



TISSUE

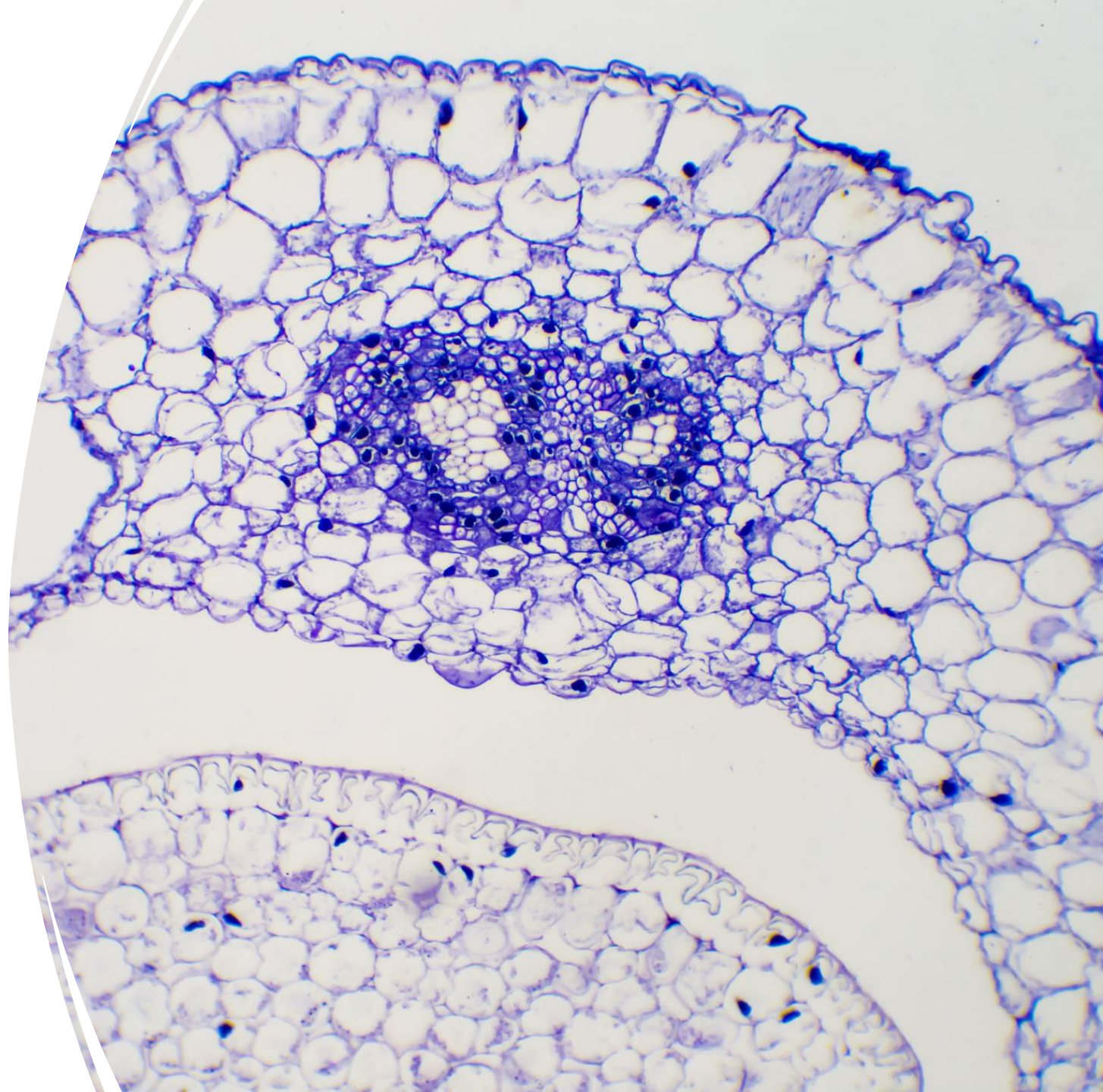
WHAT ARE TISSUES?

- A group of cells having common origin, similar structure and performing a definite function is called a tissue.
- Tissues are found in plants and animals.
- Plants and animals are made up of many different kinds of tissues.
- For example, groups of bone cells form bone tissues and muscle cells form muscle tissue.
- Different types of tissues have distinctive architecture best suited for what they do.
- We will see that plant tissues are different from animal tissues in many ways.

