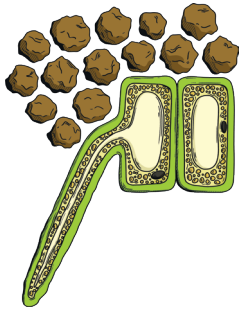
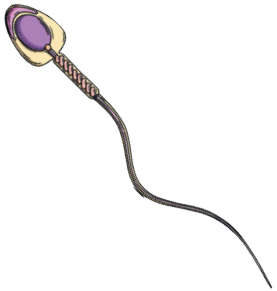
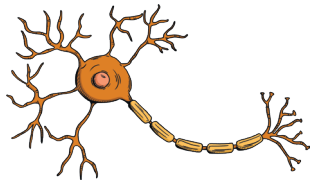
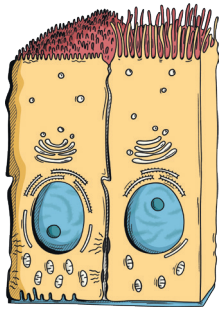
Specialised Cells

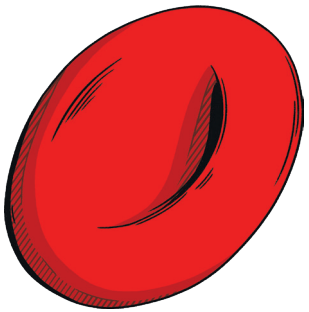
Name the specialised plant and animal cells using the words from the box below.

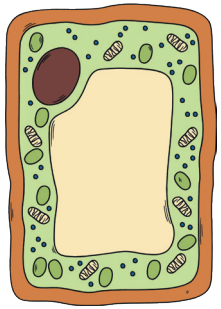


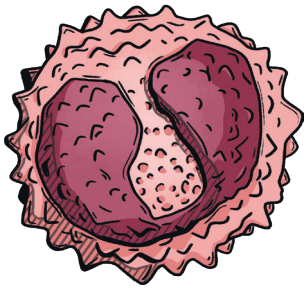


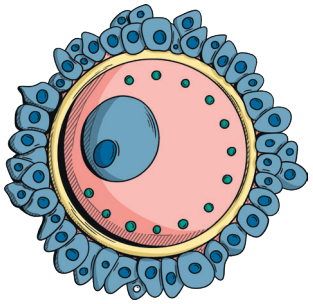


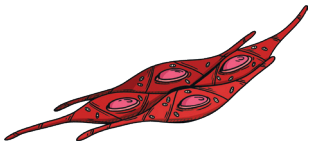












muscle cell | nerve cell | red blood cell | white blood cell | palisade cell

sperm cell | root hair cell | ciliated cell | egg cell

Specialised Cell Adaptations

Complete the table to explain how each specialised cell is adapted to its function.

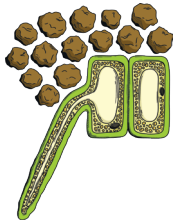
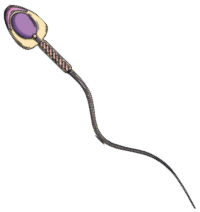
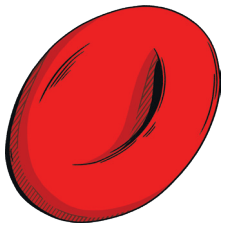
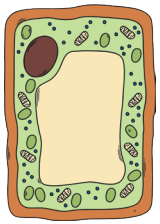
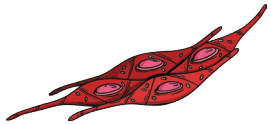
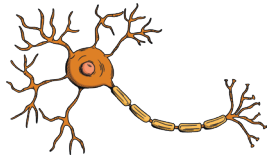
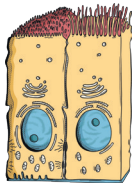
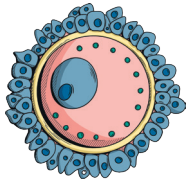
Diagram	Cell Name	Function	Adaptations
			
			
			
			

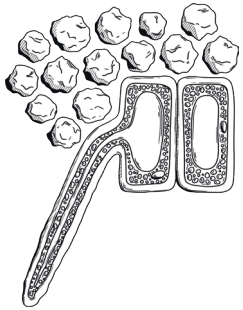
Diagram	Cell Name	Function	Adaptations
			
			
			
			
			

Specialised Cell Adaptations **Information Sheet**

Functions			**Adaptations**		
To transmit electrical impulses around the body to coordinate responses.	To move microorganisms and dust away from the lungs.	To absorb water and minerals from the soil.	• Biconcave shape to easily move through blood vessels. • Large surface area for diffusion. • No nucleus. • Contains haemoglobin.	• Lots of mitochondria to provide energy. • Store glycogen which can be broken down for use in respiration. • Can contract and relax.	• Cytoplasm contains nutrients for the developing embryo. • Membrane changes after fertilisation to stop any more sperm getting in.
To be fertilised by the sperm cell.	To carry oxygen around the body.	To contract to help parts of the body to move.	• Long tail to swim. • Lots of mitochondria to provide energy. • Chemicals in head to get into egg cell.	• Long, thin axon. • Branching dendrites at either end. • Can carry electrical impulses.	• Tiny hairs called cilia to sweep particles away. • Lots of mitochondria to provide energy.
To fight pathogens which cause disease.	To fertilise an egg cell to make a baby.	To carry out photosynthesis using energy from sunlight.	• Tall and thin. • Lots of chloroplasts for photosynthesis.	• Change shape to squeeze out of blood vessels and engulf pathogens. • Produce antibodies and antitoxins.	• Large surface area. • No chloroplasts.

