THE STRIVING

MUSLIM ACADEMY

Islamic and Academic Education

YEARS 7 TO 9 · SCIENCE

Cells and organisation

Cell theory and its three claims, prokaryotic against eukaryotic, and the levels from cell to organism.

WHAT IS INSIDE

- Cell theory, and what it claims
- Two broad kinds of cell
- From cells to an organism
- Cells, and what the theory claims
- How each one is answered

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1 sets · a hint on every question

Written for a parent teaching at home. No training assumed, and nothing else to buy.

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Two broad kinds of cell

Read this, then answer the questions on it.



TWO BROAD KINDS OF CELL

Scientists group cells into two broad categories: prokaryotic and eukaryotic.

Animal and plant cells are classified as eukaryotic. Bacterial cells are classified as prokaryotic.

A prokaryote is a simple, mostly single-celled organism that lacks a nucleus. Its DNA sits in the cell's central part, called the nucleoid. A eukaryotic cell, unlike a prokaryotic one, has a membrane-bound nucleus, and the nucleus houses the cell's DNA.

Eukaryotic cells also have organelles, and organelles allow different functions to be compartmentalised in different areas of the cell.

Size is governed by something simpler, and it is worth knowing: as a cell increases in size, its surface area to volume ratio decreases. A cell has to take everything in across its surface and supply everything inside its volume, so growing makes that harder, not easier.

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From cells to an organism

Read this, then answer the questions on it.



FROM CELLS TO AN ORGANISM

Multicellular life is organised in levels, each built from the one below: cells, then tissues, then organs, then organ systems, then the organism.

A tissue is cells of similar kind doing one job together. An organ is tissues of different kinds arranged to do a larger job. An organ system is organs working as one.

Each level is built from the one below, so the whole ladder rests on the cell: several cells of one kind that interconnect with each other and perform a shared function form a tissue, and several systems functioning together form an organism.

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SAMPLE PAGES

You have read a few pages. The pack is longer.

What you are holding is a short sample, taken from different parts of the pack so that you can see how a week is planned and what a child is actually asked to do, before you decide.

The complete pack, and the rest of the academic materials, are on our website: schemes of work for a parent teaching at home, and practice packs for the skills children get stuck on.

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Members of the homeschool community do not buy these. If you have joined the community, the pack for the term you are working on is given to you at no cost.

Our Islamic Education classes are free. These packs are part of what pays the teachers who teach them.