ANIMAL TISSUES

Human bodies, like most animal bodies, are made up of four different types of tissue:

- Epithelial tissue
- Muscle tissue
- Nervous tissue
- Connective tissue



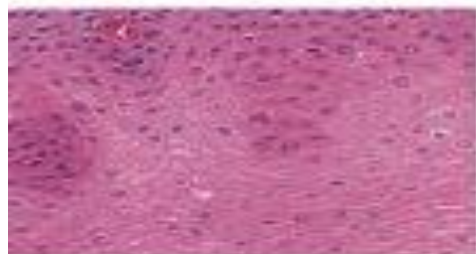


Nervous tissue

- Brain
- Spinal cord
- Nerves

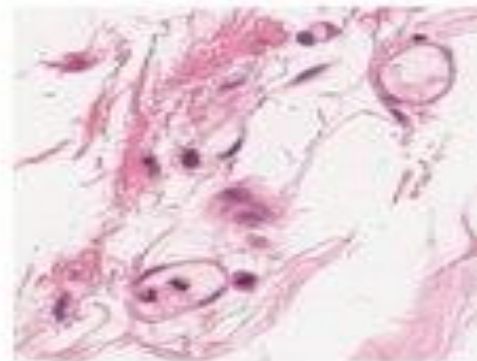
Epithelial tissue

- Lining of GI tract organs and other hollow organs
- Skin surface (epidermis)



