



Specialised Cells

Complete the table to compare the different types of specialised cells. Use the information from the posters around the classroom.

| Name of Cell | Plant or Animal? | Function | Adaptive Structures |
|---------------|------------------|--|---|
| sperm | | The sperm cell carries _____ to fertilise an _____ cell. | <p>The _____ allows the sperm cell to move.</p> <p>There are lots of _____ to release energy to fuel the sperm cell.</p> <p>The _____ contains the genetic information.</p> |
| nerve | | The nerve cell carries _____ throughout the body or the brain. | <p>The _____ insulates the axon so the impulse can be carried further.</p> <p>The _____ connect the nerve cells to each other and to muscles or sensory cells.</p> |
| smooth muscle | | The muscle cells allow _____ | <p>The muscle cells are connected to the _____.</p> <p>They contain _____ which make the cell contract or relax.</p> |



Specialised Cells

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|----------------|--|---|--|
| red blood cell | | The red blood cell transports _____. | It has a _____ shape to increase the _____ available for diffusion of gases. The cell contains _____ which binds to _____. |
| ciliated cell | | A ciliated cell is important for _____. | The hair-like _____ line increase the surface area for mucus secretions and can _____. The cell is _____ so many cells together form a lining. |
| root hair cell | | The root hair cell _____ from the ground through the roots. | The extended cell membrane creates a _____ for absorbing more water. The cell does not contain any _____ as there is no light underground to _____. |



Specialised Cells

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|--------|--|---|---|
| xylem | | The xylem transports _____ in the plant. | <p>The xylem is not _____.</p> <p>The xylem are strengthened with _____ to help support the plant.</p> <p>The xylem forms a hollow tube because there are no _____ or _____ at the ends of the cells.</p> |
| phloem | | The phloem transports _____ in the plant. | <p>Phloem cells form _____ which are joined at _____. They allow the fast transport of sugars.</p> <p>The _____ contain many mitochondria to release _____ for active transport.</p> |

Specialised Cells Answers

Complete the table to compare the different types of specialised cells. Use the information from the posters around the classroom.

| Name of Cell | Plant or Animal? | Function | Adaptive Structures |
|----------------|------------------|--|---|
| sperm | animal | The sperm cell carries genetic information/DNA/chromosomes to fertilise an egg cell. | The flagella/tail allows the sperm cell to move. There are lots of mitochondria to release energy to fuel the sperm cell. The nucleus contains the genetic information. |
| nerve | animal | The nerve cell carries electrical impulses throughout the body or the brain. | The myelin sheath insulates the axon so the impulse can be carried further. The dendrites connect the nerve cells to each other and to muscles or sensory cells. |
| smooth muscle | animal | The muscle cells allow movement of the body . | The muscle cells are connected to the skeleton . They contain filament bundles which make the cell contract or relax. |
| red blood cell | animal | The red blood cell transports oxygen and carbon dioxide . | It has a biconcave shape to increase the surface area available for diffusion of gases. The cell contains haemoglobin which binds to oxygen . |
| ciliated cell | animal | A ciliated cell is important for protecting the body from disease . | The hair-like cilia increase the surface area for mucus secretions and can waft dirt through the airway . The cell is tall and narrow so many cells together form a lining. |



| | | | |
|----------------|--------------|--|---|
| root hair cell | plant | The root hair cell absorbs water from the ground through the roots. | The extended cell membrane creates a large surface area for absorbing more water. The cell does not contain any chloroplasts as there is no light underground to photosynthesise . |
| xylem | plant | The xylem transports water in the plant. | The xylem is not living . The xylem are strengthened with lignin to help support the plant. The xylem forms a hollow tube because there are no cell walls or cell membranes at the ends of the cells. |
| phloem | plant | The phloem transports dissolved sugars in the plant. | Phloem cells form sieve tubes which are joined at sieve tube plates . They allow the fast transport of sugars. The companion cells contain many mitochondria to release energy for active transport. |