

Lesson Outline**LESSON 1*****Transport and Defense*****A. The Body's Organization**

1. _____ are groups of organs in the body that work together to form a specific task.
2. Organ systems work together to maintain _____, or steady internal conditions, even when external conditions change.

B. Digestion and Excretion

1. Food is broken down in the body during _____.
 - a. After food enters the mouth, _____ breaks food into smaller parts.
 - b. _____, which contains enzymes, also helps the mouth break down food.
2. When you swallow, food, water, and other liquids move into the _____, a hollow tube that connects the mouth to the stomach.
3. From the stomach, food next moves into the _____, which has functions of digestion and absorption.
4. The _____, or colon, receives digested food that the small intestine did not absorb and absorbs water from the remaining waste material.
5. _____ are the parts of food needed for the body to grow and survive.
 - a. Nutrition labels on food show the amount of each _____ in a food.
 - b. Nutrients in absorbed food contain energy, which is measured in _____.
6. After digestion, substances that are not used are removed by the _____, which includes the lungs, skin, liver, kidneys, bladder, and rectum.

C. Respiration and Circulation

1. The _____ exchanges gases between the body and the environment. _____ enters the body when you inhale. _____ leaves the body when you exhale.

Lesson Outline continued

2. The heart, blood, and blood vessels make up the _____.
 - a. Your _____ is made up of muscle cells that constantly contract and relax, pumping blood to the rest of your body.
 - b. Blood travels through your body in tiny tubes called _____.
 - c. The three main types of blood vessels are arteries, veins, and _____.
3. Blood contains red blood cells, _____, and white blood cells.
 - a. The liquid part of blood is called _____.
 - b. _____ carry oxygen, and _____ protect the body from infection and disease.
 - c. _____ help the body heal when you get a cut.
 - d. Scientists classify the proteins found on the surface of red blood cells into groups called _____, which include, type A, type B, type AB, and type O.
4. The tonsils, the spleen, the thymus, bone marrow, and lymph nodes are part of the _____. The lymphatic system has three main functions—removing excess _____, producing _____, and absorbing and transporting _____.
5. Protection from infection or toxins is called _____.
 - a. The _____ system produces immune cells, and the _____ system transports them throughout the body.
 - b. As part of the first line of defense, _____ and _____ prevent toxins and other substances from entering the body.
 - c. During the second line of defense or the immune response, _____ attack and destroy harmful substances.
 - d. The third line of defense includes _____ and _____, which help fight pathogens that have infected the body.

Lesson Outline**LESSON 2****Structure, Movement, and Control****A. Structure and Movement**

1. The _____ includes bones, ligaments, tendons, and cartilage.
2. The skeletal system protects internal _____, provides support, aids body movement, and stores _____.
 - a. The element _____, which is required for healthy muscular and nervous systems, is stored in bones.
 - b. The _____ gives your body structure and support.
 - c. Your brain is protected by the _____, which is one way bones protect organs.
 - d. The skeleton works with the _____ to help the body move.
3. Bones contain two types of _____.
 - a. The hard, outer part of the bone is called _____.
 - b. The bone tissue that contains many holes is called _____.
 - c. Some bones also contain bone _____, which is a part of the lymphatic system and makes white blood cells.
4. Almost half of your body mass is muscle cells, which make up the _____.
 - a. The type of muscle tissue that works with the skeletal system to help you move is _____ muscle.
 - b. _____ connect skeletal muscles to bone.
 - c. Muscle in the heart is _____ muscle.
 - d. _____ muscle tissue is in organs.

B. Control and Coordination

1. The _____ detects, processes, and responds to information in the body.
 - a. The basic unit of the nervous system is the _____ cell, also called a(n) _____.
 - b. The central nervous system contains the _____ and the _____ cord.

Lesson Outline continued

- c. Nerves outside the brain and spinal cord make up the _____.
 - d. Information entering the body through _____ is sent to the central nervous system.
 - e. After the central nervous system processes the information, it sends signals to the _____.
 - f. Functions, such as breathing and digestion, are automatic, or _____, and do not require you to think about them to make them happen.
 - g. Many functions of the nervous system require you to think about them to make them happen and are called _____.
 - h. Automatic movements in response to a signal are called _____. Signals for these movements are processed by the _____, not the brain.
 - i. Humans detect their external environment by using five senses—vision, touch, _____, _____, and _____.
2. The _____ uses hormones to communicate with other organ systems.
- a. _____ are chemical signals sent from the organs of the endocrine system.
 - b. Hormones take longer to send a signal than _____ do, but the effect lasts longer.
 - c. The endocrine system works with other body systems to maintain _____.

Lesson Outline**LESSON 3*****Reproduction and Development*****A. Reproduction and Hormones**

1. Some organs of the endocrine system ensure that humans can _____.
 - a. _____ is the process by which new organisms are produced.
 - b. Human reproductive cells, or _____, are necessary for reproduction.
 - c. Male gametes are called _____.
 - d. Female gametes are called _____.
 - e. _____ is the process during which a sperm and an egg join together.
 - f. The cell that forms from fertilization is called a(n) _____.
2. The male reproductive system produces _____ and delivers it to the _____.
 - a. Sperm are produced in the _____.
 - b. Testes also produce the hormone _____, which helps sperm develop.
 - c. After sperm have developed, they travel to the _____, which delivers the sperm to the female reproductive system in a fluid called _____.
3. The female reproductive system contains two _____ in which eggs grow and mature.
 - a. Ovaries produce the hormones _____ and _____, which help eggs mature.
 - b. Mature eggs leave the ovaries and enter the _____ tubes, where they might join with any sperm present.
 - c. A zygote moves from the fallopian tube and attaches itself to the wall of the _____.
 - d. If an egg is not _____, it travels through the fallopian tube and uterus and breaks down.

Lesson Outline continued

4. The endocrine system controls egg maturation and release and the thickening of the lining of the uterus in a process called the _____.

 - a. The _____ takes place about every 28 days.
 - b. During the first part of the cycle, eggs grow and mature and the thickened lining of the _____ leaves the body.
 - c. Next, mature eggs leave the _____, and the lining of the _____ thickens.
 - d. In the third part of the cycle, the thickened lining and _____ eggs break down.

B. Human Development

1. A zygote develops into a(n) _____, which attaches to the uterus and continues to grow.
 - a. An embryo develops into a(n) _____, which is the last stage before birth.
 - b. For a human, it takes approximately _____ weeks from fertilization to birth—a development time called _____.
 - c. During birth, the endocrine system releases hormones that help the _____ push the fetus through the _____ and out of the body.
2. The first stage after birth is _____, the first 2 years of life.
 - a. The stage of development from 2 years through 12 years is called _____.
 - b. The stage after childhood is called _____, during which skeletal and muscular systems, lungs, kidneys, and the reproductive system continue to grow.
 - c. The time during which the reproductive system matures is called _____.
 - d. After adolescence, humans enter _____.
 - e. In later adulthood, hair turns gray, wrinkles form in the skin, and bones become weaker in the process called _____.
 - f. Aging is a slow process that can last for _____.