

# Topic 2.10: Compartmentalization

Cells have membranes that allow them to establish and maintain internal environments that are different from their external environments.

1. Describe the membrane-bound structures of the eukaryotic cell.
  - a. Membranes and membrane-bound organelles in eukaryotic cells compartmentalize intracellular metabolic processes and specific enzymatic reactions.
    - i. Why would a cell need to have a different internal environment than external environment? Give a cell type example:
    - ii. Why are eukaryotic cells compartmentalized, but prokaryotic cells are not?
2. Explain how internal membranes and membrane-bound organelles contribute to compartmentalization of eukaryotic cell functions.
  - a. Internal membranes facilitate cellular processes by minimizing competing interactions and by increasing surface areas where reactions can occur.
    - i. List three different cellular reactions and the organelles they occur in, that may be taking place in a eukaryotic cell
    - ii. Why is the surface area so important to cells?