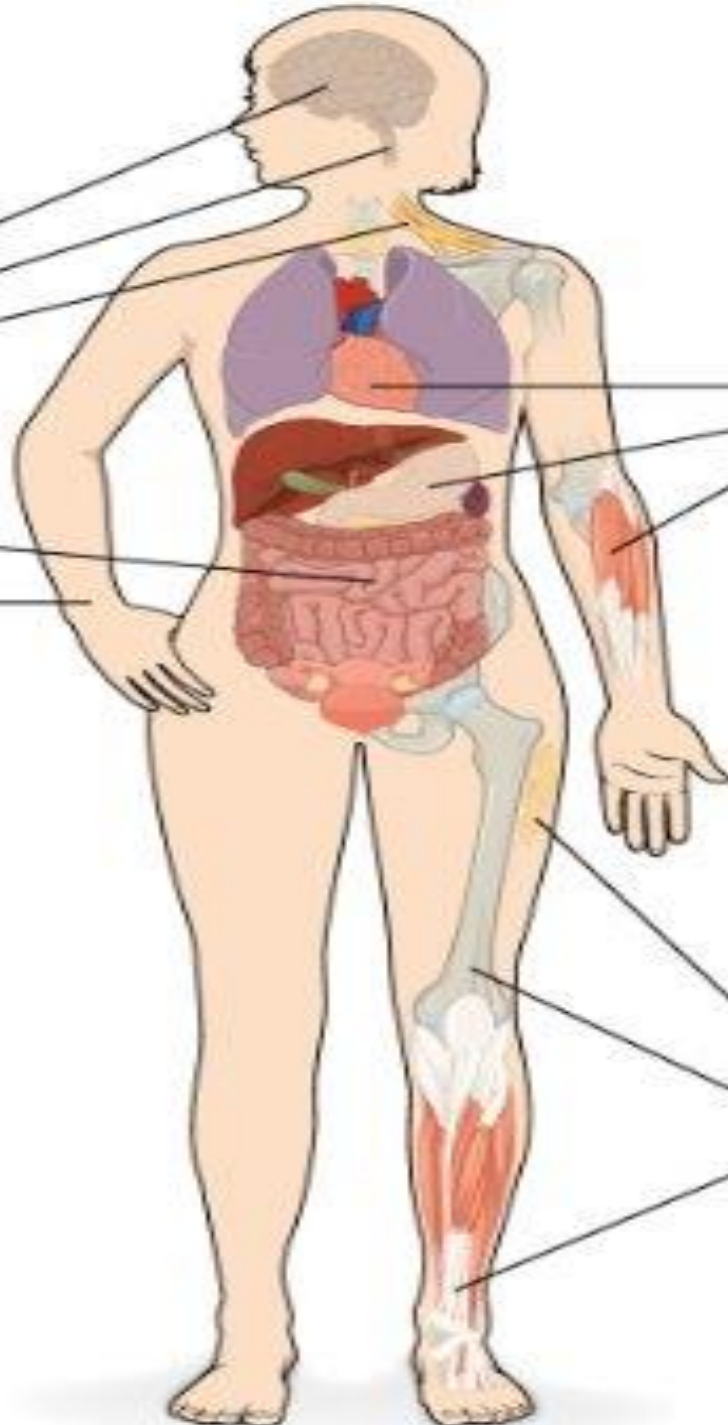
Muscle tissue

- Cardiac muscle
- Smooth muscle
- Skeletal muscle



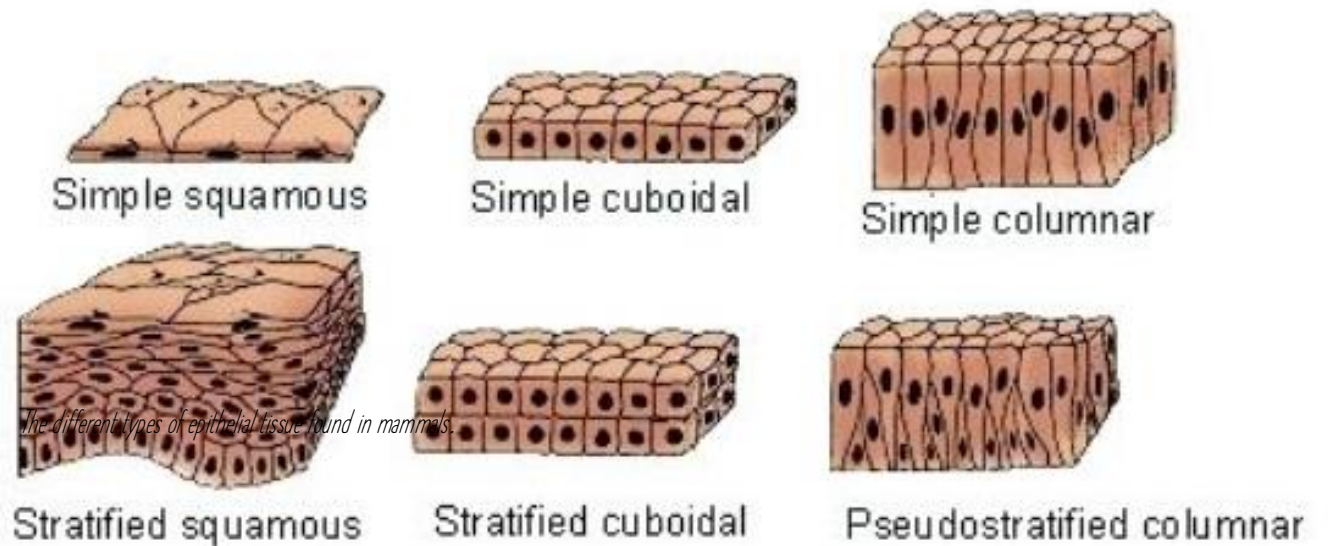
Connective tissue

- Fat and other soft padding tissue
- Bone
- Tendon



EPITHELIAL TISSUE

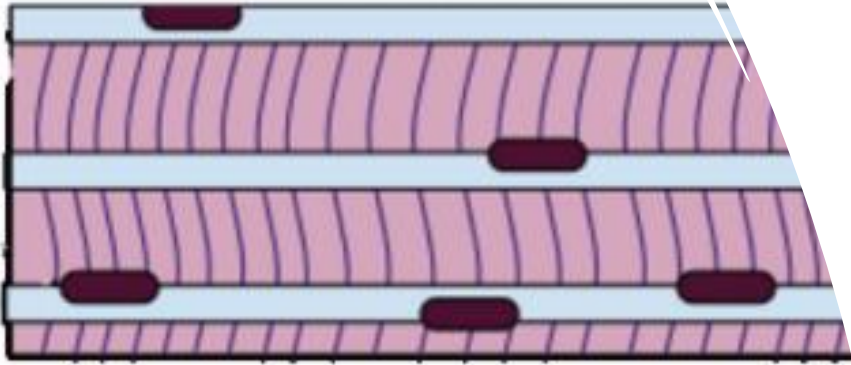
- All organs in the body are lined with a group of tissues called epithelial tissues. They cover the surface of all internal as well as external organs. There are four types of epithelial tissues: Squamous epithelium, Stratified epithelium, Cuboidal epithelium and Columnar epithelium.



