

## Section 2: Characteristics of Living Things - Notes

### Objectives:

- Describe the common characteristics of life.

### Warm-up:

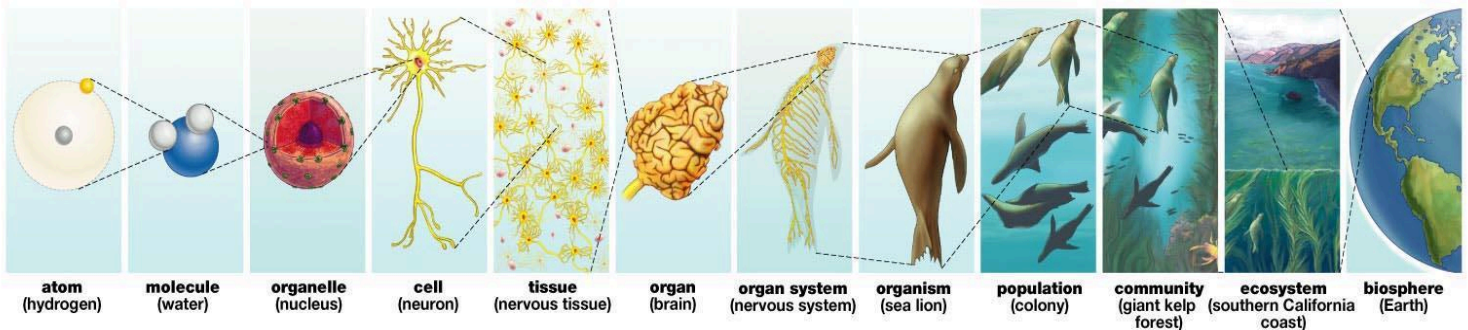
- List three characteristics that all living things have in common.

### Biology:

- Biology:** the \_\_\_\_\_
- All things are either \_\_\_\_\_
  - \_\_\_\_\_ : describes a living or once-living organism in an ecosystem
  - \_\_\_\_\_ : describes a nonliving factor in an ecosystem

### Living Things:

#### 1. Are highly organized compared to non-living objects



- Atom:** the \_\_\_\_\_ of an element that retains the chemical and physical properties of that element
- Molecule:** composed of \_\_\_\_\_ held together by chemical forces
- Organelle:** a \_\_\_\_\_ within a cell that has a specialized \_\_\_\_\_
- Cell:** the \_\_\_\_\_ of structure and function for \_\_\_\_\_ living organisms

- o **Tissue**: composed of \_\_\_\_\_ organized to perform a \_\_\_\_\_ function
- o **Organ**: composed of \_\_\_\_\_ serving a \_\_\_\_\_ function
- o **Organ System**: composed of a group of \_\_\_\_\_ that work together to perform a \_\_\_\_\_ function or task
- o **Organism**: A form of \_\_\_\_\_; an animal, plant, fungus, protist or bacterium
  - All organisms belong to one of the six kingdoms of life:
    - \_\_\_\_\_
    - \_\_\_\_\_
    - \_\_\_\_\_
    - \_\_\_\_\_
    - \_\_\_\_\_
    - \_\_\_\_\_
- o **Population**: a group of \_\_\_\_\_ of the \_\_\_\_\_ species living in a specific geographical area and reproducing
- o **Community**: different \_\_\_\_\_ of organisms interacting in a shared environment
- o **Ecosystem**: a system composed of \_\_\_\_\_ and \_\_\_\_\_ components of an environment
- o **Biome**: a large area or geographical region with distinct \_\_\_\_\_ groups \_\_\_\_\_ to that environment.
- o **Biosphere**: the \_\_\_\_\_ on Earth; \_\_\_\_\_ total of all ecosystems on Earth

**Check for Understanding:** List the following in order from smallest to largest:

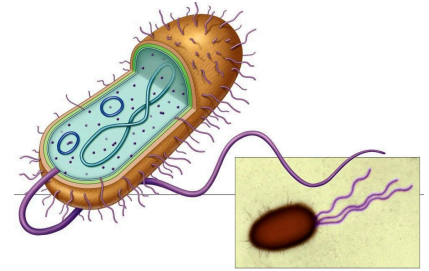
Molecule, cell, organelle, organ, atom, tissue

## 2. Are made of one or more cells

- o All cells have \_\_\_\_\_ common components: genetic material (\_\_\_\_\_), \_\_\_\_\_, \_\_\_\_\_, and a plasma membrane.

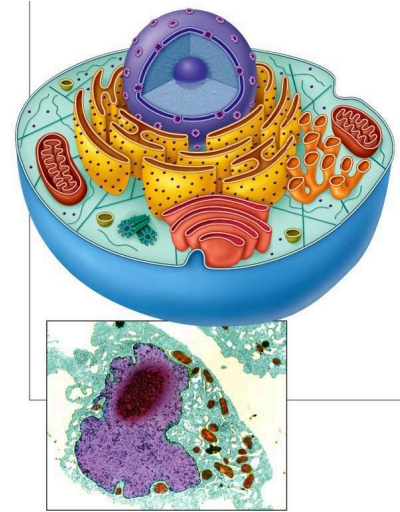
o Prokaryotes:

- \_\_\_\_\_
- **Unicellular:** made of a \_\_\_\_\_ cell
- No \_\_\_\_\_; DNA in middle of cell
- Archaeobacteria and \_\_\_\_\_



o Eukaryotes:

- \_\_\_\_\_ cells
- Some are \_\_\_\_\_ (most protists)
- Some are \_\_\_\_\_ (some protists, plants, fungi, animals)
  - **Multicellular:** made up of \_\_\_\_\_  
\_\_\_\_\_ cell
- DNA in \_\_\_\_\_
- Has \_\_\_\_\_



**Check for Understanding:** What is one difference and one similarity between prokaryotic and eukaryotic cells?

3. Can take in and use energy

o **Metabolism:** combination of \_\_\_\_\_  
in a cell

- Cells use \_\_\_\_\_ to build complex substances like \_\_\_\_\_  
or \_\_\_\_\_
- Cells gain \_\_\_\_\_ by breaking complex molecules into  
\_\_\_\_\_ ones, like CO<sub>2</sub>

o **Autotroph:** any organism that \_\_\_\_\_ its own \_\_\_\_\_.

- Examples: \_\_\_\_\_

o **Heterotroph:** any organism that \_\_\_\_\_ make its own food, but  
must get food elsewhere

- Examples: \_\_\_\_\_

4. Can maintain a relatively constant internal environment

- \_\_\_\_\_: the regulatory process in which an organism regulates its internal environment.

5. Can respond to their environment

6. Can reproduce

- \_\_\_\_\_ Reproduction:
  - Parent produces a \_\_\_\_\_
  - Examples: \_\_\_\_\_
- \_\_\_\_\_ Reproduction:
  - Usually \_\_\_\_\_ parents, but not always
  - Joining of DNA from \_\_\_\_\_ and \_\_\_\_\_

7. Have genetic material that allows them to function, grow, and develop

- **Deoxyribonucleic Acid (DNA)**: a molecule that encodes the \_\_\_\_\_ for living organisms
- DNA is \_\_\_\_\_ and allows for \_\_\_\_\_ and \_\_\_\_\_



8. Evolved from other living things

- **Evolution**: A process in which new species \_\_\_\_\_ from \_\_\_\_\_ species
- Occurs over \_\_\_\_\_

