as starch.
- **Transport materials**
- Produce some hormones.
- Interact with soil microbes.



# WATER ABSORPTION

So plants get their nutrients from absorbing water. The water needs to contain the necessary nutrients/minerals.

The nutrients/minerals are from the soil that the plants are planted and the water in the soil around the plant will absorb the minerals.

This is why soil choice is important as it is the source of the nutrients for the plant.

# WATER RETENTION IN SOILS

Depending on the soil type that is required by the plant there is different water retention capacities.

We need to ensure that the soil stays moist enough for the roots to reach the water so they can absorb the nutrients.

Some soils are easily drained and need to be watered more frequently than other soils that can retain the water for long periods.

However this does not mean that keeping the soil flooded is a good idea as well as this makes for less oxygen for the plant which will stunt its growth.

A balance needs to be reached for optimal growth.

Sand -> Drains fast

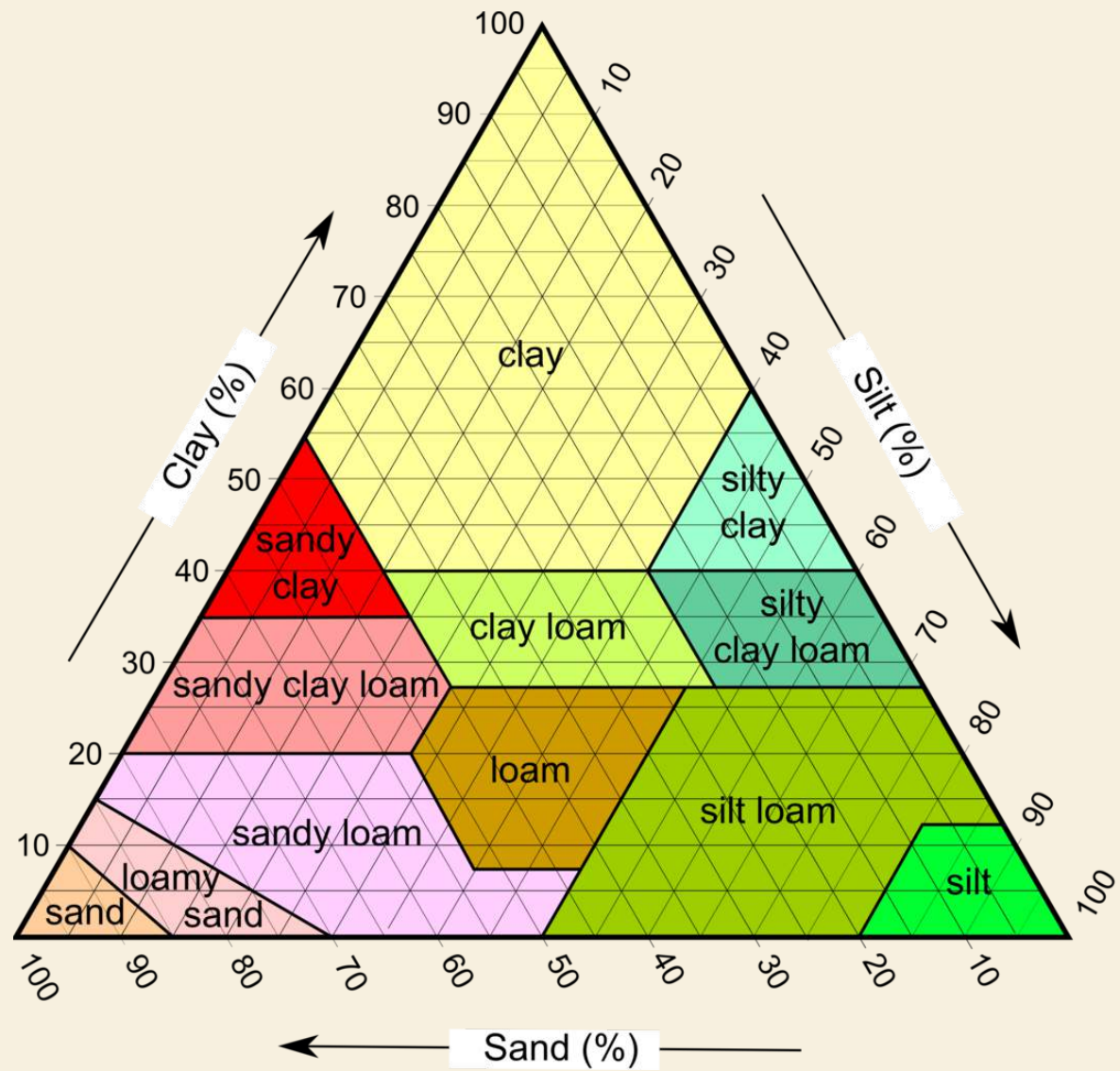
Clay - > Moderately Drains

Silt -> Barely Drains

Gardeners / Farmers tend to go for a mixture of these 3 types of soil = Loam

A soil triangle (in the following slide)

This is a guide on how to tell what soil you have depending on the composition % of each component (Sand/Silt/Clay)