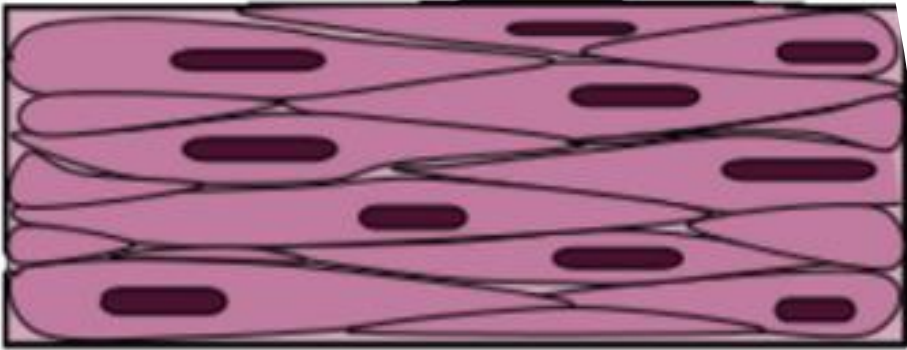
GENERAL FUNCTIONS OF EPITHELIAL TISSUE

- Provides a barrier between the external environment and the organ it covers.
- Specialised to function in secretion and absorption.
- Protects organisms from microorganisms, injury, and fluid loss.
- Excretes waste products such as sweat from the skin.

Skeletal Muscle



Smooth Muscle



Cardiac Muscle



MUSCLE TISSUE

- This type of tissue forms three types of muscles, namely skeletal (striated or voluntary) muscle, smooth (non-striated or involuntary) muscle and cardiac (heart) muscle. They help in movement by contraction and relaxation of muscles.

TYPES OF MUSCLE TISSUE

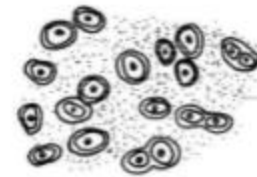
- Skeletal muscle is a voluntary muscle. It is striated in appearance. Skeletal muscle tissue has regularly arranged bundles.
- Smooth muscle is an involuntary, non-striated muscle with tapered ends. It is found within the walls of blood vessels such as arteries and veins. Smooth muscle is also found in the digestive system, urinary tract and in the trachea.
- Cardiac muscle is the major tissue making up the heart. It is an involuntary muscle that is striated in appearance

CONNECTIVE TISSUE

- As the name suggests, they connect the different tissues, organs, and parts of the body. Different types of connective tissues are Areolar tissue, Adipose tissue (fat), Blood, Lymph, Bone, and Cartilage. They connect and support organs and also transport substances between organs.



Loose connective tissue (Areolar)



Cartilage

TYPES OF CONNECTIVE TISSUE

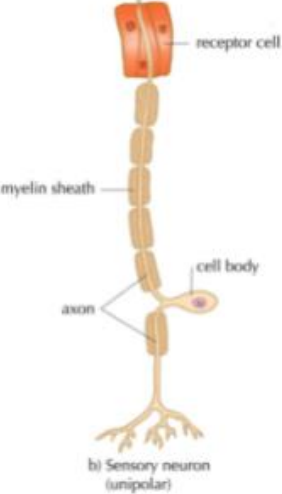
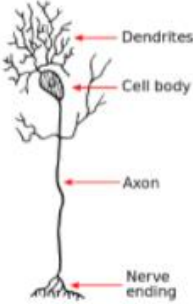
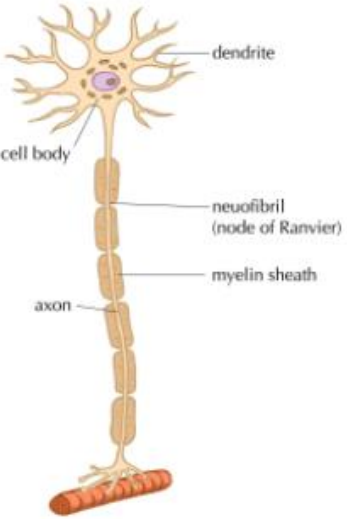
Blood: Blood is regarded as a specialised form of connective tissue because it originates in the bones and has some fibres. Blood is composed of red blood cells, white blood cells and platelets.

