VIDYA BHAWAN, BALIKA VIDYAPITH

SHAKTI UTTHAN ASHRAM, LAKHISARAI - 811311

STUDY NOTES — Teacher's Name: Anjani Kaushik

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Science

CHAPTER: 8 Understanding Plants

Today's Topic: Stem

Stem:

Usually found above the ground, the stem bears branches, leaves, flowers and fruits. The main function of the stem is to carry nutrients and water to the different parts of the plant. The stem contains a series of thin tubes called **xylem** through which water and other nutrients move up by **capillary action**. **Transpiration**, or escape of water through tiny pores in leaves, also helps in the transport of water and nutrients from the roots to the top.

The stem also carries the food prepared in the leaves by photosynthesis to other parts of the plant including the roots. The stem is usually divided into nodes and internodes. The node is the part of a plant stem that holds buds from which one or more leaves, flowers or other stems emerge, often forming a slight swelling or knob. The internode is the part of a plant stem between two nodes.

The stem (or trunk) and the distribution of its branches give a plant its characteristics shape. The stem helps in holding the leaves such

that they get enough sunlight to carry out the process of photosynthesis. Certain stems that are green in colour can carry out photosynthesis themselves.

Some stems in certain plants are modified to carry out specific functions. For example, in a cactus plant, the stem is green and performs photosynthesis like a leaf. Other modified stems include tubers (potato), rhizomes (ginger) and bulbs (onion and garlic) that grow underground and store food. Stem tendrils are modified stems. They are slender, spirally coiling sensitive organs serving to attach a climbing plant to its support. The grape vine has stem tendrils.

Xylem: The thin, tube –like tissue in plants, which conducts water and dissolved nutrients upwards from the root and also helps to form the woody element in the stem.

Capillary action: The movement of a liquid through thin tubes or porous material, as a result of surface tension.

Transpiration: The release of water vapour through tiny pores in leaves.