

### 1.1 The characteristics of life:

- ❖ Requires energy (eating, breathing, photosynthesis, etc.)
- ❖ Reproduction (asexually or sexually.)
- ❖ Grows and develops.
- ❖ Cells are organized
- ❖ Responds to stimuli.
- ❖ Is homeostatic.
- ❖ Have the capacity to adapt.

### Life requires materials and energy:

- ❖ Energy- the capacity to do work.
- ❖ Metabolism- All of the chemical reactions that occur in a cell.

### Reproduction and development:

- ❖ Genes- units of information within an individual's DNA.
- ❖ Reproduction- An organism makes more of itself.
- ❖ Mutation- heritable changes in genes information
- ❖ Growth- the increase in size or number of cells in an organism
- ❖ Development- the changes that occur from conception to death.

### Responds to stimuli:

- ❖ Behavior- Is meant to minimize injury, help in acquiring food, and reproducing.

### Homeostatic:

- ❖ Homeostasis- the tendency towards a stable environment.

### Adaption:

- ❖ Adaptations- are the features that make organisms better suited for their environment.
- ❖ Natural selection- the changes of a characteristic in a population over time.
- ❖ Evolution- the change in frequency of traits in a population and species.

### Levels of Biological Organization:

1. Cell- The smallest unit of life.
2. Tissue- a group of similar cells that perform a particular function.

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