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**
- **Metabolism**
- **Homeostasis**
- **Heredity**
- **Responsiveness**
- **Growth and development**

Section 1.1 – Cell Biology

Levels of Organization

Atoms and molecules
✯Cells
✯Tissues
✯Organs
✯Organ systems
Organism
Population
Community
Ecosystem
Biome
Biosphere

Prokaryotic Cells

- Considered the first cells
- Very primitive cells
- No membrane bound nucleus or organelles
- Can carry out most cellular functions but not as efficient
- Exist today, we know them as bacteria

Eukaryotic Cells

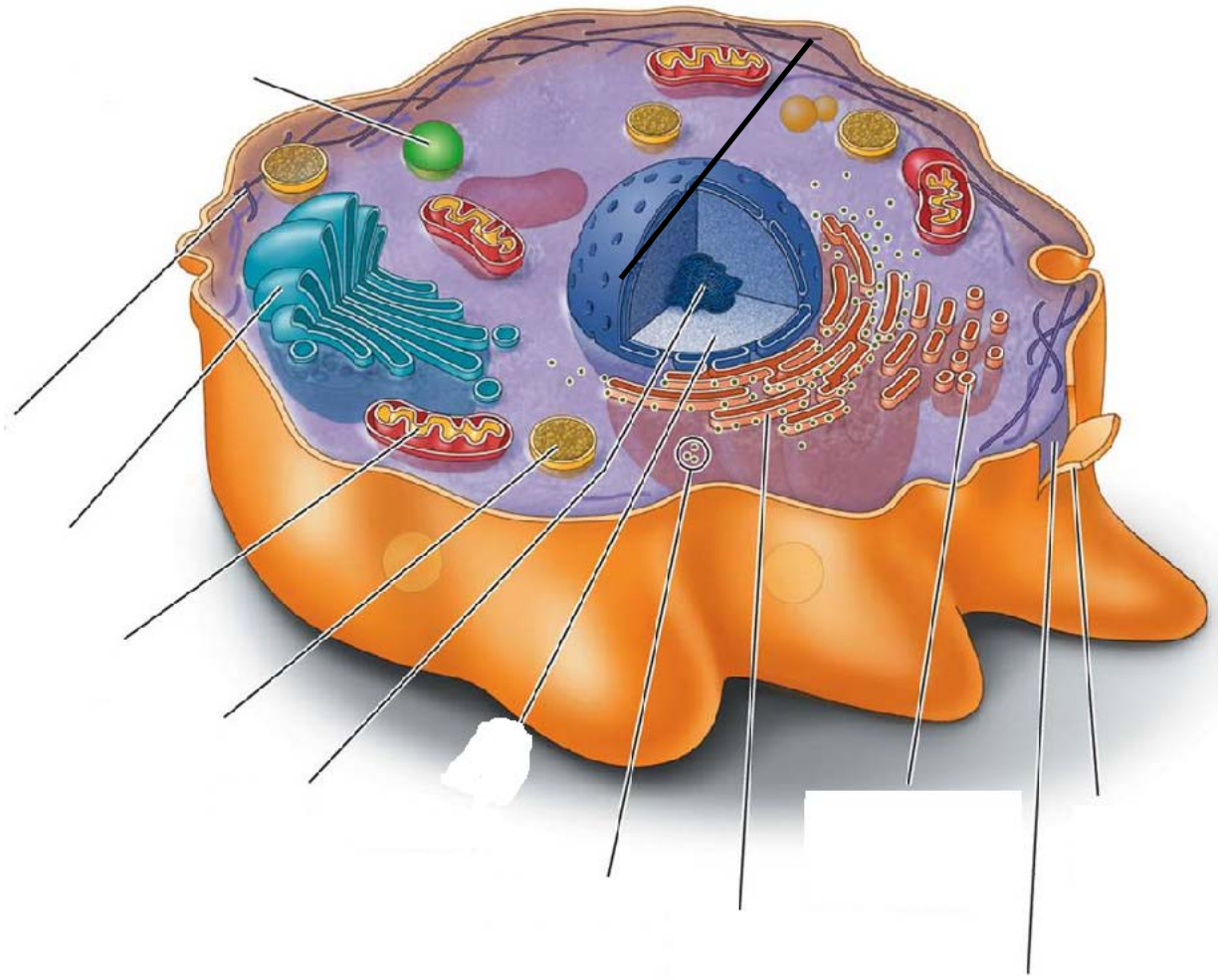
- Highly organized cells
- Have membrane bound nucleus and organelles
- Perform cellular functions in specialized structures
- Are found in animals, plants, protists (single cell organisms) and fungi
- Many types of specialized cells

The Model cell:

- ## STRUCTURE OF AN ANIMAL CELL

Use the provided word bank to label the structure of the provided animal cell.

