



# PiXL Science

## KS3 Application Cells

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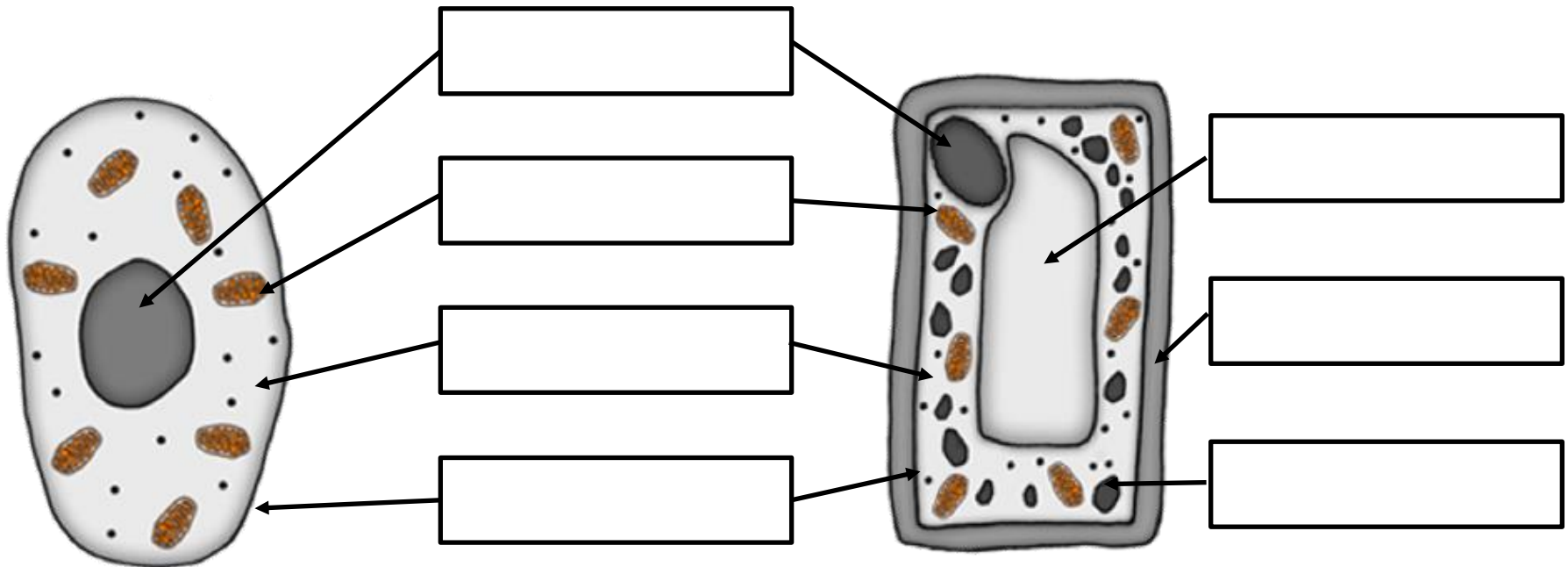
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# Cells.

You need to know the **similarities and differences** between plant and animal cells and be able to apply your knowledge to unusual examples.

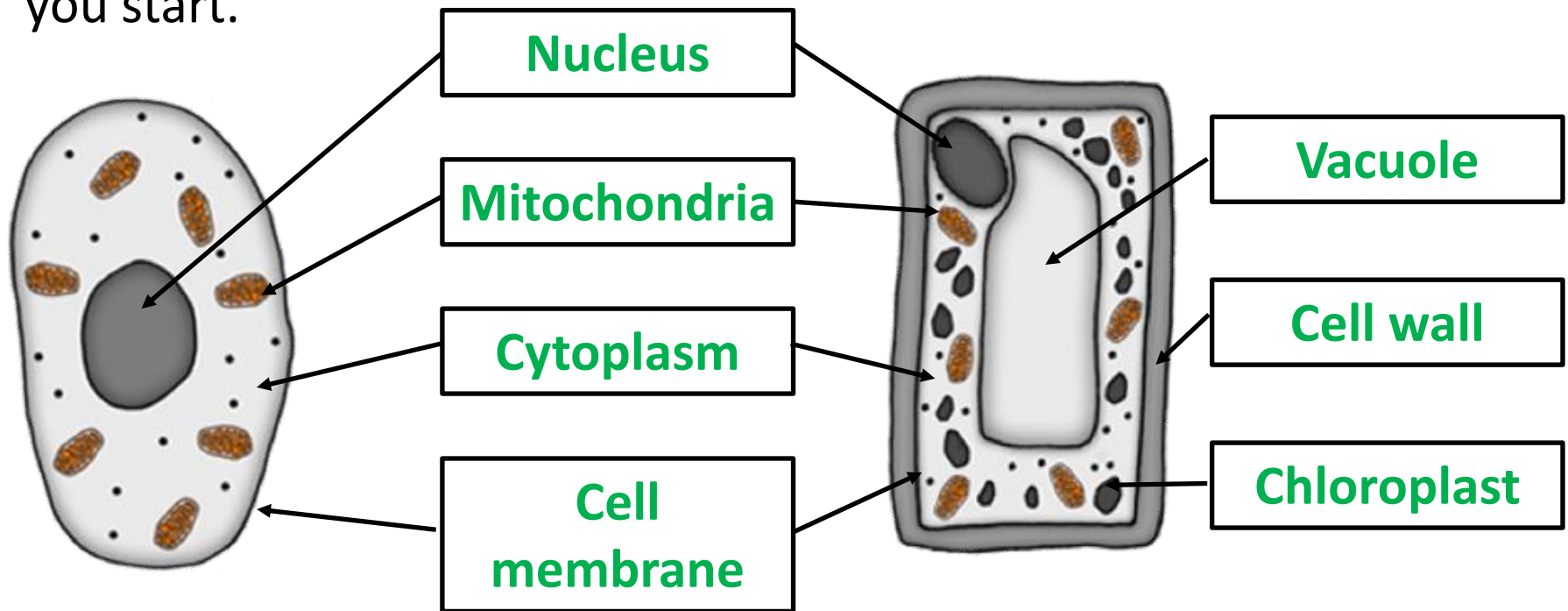
Make sure you know how to label a plant and animal cell before you start.



