Chapter 1
The Science of Life

Course:

Concepts in Biology

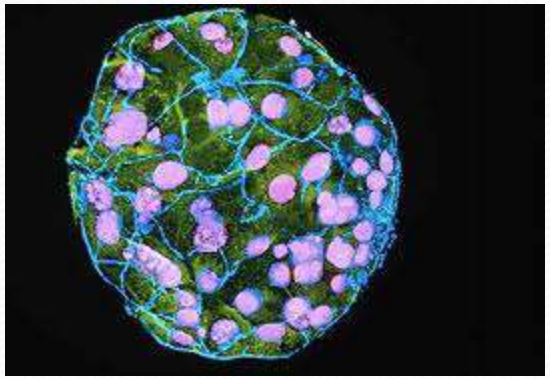
Section 1-1
Themes of Biology

- Unifying themes in biology allow biologists to study _____.
- Biology – _____(organisms).
  - Includes the study of single cells to the global interactions of millions of organisms!

6 Unifying Themes in Biology

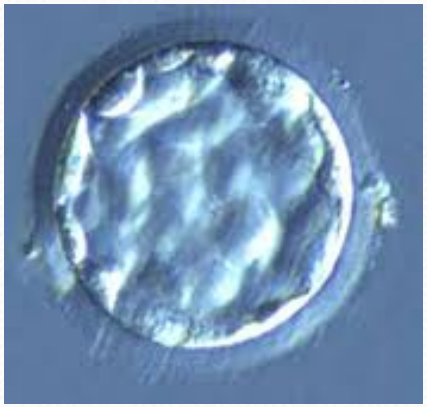
1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

6 Unifying Themes in Biology



1. Cell Structure and Function:

- The cell is the_____.
- All organisms are made of _____.
- All cells come from _____ cells.
- Organisms can be _____or _____.
- Cell have the ability to start out identical in early stages of development (pre-embryo stages). As an embryo develops, cells have the ability to change into different types (muscle, skin, etc.). This process is known as: _____- cell become "different".



6 Unifying Themes in Biology

2. Stability and Homeostasis:

- Homeostasis (equilibrium) refers to the stable internal conditions all organisms strive to maintain _____.

- Examples of items humans want to keep stable – blood pressure, blood sugar levels, body temperature, heart rate……

6 Unifying Themes in Biology

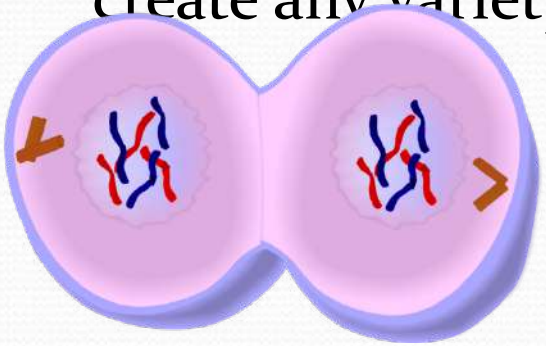
3. Reproduction and Inheritance:

- _____

_____= REPRODUCTION.

_____– DNA from two parents is combined.
ore variety in the population.

_____- Involves only 1 organism. The cell splits – each new cell is an exact copy of the original. Does not create any variety in population.



6 Unifying Themes in Biology

3. (Continued) Reproduction and Inheritance:

Hereditary information is contained in _____ = Deoxyribonucleic Acid.

- Gene = _____

_____

_____

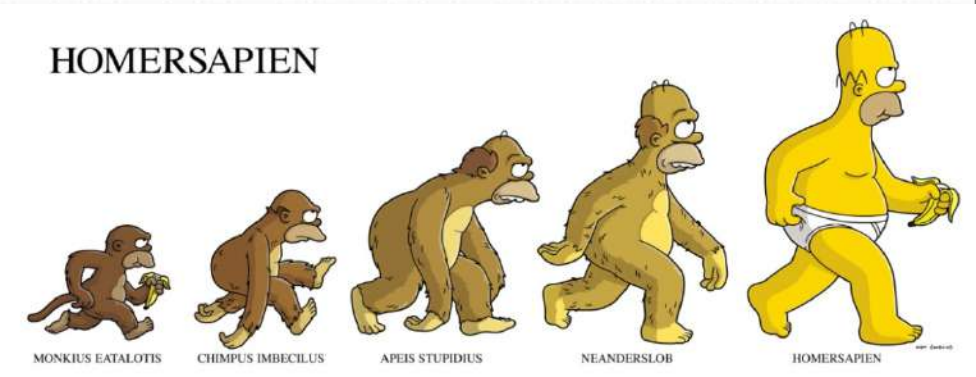
_____.

6 Unifying Themes in Biology

4. Evolution:

- Theory of Evolution = _____ _____. This explains why organisms look and behave the way they do.

- Natural Selection – Organisms with _____ _____are better able to _____. This leads to the idea of "Survival of the Fittest". This can lead to changes in a population over time = Evolution.



6 Unifying Themes in Biology

5. Interdependence of Organisms:

- Ecology = The study of _____

_____

_____.

- Ecosystem = An environmental community in which its boundaries are set.

- Human impact (i.e.. Global warming, pollution, etc.) must be considered in the ecosystem.

6 Unifying Themes in Biology

6. Matter, Energy, Organization:

- A constant supply of energy is needed to maintain the highly organized structure of organisms.

- Photosynthesis supplies almost all of the energy for life on earth.

- Autotrophs - _____ _____. Exs.) green plants, cyanobacteria.
- Heterotrophs –_____ _____.Exs.) animals, humans.

Section 1-2: Characteristics of Life

1. Cells – all living things are made of cells.
2. Organization – all organisms take natural materials and organize them in a complex way.
3. Energy Use – all living things use energy = Metabolism.
4. Homeostasis - all living things maintain stable internal conditions.
5. Growth – all living things grow from cell division and cell enlargement.
6. Reproduction – essential for the continuation of the species.

Section 1-3
Scientific Method

The Scientific Method is a logical problem solving system that scientists are expected to use as they conduct research. This same method also has very practical use in everyday life.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____