Vocabulary

cell  the smallest living part of an organism
    The human body has trillions of cells. A chicken egg has only one cell surrounded by food.

organ  a group of tissues that work together to carry out a certain function
    Organs in the human body include the brain, eye, skin, tongue, kidney, liver, and lung.

organ system  a group of organs that work together to carry out a certain function
    The function of the digestive system is to break food down into simple chemicals that the body can use.

tissue  a group of cells that work together to carry out a certain function
    Blood is a tissue. Blood carries nutrients, oxygen, and water to cells throughout the body. It carries carbon dioxide and other wastes away from cells.
Parts of a Cell

Plant Cell

- Nucleus
- Cell wall
- Cytoplasm
- Cell membrane

Animal Cell

- Nucleus
- Cell membrane
- Cytoplasm
What Do Cells Look Like?

Plant Cells

1. Look at the slide of onion cells. Draw what you see.
2. Label the cell wall, nucleus, and cytoplasm.

Animal Cells

3. Look at the slide of cheek cells. Draw what you see.
4. Label the cell membrane, nucleus, and cytoplasm.

5. What is the function of the nucleus?
# Digestive System

**Taste Buds** The tongue has many taste buds. They are located between the bumps you see. Taste buds sense four basic flavors—sweet, sour, salty, and bitter. You can taste many more flavors because taste is also affected by your sense of smell.

**Salivary Glands** Salivary glands in your mouth make saliva. Saliva breaks down starches into sugars. It also makes food slippery so it can pass easily down your throat.

**Stomach** The inside of the stomach has folds. The folds give more area for breaking down food. Smooth muscles are inside the stomach wall. Smooth muscle contracts without your thinking about it. The contractions crush and grind food. The stomach lining releases digestive juices that help break down food.

**Small Intestine** The fingerlike structures are called villi. Villi have tiny blood vessels inside them. Villi absorb nutrients into the bloodstream. Smooth muscle in the intestine’s wall contracts to push food along.

**Large Intestine (Colon)** The colon absorbs water from the waste that is left after food is digested. Smooth muscle inside the colon’s wall contracts to push the wastes along.

**Liver** The liver makes bile. Bile breaks fats into small droplets so they can be digested in the small intestine. The liver also breaks down harmful chemicals so your body can get rid of them.

**Adipose Tissue** Adipose tissue contains fat cells. Fat is a source of energy for your body. It also helps keep your body warm. If you eat more food than your body needs right away, the extra is stored in fat cells.
Circulatory System

**Artery and Vein**  Arteries look hollow and round and have thick walls. The thick walls have layers of muscles for moving blood through the body. Veins have thinner walls than arteries. Arteries carry blood away from the heart. Veins carry blood toward the heart.

**Blood**  The tiny red dots you see on the slide are red blood cells. The purple blobs are the nuclei of white blood cells. Red blood cells are tiny enough to fit into the smallest blood vessels. Red blood cells carry oxygen to body cells. White blood cells help your body fight diseases.

**Heart**  The muscle fibers you see are cardiac muscles. They are from the heart. The heart is a strong muscle that pumps constantly without your thinking about it. It pumps blood to the lungs to collect oxygen and get rid of carbon dioxide. It pumps blood throughout the body to deliver oxygen to body cells and collect wastes.
Respiratory and Excretory Systems

Respiratory System

**Lung** The holes you see are tiny sacs called alveoli. Each lung has about 500 million alveoli. Blood vessels called capillaries surround the alveoli. Blood in the capillaries picks up oxygen in the alveoli and leaves carbon dioxide. The larger hole you see is a tube for bringing outside air to the lungs. The tube also takes carbon dioxide out of the lungs. Cartilage surrounds the tube and protects it.

Excretory System

**Kidney** Each kidney has about one million tubes called nephrons. The nephrons remove wastes from the blood. The larger round structures with purple dots are where wastes are removed. Many of the long, hollow structures are tubes that carry wastes to the bladder.

**Skin** The skin is the largest organ of the body. It has two layers. The dark purple layer you see is the outer layer. The pink layer is the inner layer. The inner layer has sweat glands that release sweat to cool the body. The sweat also has extra salt that the body doesn’t need.

**Scalp** Hair grows from hair follicles on your skin. The scalp is covered with hair follicles. You can see the follicles as long, thin clear spaces. The dark area in some follicles is hair.
Nervous System

Cerebrum and Cerebellum  The cerebellum is the part of your brain that makes your movements smooth and controls balance. The cerebrum is the part of the brain that controls most thinking. Notice the deep folds that give more area for storing information.

Spinal Cord  The spinal cord has a membrane around it. This membrane protects the spinal cord. The spinal cord carries messages to and from the brain. The backbone protects the spinal cord.

Nerve  Nerves are long and thin and carry information from one place to another in the body. The small purple dots are the nuclei of nerve cells.
Muscular and Skeletal Systems

**Skeletal Muscle**  Muscle fibers are long, thin strands that contract and relax to move your bones. Muscles respond to signals from your brain and spinal cord.

**Bone, Decalcified**  This bone has had its calcium removed so you can see the structures inside it. The structure of bone makes it strong and keeps it from being too heavy. Bone has a thin, hard outer layer and a spongy inner layer. Inside, the bone is hollow and contains bone marrow.

**Bone, Ground**  Bone is made of cells that are surrounded by hard calcium. The dark spots in the rings are the bone cells. The large dark spot in the center is a canal that has blood vessels in it.

**Cartilage**  Use your thumb and index finger to bend your ear and the end of your nose. These parts of your body are made of cartilage. Cartilage also connects your ribs to your breastbone. Cartilage is flexible.
Section 1 Assessment

Vocabulary
Match each body system with its function. Write the correct letter on the line.

___ 1 circulatory system  a. supports the body
___ 2 respiratory system  b. carries oxygen to all body cells
___ 3 skeletal system  c. moves bones
___ 4 muscular system  d. takes in oxygen

Human Body Tissues
5 Which of these pictures shows bone tissue?
   Picture ________

   [Picture A and B]

Observing Cells
Look at the slide your teacher has set up on a microscope. Answer the questions.

6 List the cell parts that each cell has.

________________________________________________________________________
________________________________________________________________________

7 What is the round, dark structure inside each cell?

________________________________________________________________________

8 What is the function of that structure?

________________________________________________________________________