

What is understood by the term “cell theory”?

Explain why striated muscle, giant algae, fungal hyphae don't quite fit.

Is this enough evidence to falsify cell theory?

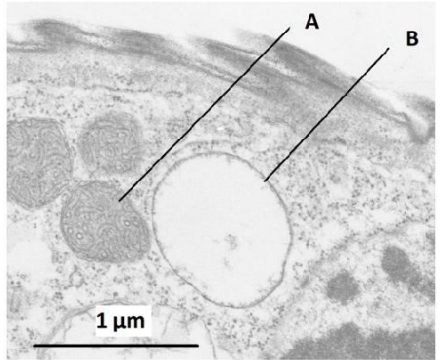
Explain why a small surface area to volume ratio limits cell size.

Describe an example of an emergent property?

Briefly explain each of the following:

- Specialized tissues can develop by cell differentiation
- Stem cells can divide and differentiate along different pathways
- Use of stem cells to treat Stargardt's disease

Name organelles A & B. Calculate the size of each.



The image shows a cross-section of a cell with various organelles. Label A points to a large, clear, oval-shaped structure, likely a central vacuole. Label B points to a smaller, circular structure with a distinct membrane, likely a chloroplast. A scale bar at the bottom left indicates 1 μm.

Draw a simple labelled diagram of a Prokaryote cell

What is the difference in resolution between electron microscopes and light microscopes?

Explain how phospholipids form bilayers due to the **amphipathic** properties

Describe three locations & five functions of membrane proteins.

Location	Function

Describe how molecules move across membranes by

- simple diffusion,
- facilitated diffusion,
- osmosis
- active transport.

Theories are modified in the light of new evidence and gradually improve.  
List 5 discoveries in the development of the fluid mosaic model of membranes

List the stages in cell division by mitosis? Give a detail about each stage.

Mitosis phase	Detail(s)

What causes the cell cycle & division to go wrong and cause 1° and 2° tumors in cancer? Use the terms cyclins, mutagens, oncogenes and metastasis