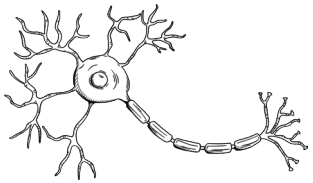
Specialised Cells **Answers**

Name the specialised plant and animal cells using the words from the box below.

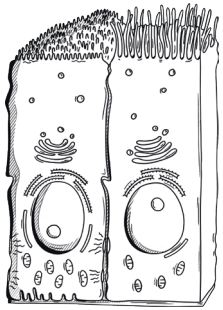


root hair cell

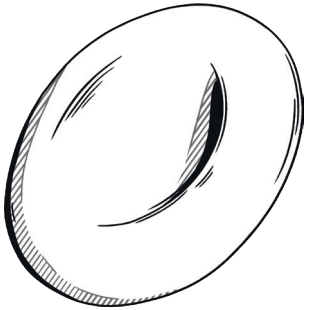
sperm cell



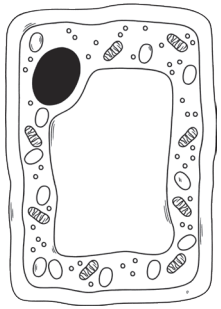
nerve cell



ciliated cell

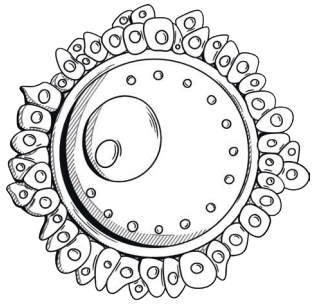


red blood cell

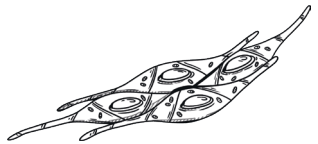


palisade cell

white blood cell



egg cell

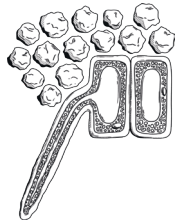
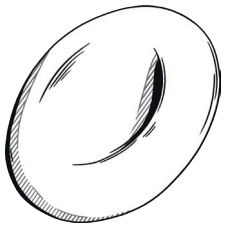
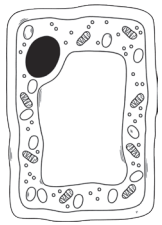


muscle cell

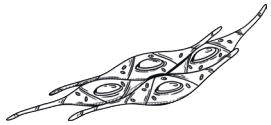
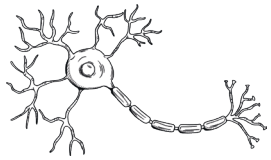
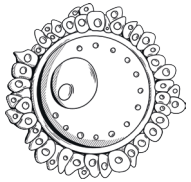
muscle cell		nerve cell		red blood cell		white blood cell		palisade cell	
	sperm cell		root hair cell		ciliated cell		egg cell		

Specialised Cell Adaptations **Answers**

Complete the table to explain how each specialised cell is adapted to its function.

Diagram	Cell Name	Function	Adaptations
	**Root hair cell**	**To absorb water and minerals from the soil.**	• **Large surface area.** • **No chloroplasts.**
	**Sperm cell**	**To fertilise an egg cell to make a baby.**	• **Long tail to swim.** • **Lots of mitochondria to provide energy.** • **Chemicals in head to get into egg cell.**
	**Red blood cell**	**To carry oxygen around the body.**	• **Biconcave shape to easily move through blood vessels.** • **Large surface area for diffusion.** • **No nucleus.** • **Contains haemoglobin.**
	**Palisade cell**	**To carry out photosynthesis using energy from sunlight.**	• **Tall and thin.** • **Lots of chloroplasts for photosynthesis.**

Specialised Cell Adaptations **Answers**

Diagram	Cell Name	Function	Adaptations
	**Muscle cell**	**To contract to help parts of the body to move.**	• **Lots of mitochondria to provide energy.** • **Store glycogen which can be broken down for use in respiration.** • **Can contract and relax.**
	**Nerve cell**	**To transmit electrical impulses around the body to coordinate responses.**	• **Long, thin axon.** • **Branching dendrites at either end.** • **Can carry electrical impulses.**
	**Ciliated epithelial cell**	**To move microorganisms and dust away from the lungs.**	• **Tiny hairs called cilia to sweep particles away.** • **Lots of mitochondria to provide energy.**
	**Egg cell**	**To be fertilised by the sperm cell.**	• **Cytoplasm contains nutrients for the developing embryo.** • **Membrane changes after fertilisation to stop any more sperm getting in.**
	**White blood cell**	**To fight pathogens which cause disease.**	• **Change shape to squeeze out of blood vessels and engulf pathogens.** • **Produce antibodies and antitoxins**