Platelets: Also known as thrombocytes are produced in the bone marrow and are fragments of bone marrow cells. They have no nuclei.

Plasma: Plasma is the pale-yellow component of blood that allows the rest of the components of blood to float in suspension.

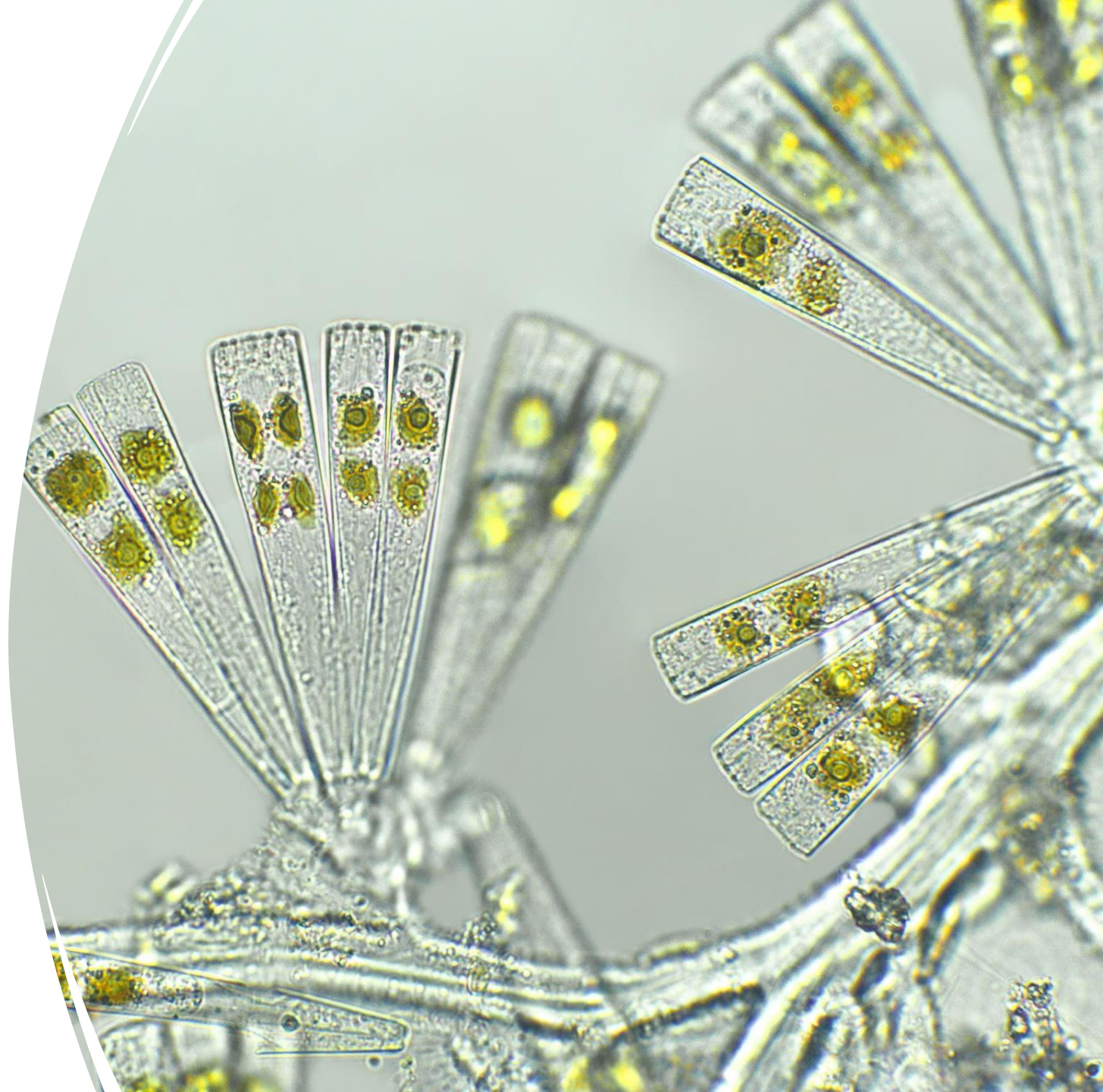
NERVOUS TISSUE

- These tissues are made up of specialized cells called nerve cells (neurons). They conduct and transmit electrochemical impulses between neurons.

