


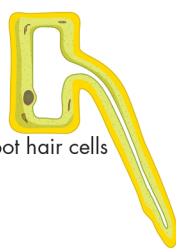
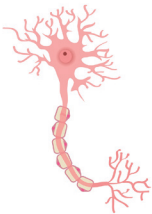


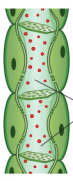
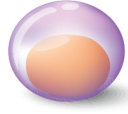
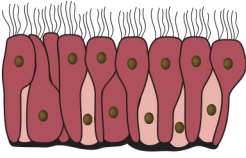
SNAP IT!

Create your own version of this table and take a photo.

Cell specialisation

Most cells are **specialised** in order to carry out a particular function. The cell's structure and composition are modified so that it can carry out a particular role.

Specialised cells

Specialised cell	Function	Specialised cell	Function
 <p>Sperm cells</p>	Swim to the ovum (egg) for fertilisation. Have a tail for swimming. Packed full of mitochondria to provide energy. Sperm head (acrosome) contains enzymes to help break into the ovum.	 <p>Root hair cells</p>	Take up water and mineral ions for the plant. Long thin hair to increase the surface area over which water can be taken up.
 <p>Nerve cells</p>	Carry nerve impulses to and from the brain. Long thin axon allows nerve impulses to travel along the cell. Has many dendrites to pass nerve impulses to nearby nerve cells.	 <p>Xylem cells</p>	Transport water from the roots to the leaves, as part of a tissue. Cells have no ends and are hollow to make a tube for water to move through. Lignin in the cell wall to waterproof the cells.
 <p>Muscle cells</p>	Contract and relax as part of a muscle tissue, for movement. Packed full of mitochondria to provide energy.	 <p>Phloem cells</p>	Transport sugars around the plant, as part of a tissue. Small holes in the end plates allow sugars to move through the cells.
 <p>Ovum (egg)</p>	The cytoplasm contains nutrients and many mitochondria to provide energy for mitosis after fertilisation. Has a special cell membrane which allows only one sperm cell to fertilise it.	 <p>Ciliated epithelial cells</p>	Found in lungs and oviducts. Has many cilia on the top surface of the cell – these help move mucus out of the lungs, or move an ovum towards the uterus.

NAIL IT!

Q3 is asking you to **explain**, so give a reason for each feature, in as much detail as you can.

CHECK IT!

- 1 What is a specialised cell?
- 2 Describe how a nerve cell is specialised for carrying nerve impulses.
- 3 Xylem is a specialised cell that transports water up the plant. Explain how the structure of the cell helps it to carry out this function.