



Organisms

Cells: Learning pathway

Activate

Acquire

Apply

Assess

Analyse



Cell structure

- | | | | | |
|---|---|--|--|---|
| <ul style="list-style-type: none"> <input type="checkbox"/> Life processes | <ul style="list-style-type: none"> <input type="checkbox"/> Use microscope observations to construct an idea about what living things are made up of <input type="checkbox"/> Use the idea of life processes to explain how cell parts work together to keep the cell alive | <ul style="list-style-type: none"> <input type="checkbox"/> Provide evidence for why an image is a plant, animal cell or neither <input type="checkbox"/> Suggest an explanation for how a change in a cell will affect the organism | <ul style="list-style-type: none"> <input type="checkbox"/> Acquire <input type="checkbox"/> Apply | <ul style="list-style-type: none"> <input type="checkbox"/> Diagnose the flaws in an idea about how organisms carry out life functions using experimental data |
|---|---|--|--|---|

Specialised cells

- | | | | | |
|---|---|---|--|--|
| <ul style="list-style-type: none"> <input type="checkbox"/> Body parts | <ul style="list-style-type: none"> <input type="checkbox"/> Use cell adaptations to construct an idea about why cells look different | <ul style="list-style-type: none"> <input type="checkbox"/> Explain the functions of the adaptations of a specialised cell <input type="checkbox"/> Suggest the function of specialised cells from observations | <ul style="list-style-type: none"> <input type="checkbox"/> Acquire <input type="checkbox"/> Apply | <ul style="list-style-type: none"> <input type="checkbox"/> Draw conclusions based on evidence about how specialised cells can be used in a medical treatment |
|---|---|---|--|--|



Cell biologist

Act

Consider evidence to critique the claim that life exists elsewhere in the Universe



Cells: Big ideas

Organisms

What expert understanding do we want after 5 years?

Cells are alive

Big idea

Organisms are made of cells, which themselves have parts that carry out different functions. Organisms exist as single cells (unicellular) or many cells (multicellular). In multicellular organisms, cell division is essential for growth, development, and repair. Cells differentiate to form specialised cells that perform diverse functions.

How does the unit develop this?

Cell structure

Key Concept

Cells are the smallest elements of life that are alive. They have parts that play different roles in life functions

Sub-concepts

Animal cell, plant cell, unicellular and multicellular

Facts

- Functions of: nucleus, cell membrane, cytoplasm, mitochondria, ribosomes, cell wall, vacuole, chloroplasts
- Bacterial cell parts
- How to use a light microscope

Specialised cells

Key Concept

Multicellular organisms have specialised cells with adaptations to allow them to carry out specific functions

Sub-concepts

Sperm cell, nerve cell, muscle cell, root hair cell, palisade cell



Organisms

Cells: Scientific thinking, maths & literacy

How are practical skills integrated with the concepts?

Cell structure

Apparatus and techniques	AT.7.B
---------------------------------	--------

Required practical activity 1: Using a light microscope



Cells: Curriculum links

Organisms

Which parts of KS3 are covered?

AQA KS3 syllabus: 3.8.2 Cells

Which parts of GCSE are covered?

(AQA Trilogy combined science)

Cell structure	✓ 4.1.1.2 Animal and plant cells	
Specialised cells	✓ 4.1.1.3 Cell specialisation	

What resources are there to teach this unit?

Visit shop.masteryscience.com



[CPD](#)



[Teaching](#)



[Assessment](#)



Cell biologist

Act Show the students an image of a meteorite that contains a mysterious cell-like structure. Ask them if they think this is good evidence that life exists elsewhere in the Universe and why. They should apply what they have learnt about cell structure to decide how likely it is that the structure is a cell