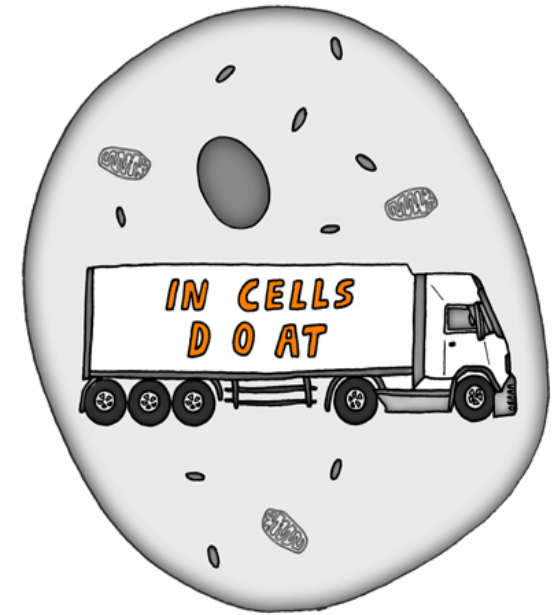
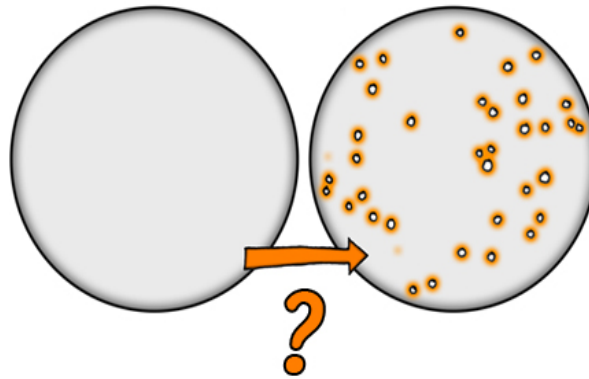
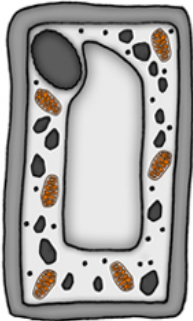


CELLS

name, function, structure

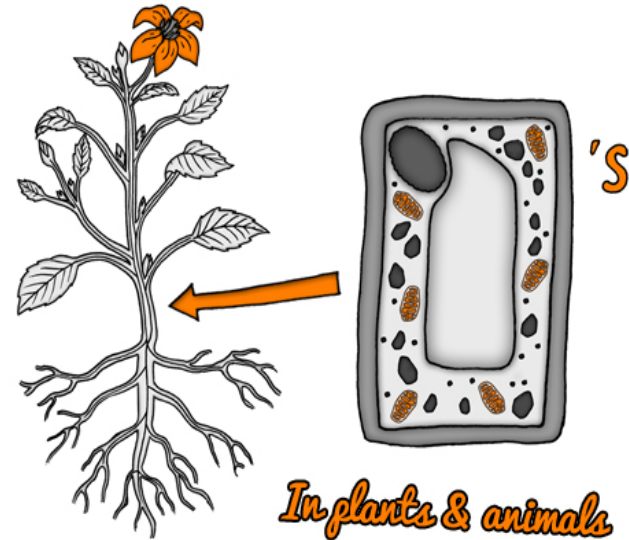
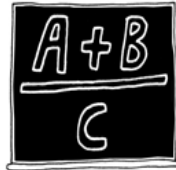
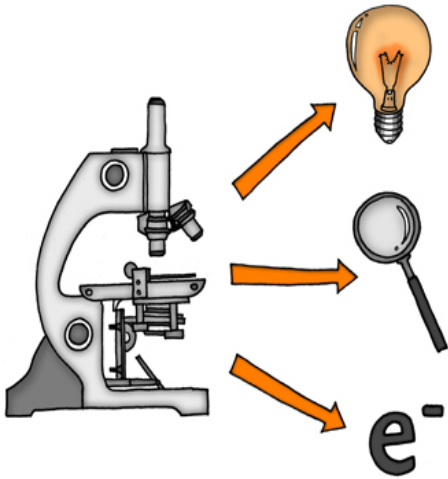


SPECIALISE



AQA CELL BIOLOGY THINKIT!

Tell me more! And what?



Cell Structure:

- Compare the sub-cellular structures of eukaryotic and prokaryotic cells.
- Explain how the main subcellular structures are related to their function.
- Compare the size of eukaryotic and prokaryotic cells and discuss relative size of the sub-cellular structures.
- Find typical sizes for several structures within cells and quote the sizes using standard form.

Cell specialisation:

- Scientists can grow new skin cells for burns victims, however it is not possible to grow replacement tissues or organs. Suggest why this is too complex.
- If sperm were the size of salmon, they would travel at approximately 500mph. Explain how they can achieve this.
- Transpiration and translocation are two processes in plants. Explain how root hair, xylem and phloem cells are adapted to aid these processes.

Cell differentiation:

Compare and contrast cell differentiation and growth in plant and animal cells in terms of:

- Pattern of growth over the organism's lifetime and how the growth happens.
- The types of cells that can differentiate.
- The names of the undifferentiated cells.
- Where in the organism this growth and differentiation occurs.

Cell division:

- Suggest how the amount of DNA in a cell can be used to identify the type of cell division taking place.
- Cancer is often caused by an error in the cell cycle. Use your knowledge of the cell cycle to suggest what causes tumours.
- Explain the ratio between the different phases of the cell cycle.
- Cells with too short a cell cycle can cause cancers. Find out why the cancer treatment chemotherapy causes hair to fall out.

Transport in cells:

- Suggest how the human respiratory system is adapted to increase the rate of oxygen transport.
- An amoeba is a single celled organism. Explain why it is easier for an amoeba to gain its oxygen and glucose for respiration, than it is for the cells of a human.
- When a patient is dehydrated they are put on a saline drip containing ions and water. Suggest why they are given this rather than pure water.

Stem cells:

- Explain what stem cells and meristems are.
- Distinguish between embryonic and adult stem cells in humans.
- Stem cells have been used to produce meat products for food. Suggest how this could impact on global warming.
- Discuss why some people may have ethical objections to the use of stem cells.
- Explain how stem cells from plant meristems can be used.

AQA GCSE Cell Biology

ThinkIT!

© Copyright The PiXL Club Ltd, 2017

Microscopy:

- Discuss the structure and function of the light and electron microscope.
- Compare the cell structures that can be seen by the light and electron microscope and discuss the resolution of each instrument.
- Explain why the development of the electron microscope was important.
- Explain how you would use a light microscope to observe cheek cells.

Culturing microorganisms (bio only):

- Explain the stages in preparing bacterial cultures including using aseptic technique.
- Describe and explain what binary fission is and relate this to the growth of bacteria.
- Explain why you would not incubate cultures at 37°C.
- Explain what the zone of exclusion on a bacterial colony is and what we can learn from this.