

# Meristems Reading Comprehension

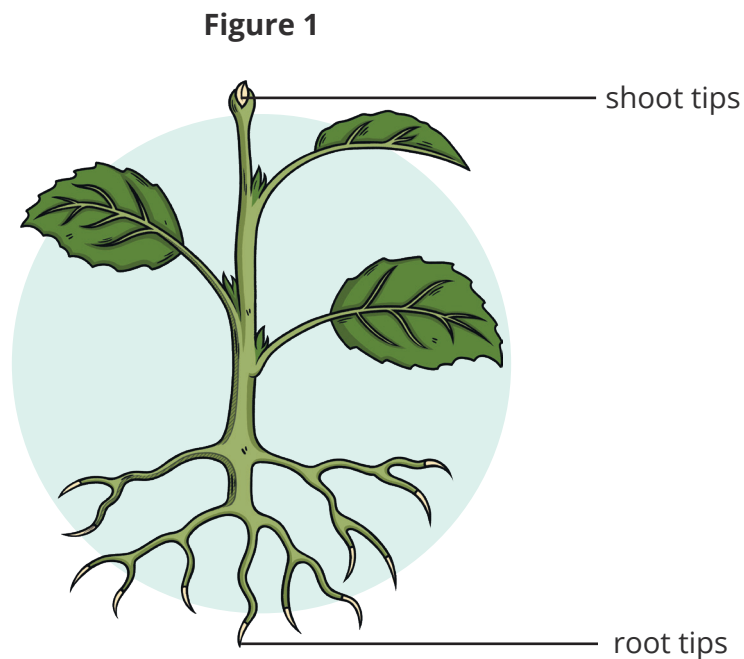
During plant growth and development, cells become specialised to carry out specific functions. This is called differentiation. Once differentiated, the cell is limited to carry out the function of its cell type.

Some examples of specialised cells in plants are:

- Phloem cells - specialised to transport dissolved sugars to parts of the plant where they are needed.
- Root hair cells - specialised for absorbing water and dissolved minerals.
- Xylem cells - specialised to transport water up the stem of a plant and into the leaves.

Unlike fully developed animals, most plants continue to grow throughout their entire life. However, most differentiated plant cells are unable to replicate themselves. Therefore, some undifferentiated cells must remain to produce new copies for growth and repair. These undifferentiated cells are called meristem cells. They can be found in meristem tissue throughout several parts of the plant.

**Figure 1** shows the location of meristem tissue in plants.



A clone of a plant can be produced by planting a cutting of the shoot tips from the plant you want to clone. The meristem cells in the cutting can produce copies of themselves and differentiate to form a new plant. The new plant will be identical to the parent plant. Rare species can be cloned using this method, preventing them from becoming extinct and ensuring continued biodiversity.

Cuttings can also be used to grow plants with desirable characteristics quickly and economically. Desirable characteristics of plants can include colourful petals, large fruit and disease or pest resistance. This could improve food security and increase crop yield.