MULTICELLULAR LIFE

5.5 Power Notes

Organ System
Organs that carry out
similar functions

Organs
Groups of tissues that work together to perform similar or related functions

Homeostasis:
Maintained by the interaction of different organ systems that coordinate the body's functions.

Tissues

Groups of cells that work together to perform a similar function.

Cells

Smallest, most basic structural unit of life; typically becomes specialized

Defining characteristics:

- 1. Ability to divide and renew themselves for long periods of time.
- 2. Can Remain in undifferentiated form.
- 3. Can develop into a variety of specialized cell types.

Potential:

- Totipotent: can grow into any other cell type; includes fertilized egg and cells resulting from the firs few cell divisions.
- 2. Pluripotent: can grow into any type other than a totipotent cell type.
- Multipotent: can only grow into cells of a closely related family of cells

Stem Cells

Possible uses:

- Treat patients with leukemia and lymphoma
- may help cure diabetes, repair or replace damaged organs
- And improve current drug testing techniques

Origin:

- Adult stem cells; partially undifferentiated cells located among the specialized cells of many organs and tissues
- 2. Embryonic stem cells: taken from clusters of undifferentiated cells in a 3-to-5-day-old embryo; pluripotent; can be grown indefinitely in culture.