

Topic 1 Cells

Introduction to cells: Questions to answer in complete sentences. The questions must be answered in 7 lines or less. Only include relevant info, no general bla-bla.

Questions to include in the nice notebook:

- What does the cell theory state?
- Give examples of tissues and organisms that do not fit the theory and explain why.
- How are Paramecium and Chlamydomonas similar or different in relation to the functions of life?
- What are stem cells and how are they relevant for repair?
- How can stem cells be used for treatment of two diseases?
- What are some arguments for and against the use of stem cells in therapy?
- What is cell differentiation and how does it occur?
- What are emergent properties? Give an example.
- What role does resolution and magnification play in microscopy?
- How are prokaryotes and eukaryotes similar and different?
- How does binary fission in prokaryotes work?
- Why is a large surface area to volume ratio important for cells?
- Explain how the Davson Danielli membrane model is similar and different from the fluid mosaic membrane model.
- Explain the role of phospholipids, proteins and cholesterol in a membrane
- What is diffusion and what are the different types of diffusion?
- How do protein pumps work, specifically the Sodium-potassium pump?
- How does the Potassium channel protein open and close?
- What are the steps of exocytosis?
- What did Louis Pasteur show?
- What is the Endosymbiotic theory?
- Outline the phases of mitosis.
- What events occur during the cell cycle?
- How do tumors form?

Drawings to include in the nice notebook:

- Prokaryote
- Eukaryote
- Fluid mosaic membrane model
- Stages of mitosis
- Cell cycle
- Drawings explaining the different methods of membrane transport