Objective

• SWBAT arrange in order the organizational levels of the human body from the cell through organ systems.
Bat embryos!
Think about a marching band...

Would you want everyone to play the same instrument?
No – to form a successful marching band, organization is critical. Your body is the same way.
Cells

- The **cell** is the **basic unit of structure and function** in living things.
- In multicellular organisms, cells are specialized for certain functions. (Each cell has a specific job.)
Check For Understanding

• What is the basic unit of structure and function in living things?

A. Organisms
B. Organs
C. Cells
D. Tissues
Levels of Organization in the Body
Tissues

• A **tissue** is a group of similar cells working together to perform a **specific function**.

• Types of tissue:
  – Epithelial tissue
  – Nervous tissue
  – Muscle tissue
  – Connective tissue
**Epithelial tissue**: covers and protects underlying tissue
Nervous tissue: sends electrical signals through the body
Muscle tissue: contracts and relaxes to produce movement
**Connective tissue**: joins, supports, and cushions organs
Check For Understanding

• Which statement about cells and tissues is correct?
A. Tissues are bigger than cells, because tissues make up cells.
B. Cells are bigger than tissues, because tissues make up cells.
C. Tissues are bigger than cells, because cells make up tissues.
D. Cells are bigger than tissues, because cells make up tissues.
Levels of Organization in the Body
Organs

• An **organ** is a group of different tissues that work together to perform a complex function.

• Example
  – Heart: made of muscle and epithelial tissue
  – Bladder: made of epithelial and connective tissue
Stomach
Liver

check
http://www.zdsolutions.it/flash/gallery_med.htm
Lungs

Diagram of the human lungs showing:
- Thyroid cartilage
- Cricoid cartilage
- Trachea
- Upper lobe
- Right primary bronchus
- Horizontal fissure
- Middle lobe
- Oblique fissure
- Lower lobe
- Right lobe
- Notch for the heart
- Left lobe
- Left primary bronchus
- Upper lobe bronchus (secondary)
- Lower lobe bronchus (secondary)
- Tertiary bronchi
- Upper lobe
- Lower lobe
- Alveoli
- Alveolar sac
Large Intestine
Check For Understanding

• Which of these parts of the body is the largest?

A. Cells
B. Tissues
C. Organs
D. They are all the same size.
Levels of Organization in the Body
Organ Systems

• An **organ system** is a group of organs working together to maintain homeostasis.

• Example:
  – Digestive system: made of mouth, esophagus, stomach, small intestine, large intestine
  – Supplies nutrients to cells
Respiratory System
Circulatory System
Nervous System

- Brain
- Spinal cord
- Peripheral nerve
Skeletal System
Muscular System
Check For Understanding

• What is the name for a group of organs working together to maintain homeostasis?

A. Tissue
B. Cell
C. Organ
D. Organ system
Levels of Organization in the Body
Organism

• An organism is a living thing.
Levels of Organization

- Cells
- Tissues
- Organs
- Organ Systems
- Organism
Check For Understanding

• Which diagram below correctly shows the levels of organization of the human body?

A. Cells → organs → organ systems → tissues
B. Cells → organs → tissues → organ systems
C. Cells → tissues → organ systems → organs
D. Cells → tissues → organs → organ systems