

Build me a cell! – Teacher instructions

Aim:	Pupils to build a cell using sweets.
Time:	30 min.
Ability:	All.
Key stage:	4 and 5.
Syllabus:	AQA 4411 Unit Biology 2, 12.1 What are animals and plants built from? OCR B B3 Living and growing, B3a Molecules of Life. OCR AS F211: Cells, exchange and transport, 1.1.1 Cell structure AQA B 10.2 Cells, Cell structure
Groupings:	Pairs

Introduction

To provide a fun kinaesthetic opportunity to familiarise pupils with the structure of animal and plant cells. It is good way to highlight the 3-D reality of cells and emphasise the interactivity of cell organelles.

Web resource: www.cellsalive.com – useful animations that could be displayed on board and interactive opportunities as a plenary or starter more suited for Y12 as more detail present than necessary and may add confusion for lower school pupils.

Instruction for activity leader

The cell cytoplasm is gelatinous mixture; viscous and translucent and would need to be built up in layers. Wall paper paste is suggested to be used and would act as a disincentive for the pupils to eat the cell components. It is suggested that to form a mould that ice cream tubs are used and a clear food bag be used to line and to function as the cell membrane. The bag can be sealed once finished and the cells can be displayed around the room for the duration of the module/ topic. You will need to be cautious as wall paper paste will act as a growth medium for pathogens and the cells if kept will need to be monitored for colour changes.

You can chose to split pupils into pairs with half making plant cells and half animal cells or just to focus on one cell type.

Animal cell

Cell component	No per cell	Key Stage	Suggested Sweet
Endoplasmic reticulum (smooth + rough with smarties)	1	4	Fizzy liquorice (flat)
Mitochondrion	6	4	Jelly babies
Ribosome	12	4	Smarties
Chromatin (DNA + histones)	1	4	Red laces
Nuclear membrane	1	4	Cling film
Nucleolous	1	5	Pontefract
Lysosome	6	5	Aniseed ball
Centriole	2	5	Liquorice all sort
Golgi apparatus/ body	1	5	Knotted green laces
Vesicle	4	5	Skittles
Cytoskeleton	8	5	Liquorice laces

Plant cell

Cell component	No per cell	Key Stage	Suggested Sweet
Endoplasmic reticulum (smooth + rough with smarties)	1	4	Fizzy liquorice (flat)
Mitochondrion	6	4	Jelly babies
Ribosome	12	4	Smarties
Chromatin (DNA + histones)	1	4	Red laces
Nuclear membrane	1	4	Cling film
Vacuole	1	5	Freezer bag filled with wall paper paste
Nucleolous	1	5	Pontefract
Lysosome	6	5	Aniseed ball
Centrosome	2	5	Liquorice all sort
Golgi apparatus/ body	1	5	Knotted green laces
Vesicle	4	5	Skittles
Chloroplast	6	4	Green boiled sweet
Cytoskeleton	8	5	Liquorice laces



Of course other options are available for the different organelles and you will use these how you find most appropriate.

Follow-up/ homework suggestion

Pupils could be asked to investigate a specialised cell to find out about other organelles that exist to support specific function of different cells.

Technicians brief

Number of items per cell has been suggested. Cheaper versions of sweets are available from most markets. It may be an idea to buy in bulk and keep excess for subsequent classes and years and this could be told to pupils as a disincentive to consume.