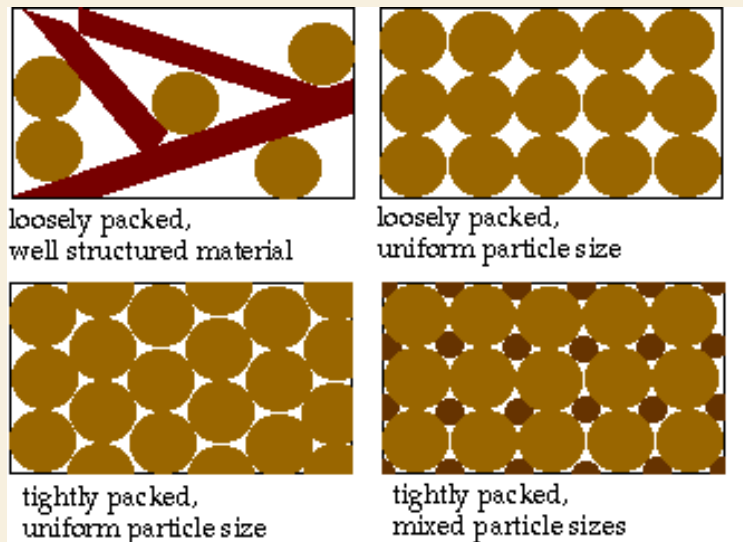




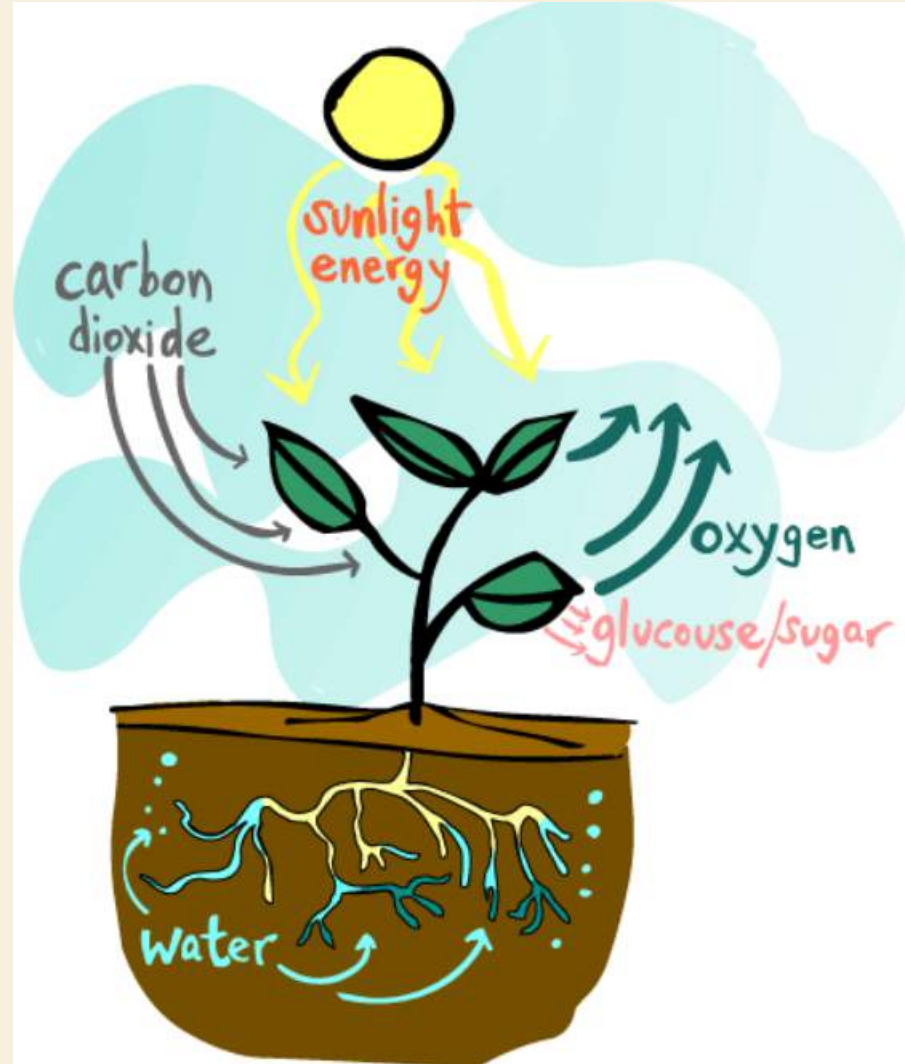
# WATER RETENTION THEORY

Sand drains the best due to its large particle size. The large particle size makes it easy for water to go through the pores within the sand.

Whereas Clay/Silt have smaller grain sizes and hence are closely packed together making it harder for the water to go through the soil.



# PHOTOSYNTHESIS



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Photosynthesis - The cycle of plants and how they make energy! The sun(light energy), water, minerals and carbon dioxide are all absorbed by the plant.

The plant then uses them to make glucose/sugar, which is the energy/food for the plant.

Oxygen is also produced by the plant in this cycle, which is then let off into the air!

Have you noticed how clean and pure the air feels when there are plants around? They are filling the air with oxygen!

# MORE GREEN SPACES = BETTER AIR QUALITY



# WE USE TOPSOIL FOR OUR CROPS

We use topsoil for our crops because it has good organic content

Good Water Retention ( It can hold water well )

Easy to aerate the soil (Loose soil/easy to move the soil)

Suitable for the 3 crops we are planning to grow (Okra / Chili / Eggplant)

