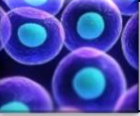



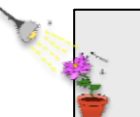


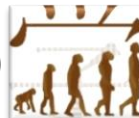


CONCEPT: CHARACTERISTICS OF LIFE

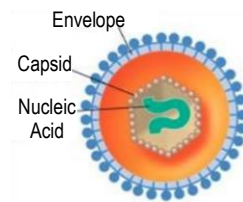
- There are _____ characteristics shared by all living organisms that distinguish them from nonliving matter.

EXAMPLE: Characteristics of Life

1) 	Composed of _____: the cell is the basic and most fundamental unit of life.	5) 	_____: The capacity to produce more life, either sexually or asexually.
2) 	_____: Organisms are not random and are highly organized using simpler atoms to build larger molecules & structures to survive.	6) 	A dynamic _____: reactions allow for the extraction & transformation of environmentally acquired energy.
3) 	Response to _____: Can respond to specific triggers from the environment.	7) 	_____: All life contains DNA, the hereditary material which is passed down to future generations.
4) 	Maintain _____: Mechanisms for regulating & maintaining/stabilizing their internal chemistry.	8) 	_____: DNA mutations over time lead to adaptation & improved fitness in changing environments.



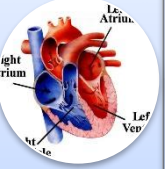
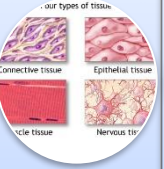
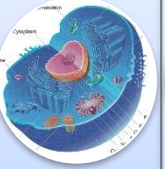




- Viruses are not considered alive.

□ Question: Which characteristics of life do they lack? _____, _____, _____, _____



- All living organisms contain a biological hierarchy of organization:

EXAMPLE: Biological Levels of Organization

								
Multicellular Organism	Organ Systems		Tissues			Macromolecule		Atoms
<ul style="list-style-type: none"> • Human • Leopard • Whale 	<ul style="list-style-type: none"> • Cardiovascular System • Digestive System • Nervous System 	<ul style="list-style-type: none"> • Heart • Stomach • Brain 	<ul style="list-style-type: none"> • Muscle • Epithelial • Connective • Nervous 	<ul style="list-style-type: none"> • Myocytes • Neurons • Erythrocytes 	<ul style="list-style-type: none"> • Nucleus • Mitochondria • Chloroplast • Plasma/Cell Membrane 	<ul style="list-style-type: none"> • Proteins • Carbohydrate • Lipids • Nucleic Acids 	<ul style="list-style-type: none"> • Water (H₂O) • Oxygen gas (O₂) • Carbon dioxide (CO₂) 	<ul style="list-style-type: none"> • Oxygen (O) • Carbon (C) • Hydrogen (H) • Nitrogen (N) • Phosphorus
← Larger						Smaller →		

- The Biochemical Unity of Life: all living organisms are remarkably similar at the molecular/atomic levels of life.

□ Lots of evidence at atomic/molecular levels support the theory of a common universal ancestor.

Biochemical Unity of Life



CONCEPT: CHARACTERISTICS OF LIFE

PRACTICE: Which of the following is not a characteristic of life?

- a) Ability to reproduce sexually or asexually.
- b) Composed of cells.
- c) Ability to metabolize oxygen.
- d) Maintain homeostasis.

PRACTICE: Indicate which of the following statements is false:

- a) Viruses contain hereditary information.
- b) Viruses do not have the ability to reproduce without hijacking a host cell.
- c) Viruses are composed of cells.
- d) Viruses do not need to extract/consume energy from the environment to exist.