2.1

* The respiratory system gets oxygen and removes carbon dioxide
  + Your body needs oxygen to survive
    - **Respiratory system** – functions to get oxygen from the environment and remove carbon dioxide and other waste products from your body.
      * Interacts with the environment and other body systems
      * gas exchange happens on a cellular level as well
        + **cellular respiration** – uses oxygen in chemical reactions that release energy.
    - Structures in the respiratory system function together
      * Nose, throat, and trachea
        + Cilia filter dirt and other particles
        + Mucus traps particles
        + Nasal cavity warms the air
        + **Trachea** – windpipe
        + **Epiglottis** – keeps air from entering the stomach
      * Lungs
        + **Bronchial tubes** – structures that branch throughout the lungs into smaller and smaller tubes
        + **Alveoli** – small sacs at the end of the bronchial tubes
        + Oxygen passes through the thin walls of the alveoli and is dissolved into the blood
      * Ribs and Diaphragm
        + Slight flexibility allows expansion of rib cage when you breathe to make room for lungs
        + **Diaphragm** – large muscle stretches across bottom of the thoracic cavity
    - The respiratory system is also involved in other activities
      * Speech and respiratory movements
      * Water removal

2.2

* The digestive system breaks down food
  + The body needs energy and materials
    - **Nutrients** – important substances that enable the body to move, grow, and maintain homeostasis
    - **Digestion** – the process of breaking down food into usable materials
  + The digestive system moves and breaks down food
    - Performs complex jobs
    - **Peristalsis** – wavelike contractions of the smooth muscles to move material through the digestive system
    - Chemical and mechanical digestion is involved in breaking down food
      * **Chemical digestion** – use of chemicals and enzymes to break down food
      * **Mechanical digestion** – the mixing and churning to break food down into smaller pieces
  + Materials are broken down as they move through the digestive tract
    - Mouth and esophagus
    - Stomach
    - Small intestine
    - Large intestine
  + Other organs aid digestion and absorption
    - Liver
    - Gallbladder
    - Pancreas

2.3

* The urinary system removes waste materials
  + Life processes produce wastes
    - Disposes of liquid wastes removed from the blood
    - Respiratory system disposes of water vapor and waste gases from the blood
    - Digestive system disposes of solid waste products from food
    - Skin releases wastes through
  + The urinary system removes waste from the blood
    - **Urinary system** – contains several structures – kidneys, bladder, ureters, urethra
    - **Urine** – liquid waste
  + The kidneys act as filters
    - **Nephron** – regulates the makeup of the blood
      * Liquid is filtered out of the blood through the glomerulus
      * This liquid travels through the nephron and nutrients are returned to the blood, urine travels through the collecting duct and into the ureter
    - Kidneys remove waste from the blood and regulate the amount of water in the body