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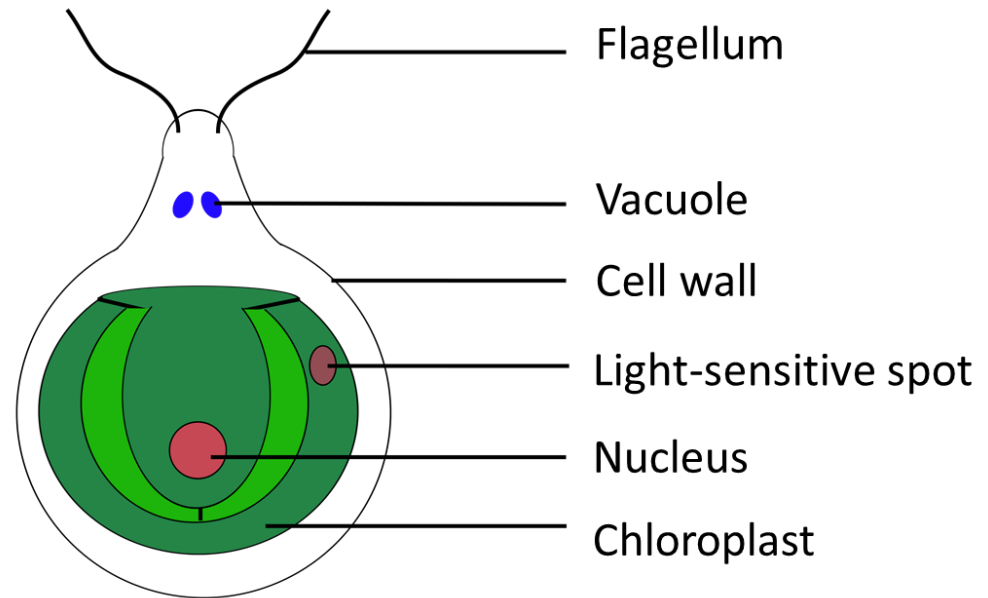


# Chamydomonas.

Chamydomonas is a single-celled algae which lives in fresh water.