Sensory neuron	Motor neuron	Interneuron
 <p data-bbox="1200 1072 1327 1110">b) Sensory neuron (unipolar)</p>	 <p data-bbox="1612 715 1803 1015">Dendrites Cell body Axon Nerve ending</p>	 <p data-bbox="2079 1110 2206 1149">a) Motor neuron (multipolar)</p>

PLANT TISSUE

- Plant structure is different from the animal skeletal structure. A plant tissue is different from those in animals. Plant tissues are basically divided into two: Meristematic tissue and Permanent tissue.



MERISTEMATIC TISSUE

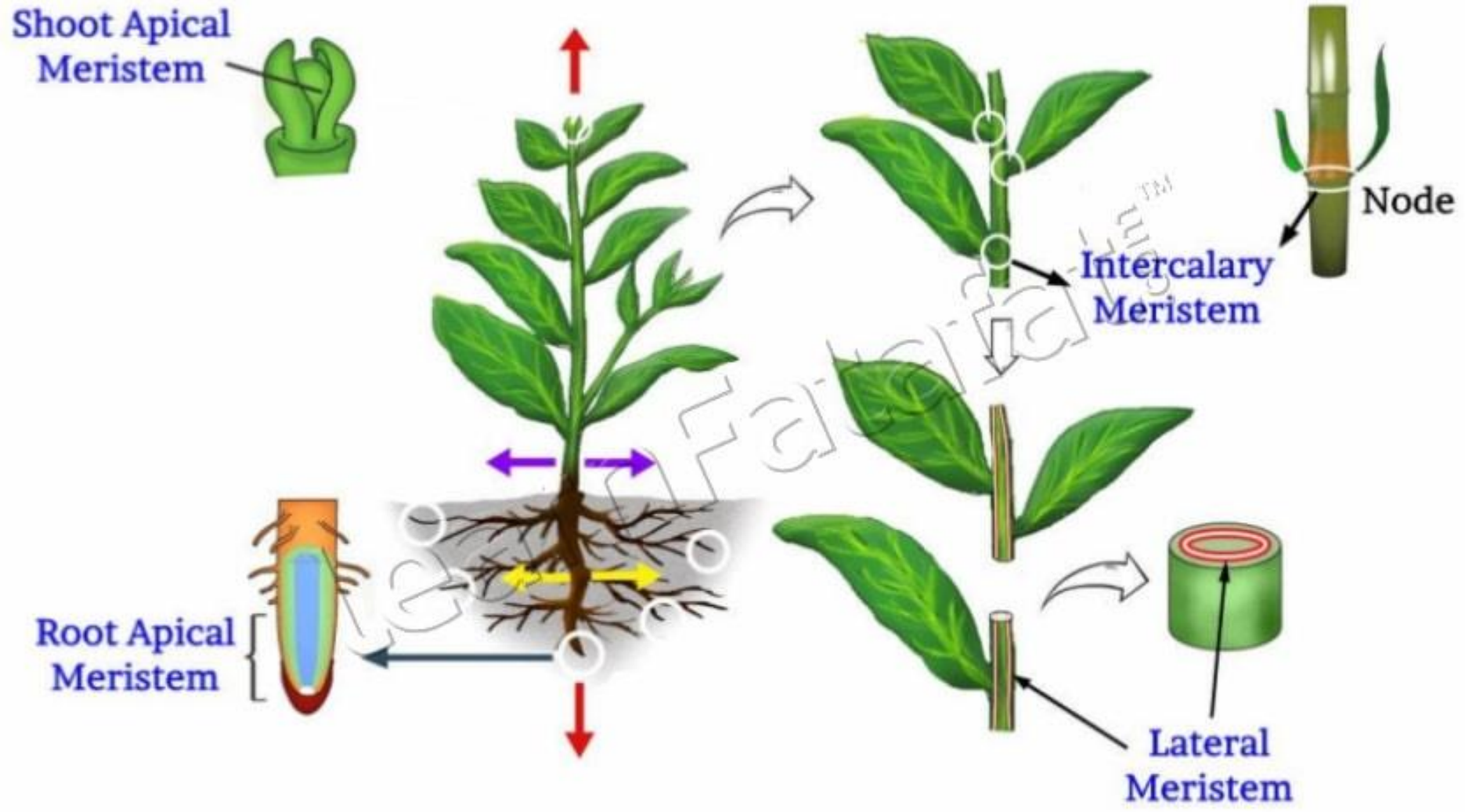
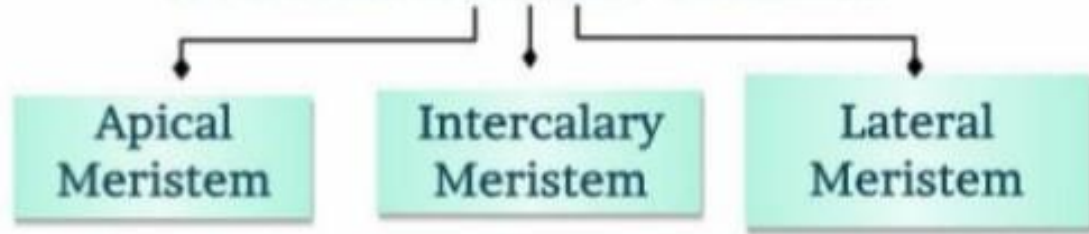
These tissues comprise of cells which have the dividing capacity.

