

## Adapted Plant Structures Specialized for their Environment

Xerophytes – Desert Plants ** try to reduce water loss **	Hydrophytes – Water Plants ** lots of water, need to float for maximum light **
<b>Deep roots</b> – to absorb water from deep underground <b>Rolled leaves</b> – encloses stomata to reduce transpiration <b>Leaves with spines</b> – minimize surface area <b>Reduced number of stomata</b> – reduce transpiration & also close stomata during midday (evaporation highest) <b>Thick waxy cuticle</b> – reduce evaporation from leaf <b>Succulent tissues &amp; thick cortex</b> – increased water storage Cactus	<b>Thick spongy mesophyll</b> – large air spaces to allow leaves to float <b>Large number of stomata, mostly open</b> <b>Stomata on upper surface of floating leaves, none on submerged leaves</b> <b>Thin cuticle</b> – leaves do not dry out <b>Large flat leaves for floatation</b> <b>Reduced roots</b> – water diffuses into leaves Water lily

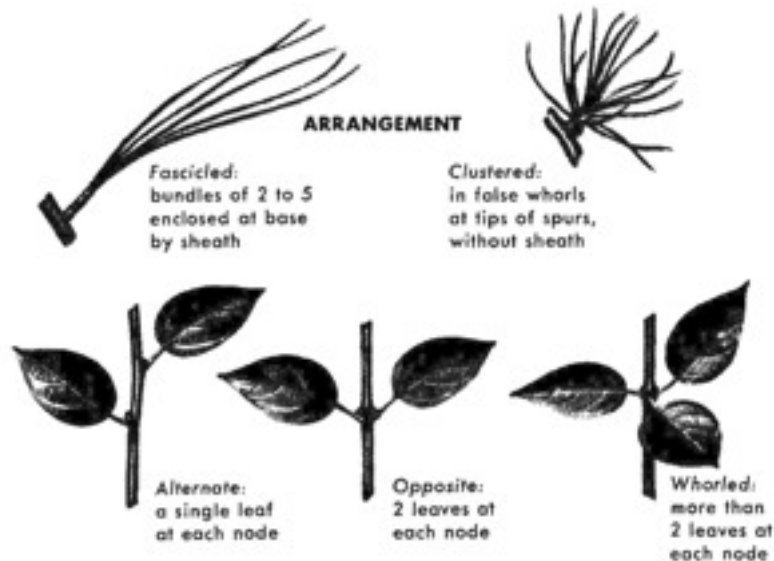
### Plant Plan : Root & Shoot (Stem & Leaves)

**Nodes:** points on the stem where leaves are attached

**Internodes:** intervals between the nodes

**Leaf axil:** angle between the leaf and stem where buds usually grow

### Leaf Arrangement on Stem



### Types of Plants

#### Woody Plants

– those that live for a number of years and survive winter

– contain tough, hard tissue commonly called wood

e.g. trees, shrubs (lilac)

– grow thicker over time; each year vascular cambium grows layers of new xylem

& phloem

cork tissue

Bark: outer part of woody stem; protective tissue consisting of phloem &

Sapwood: younger xylem, conducts water & minerals

Heartwood: older xylem that fills with resins, oils and complex compounds

**Herbaceous Plants** – stems not woody and not very supportive  
– green and usually soft  
– do not survive winter and are regrown each year  
e.g. buttercup