**Which part of the cell traps light for photosynthesis?**

**Which parts of the cell help it to move towards light?**



**Do you think this is a plant or animal cell?**

**Use evidence from the diagram to justify your answer.**

## **Chamydomonas - answers.**

**Which part of the cell traps light for photosynthesis?**

**Chloroplast.**

**Which parts of the cell help it to move towards light?**

**Light sensitive spot detects the light; flagellum moves the cell.**

**Do you think this is a plant or animal cell?**

**Use evidence from the diagram to justify your answer.**

**Similar to a plant as it has a cell wall, vacuole and chloroplast.**

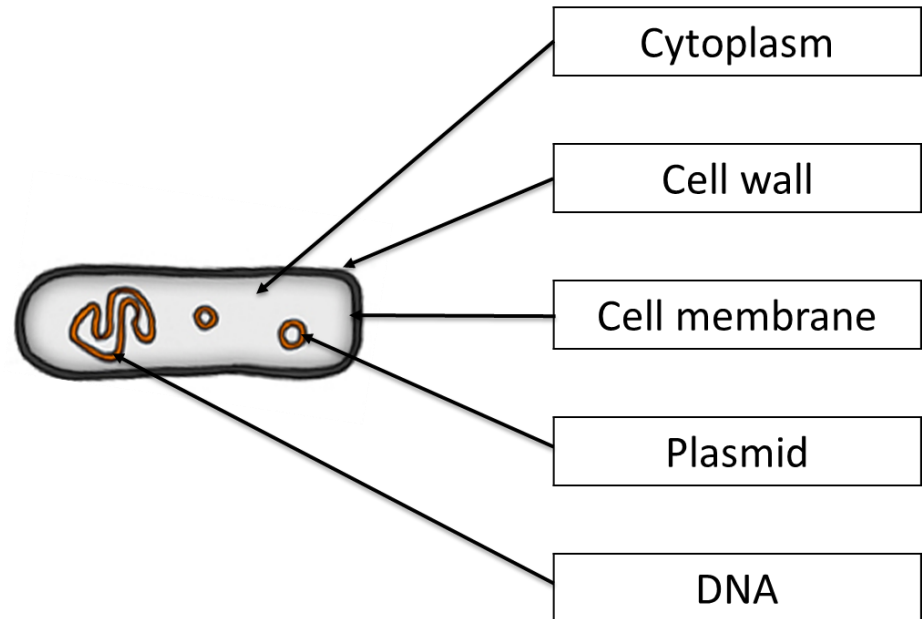
**Similar to animal as it can detect light and move.**

# Bacteria.

Bacterial cells are different to plant and animal cells.

**How are bacterial cells similar to animal cells?**

**How are bacterial cells different to animal cells?**



**Compare and contrast bacterial cells with a plant cells.  
Use evidence from the diagram in your answer.**

## **Bacteria - answers.**

**How are bacterial cells similar to animal cells?**

**Cytoplasm, cell membrane, DNA.**

**How are bacterial cells different to animal cells?**

**Cell wall, plasmid, no nucleus, no mitochondria.**

**Compare and contrast this bacterial cell with a plant cell.**

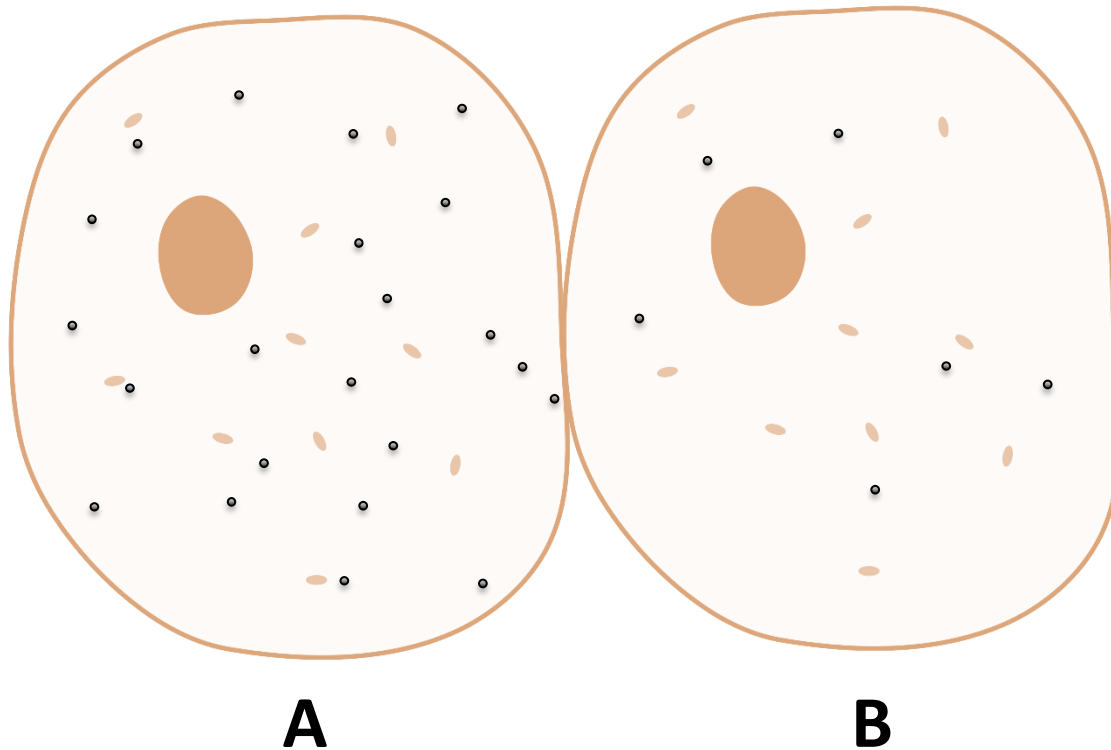
**Use evidence from the diagram in your answer.**

**Similarities: cytoplasm, cell wall, cell membrane, DNA.**

**Differences: Plasmid, loose DNA, no nucleus, no mitochondria, no chloroplasts.**

# Diffusion.

The black dots in the cells below represent oxygen.  
Look careful at the diagram.



Oxygen will **diffuse**  
from one cell to the  
other.

**Which direction will  
the oxygen move?**

**Explain why.**



## **Diffusion - answers.**

**Which direction will the oxygen move?**

**From A to B.**

**Explain why.**

**More molecules of oxygen in A than B or higher concentration of oxygen in A than B.**

**Oxygen will move from a higher to a lower concentration.**