They are immature and help plants to divide continuously throughout the life.

Depending on the site of location, it is of three types. Apical, lateral and intercalary meristems.

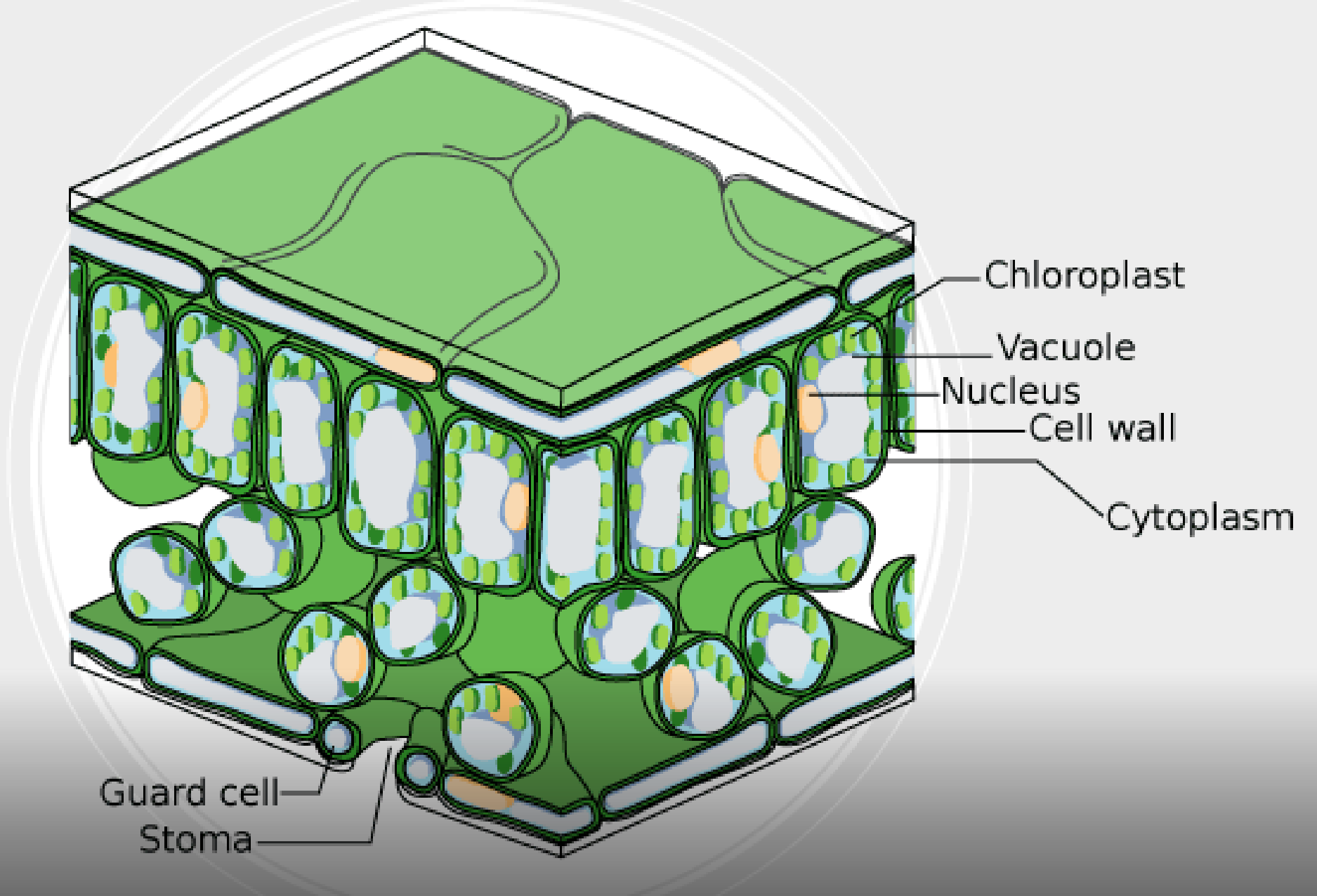
These meristems enlarge the cell and increase the length and width of the stem, roots, and leaves.