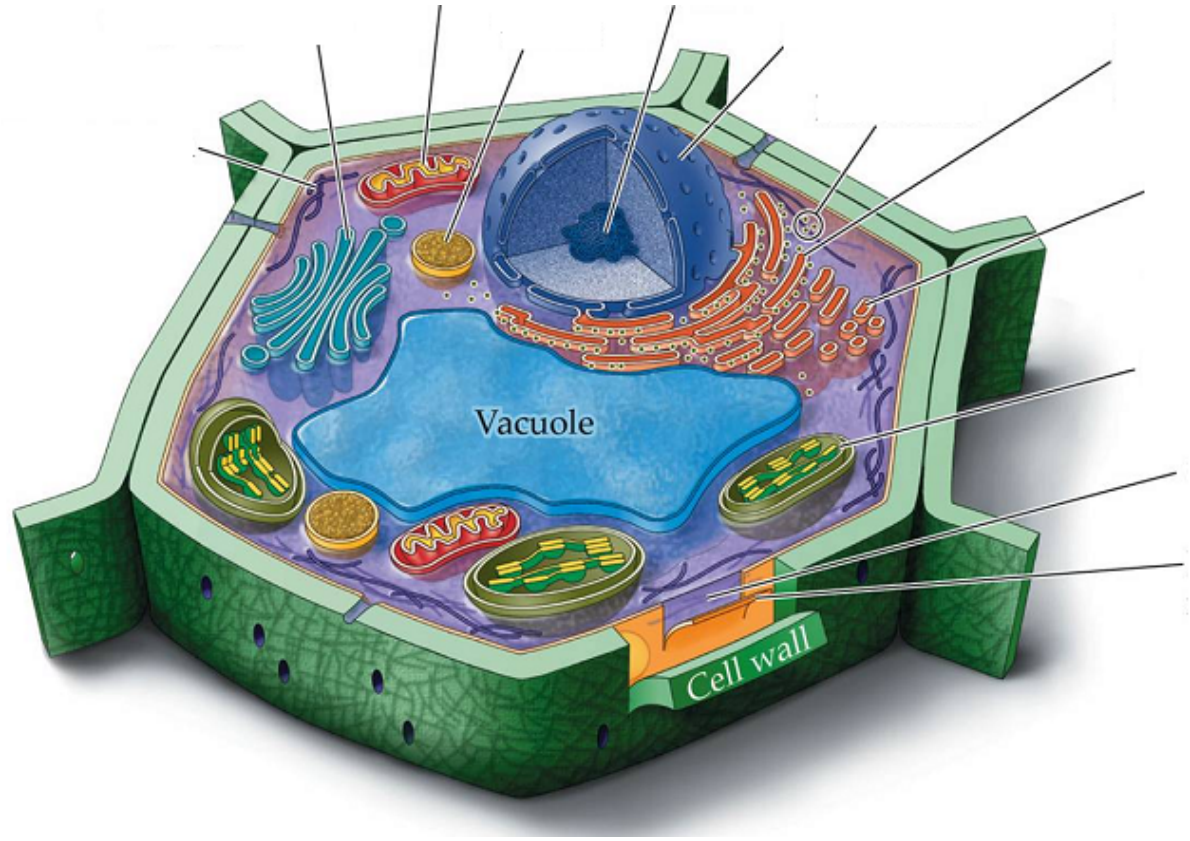
Nucleolus	Ribosome	Mitochondria
Cytoskeleton	Golgi Apparatus	Smooth Endoplasmic Reticulum
Rough Endoplasmic Reticulum	Lysosome	Cell Membrane
Nuclear Envelope	Vesicle	Cytosol



• STRUCTURE OF A PLANT CELL

Use the provided word bank to label the structure of the provided a plant cell.

Nucleolus	Ribosome	Mitochondria
Cytoskeleton	Golgi Apparatus	Smooth Endoplasmic Reticulum
Rough Endoplasmic Reticulum	Lysosome	Cell Membrane
Nuclear Envelope	Vesicle	Cytosol



Make a Table in your notebook

Organelle **-spelling counts**	**Function** **-use proper terminology**	**Appearance** **(Make a diagram)**	**Life process or analogy of what it does** **-something that you can remember**

Life Processes Where do this happen in a cell?

- Intake of nutrients
- Movement
- Growth
- Response to stimuli
- Exchange of gases
- Waste removal
- Reproduction

QUESTIONS:

- Page 16 questions 1-5