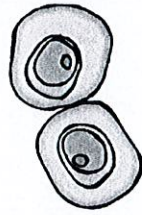


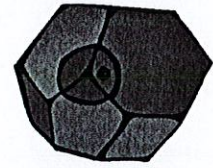
Body Organization



1. The body has an hierarchical organization.
 - **Hierarchy** is the arrangement of a particular set of items that are represented as being "above," "below," or "at the same level as" one another.
2. Cells are the basic unit of structure and function in the body.
3. Cells have different shapes & characteristics based on their function.



Cartilage cells



Liver Cell



Bone Cell



Muscle cell



Connective tissue cell

Cell organelles

4. Similar to organs within the body, cells consist of substructures that serve specific functions for the cell.

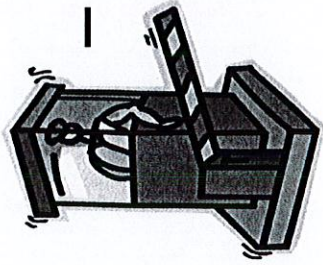
– An organelle is a structure within a cell that carries out the various processes necessary for a cell to function properly.

5. Three basic organelles found in most cells are....

– Nucleus (brain) which controls the functions of the cell.

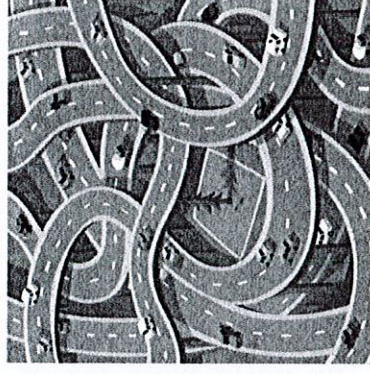
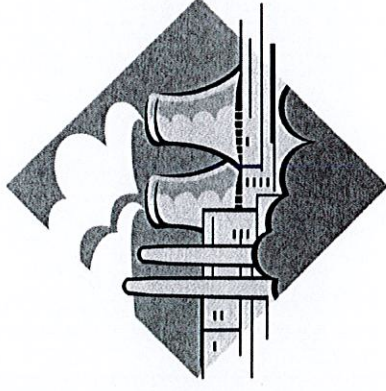
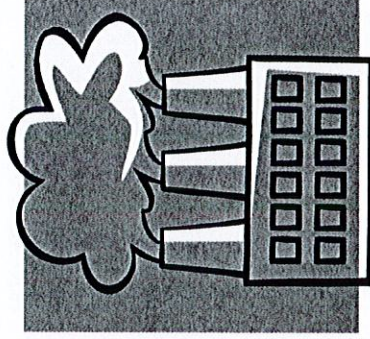
– Cytoplasm or jellylike substance found within the cell membrane & houses all of the organelles of the cell.

– Cell membrane (security guard) which defines the boundary of the cell & regulates what enters & leaves the cell.



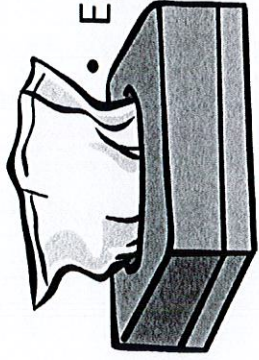
6. Other examples of organelles include

- Ribosomes or the cell's factories.
- Lysosomes or the cell's recycling plant.
- Mitochondria or the cell's power plant.
- Golgi body or the cell's packaging plant.
- Endoplasmic Reticulum or the cell's highway.



What is tissue?

7. When referring to the body, tissue is a group of similar cells performing the same or similar function.
8. The different types of tissue perform different functions.
 - Types of Tissue
 - Muscle Tissue
 - Tissue responsible for movement by contracting (shortening).
 - Nervous Tissue
 - Tissue responsible for delivering messages, through the form of electrical impulses, from the brain to other parts of the body.
 - Connective Tissue
 - Tissue that supports and connects the body.



- Epithelial Tissue

- Tissue that covers the inside & outside of the body as well as lines most internal organs.

Organs & Organ Systems

9. Organ is a group of similar tissues that perform a similar, specific, and often complex function.



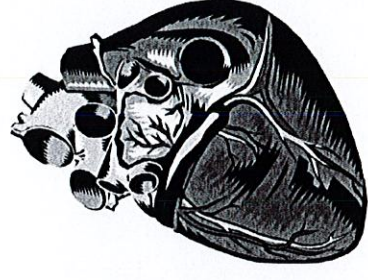
– Types of Organs

- Heart, Liver, Kidneys, Brain, Stomach, etc.

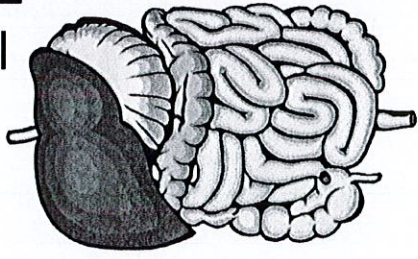
10. An organ system is a group of organs that work together to perform a major function.

11. The human body has over 9 different major organ systems.

– Nervous, Circulatory, Respiratory, Digestive, Excretory, Immune, Muscular, Skeletal, & Endocrine.



– Major Organ Systems

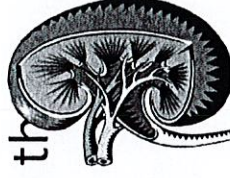


- Circulatory System: distribution system of the body; delivers blood, water, & other necessary nutrients to the parts of the body where they are needed.
- Digestive System: body system responsible for the breakdown & absorption of nutrients and minerals in food & drink.

- Endocrine System: body system that controls & regulates certain chemically controlled processes in the body.

– Example: Bone growth & hormone release during puberty

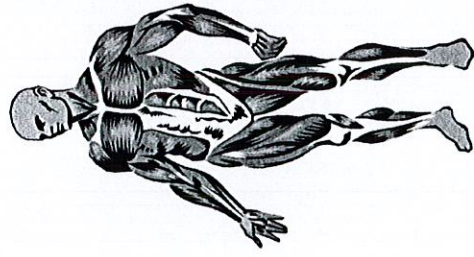
- Excretory System: body system that removes waste from the body

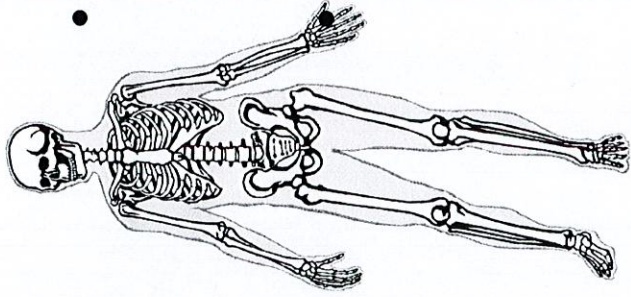


- Immune System: body system that fights off foreign invaders, infections, & disease.

- Muscular System: body system responsible for movement.

- Nervous System: body system that processes external & internal stimuli & controls the body responses as well as other bodily functions.





- Respiratory System: body system responsible for the gas exchange process; inhalation of oxygen and exhalation of carbon dioxide.
- Skeletal System: body system provides a framework for the body; provides protection to internal organs; also works in conjunction with the Muscular System to provide movement.

• Often more than 1 Organ System works together to accomplish a given task.

– Examples:

- Waste removal: Digestive, Excretory & Circulatory
- Breathing: Respiratory & Circulatory.
- Movement: Skeletal & Muscular

