

Dear Parent,

Your son’s or daughter’s science class will soon begin exploring the unit entitled “Body Systems.” In this chapter, students will learn about the how life is organized and how organ systems interact to carry out life functions. By the end of the unit, students should demonstrate a clear understanding of and discuss the following topics:

1. How life is organized

- The body has levels of organization that build on each other. **Cells** make up **tissues**, tissues make up **organs**, and organs make up **organ systems**.

2. How systems interact to carry out life processes

- Humans—and other complex multicellular organisms—have systems of organs that work together, carrying out processes that keep us alive.
- The function of an organ system depends on the integrated activity of its organs. For instance;

Organ system	Function	Organs, tissues, and structures involved
Cardiovascular	Transports oxygen, nutrients, and other substances to the cells and transports wastes, carbon dioxide, and other substances away from the cells; it can also help stabilize body temperature and pH	Heart, blood, and blood vessels
Digestive	Processes foods and absorbs nutrients, minerals, vitamins, and water	Mouth, salivary glands, esophagus, stomach, liver, gallbladder, exocrine pancreas, small intestine, and large intestine
Muscular	Provides movement, support, and heat production	Skeletal, cardiac, and smooth muscles
Nervous	Collects, transfers, and processes information and directs short-term change in other organ systems	Brain, spinal cord, nerves, and sensory organs—eyes, ears, tongue, skin, and nose
Respiratory	Delivers air to sites where gas exchange can occur	Mouth, nose, pharynx, larynx, trachea, bronchi, lungs, and diaphragm
Urinary	Removes excess water, salts, and waste products from the blood and body and controls pH	Kidneys, ureters, urinary bladder, and urethra
Immune	Defends against microbial pathogens—disease-causing agents—and other diseases	Leukocytes, tonsils, adenoids, thymus, and spleen

- The survival of the organism depends on the integrated activity of all the organ systems, often coordinated by the endocrine and nervous systems.