Chapter 1 Cells are the basic unit of life and often combine with other cells to form tissues.	
Key Concepts	**Chapter Summary**
• Plant and animal cells • Organelles and their functions • Cell cycle • Cell specialization • Tissue formation • Cancer cells	• Cells have special structures that enable them to perform important life functions. • Scientists use technology like the microscope to understand more about the cell. • The life cycle of a cell has four stages. • Growth and repair of cells is accomplished by mitosis. • Cancer cells have abnormal rates of cell division. • Stem cells divide to form specialized cells. • Specialized cells group together to function as a tissue.

□ anaphase	□ Golgi apparatus	□ rough endoplasmic reticulum
□ apoptosis	□ granum	□ sister chromatids
□ cancer cell	□ interphase	□ smooth endoplasmic reticulum
□ cell	□ lysosomes	□ stem cell
□ cell cycle	□ meristematic cells	□ stomate
□ cell membrane	□ meristematic tissue	□ telophase
□ cell specialization	□ mesophyll	□ thylakoid
□ cell wall	□ metaphase	□ tissue
□ centriole	□ mitochondria	□ vacuoles
□ chloroplast	□ mitosis	□ vesicles
□ chromosome	□ nucleus	□ xylem
□ concentration	□ organelle	
□ cytokinesis	□ phloem	
□ cytoplasm	□ prophase	
□ cytoskeleton	□ red blood cells	
□ differentiation	□ regeneration	
□ diffusion	□ ribosomes	

Systems Biology

The study of how living organisms stay alive. It includes how structure and function are connected and how life has developed specialized parts that work together to make life.

Characteristics of Life

- **Cellular Organization [Cell Theory]**
  - All living things are made up of one or more cells
  - The cell is the smallest unit capable of life functions
  - Basic cellular structure is similar in all organisms
  - All cells come from preexisting cells
- **Reproduction**
  - Continuation of the species (producing offspring)
- **Metabolism**
  - Sum of all chemical reactions in an organism
  - Use of energy; production of energy
- **Homeostasis**
  - Ability to keep constant internal environment
  - Body temperature, sugar levels
- **Heredity**
  - Genetic material to pass on characteristics/traits
- **Responsiveness**
  - Respond to stimuli
  - Environmental conditions, predator/prey
- **Growth and development**