Meristematic Tissue

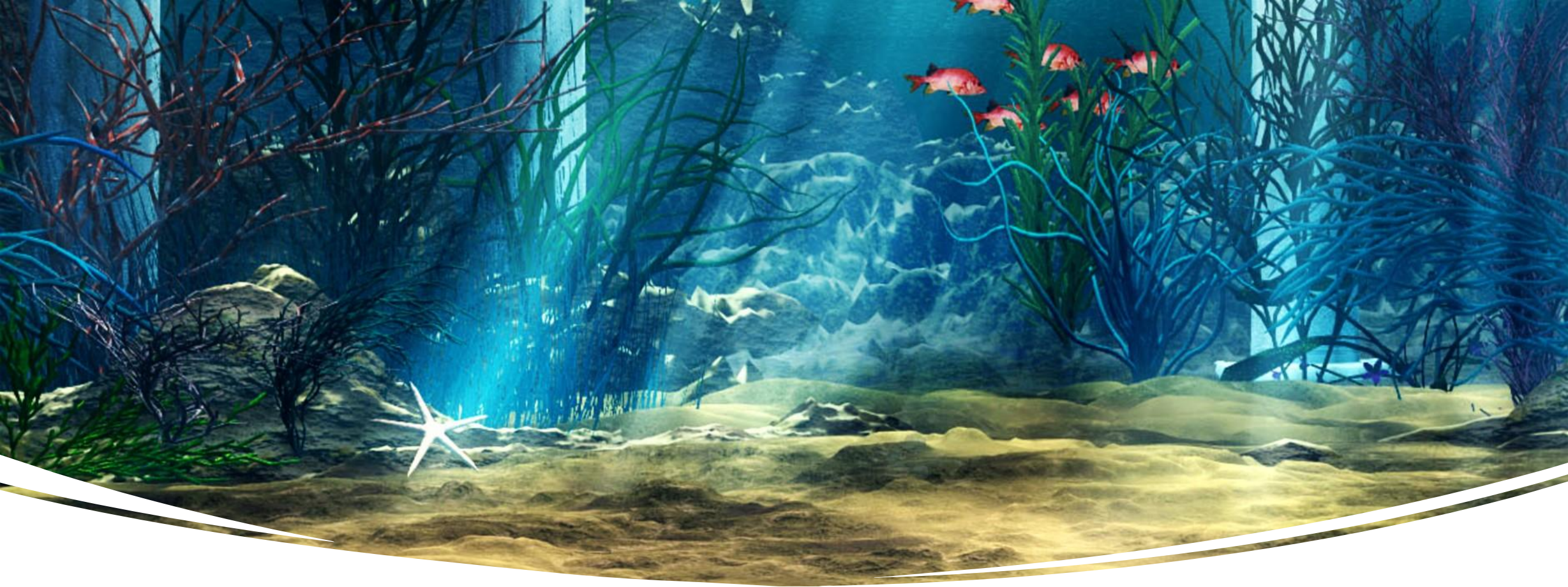


PERMANENT TISSUE

- Permanent tissues are derivative of meristematic tissue.
- They don't have the dividing capability but aid in other functions like conduction of substances, storage of food etc.
- Two types of permanent tissues are found in plants i.e. simple and complex permanent tissue.
- Simple permanent tissues include parenchyma, collenchyma, and sclerenchyma while complex tissues are xylem and phloem.



Permanent tissue



| Thank you