1.1

* The human body is complex
	+ Levels of organization
		- **Cells** – smallest basic unit of life
		- **Tissues** – groups of similar cells that work together to perform a particular function
		- **Organs** – a structure that is made up of two or more types of tissue that work together to carry out a function in the body
		- **Organ systems** – a group of organs that together perform a function that helps the body meet its needs for energy and materials, together allow the organism to grow, reproduce, and maintain life
		- **Organism** – collection of cells to organ systems working constantly together for survival
	+ The body’s systems interact with one another to maintain homeostasis
		- **Homeostasis** – stable internal conditions

1.2

* The skeletal system provides support and protection
	+ Bones are living tissue
		- **Skeletal system** – made of connective tissue called bone, serves as the anchor for all of the body’s movement, provides support, and protects soft organs
	+ Two types of bone tissue
		- **Compact bone** – functions as the basic supportive tissue of the body, dense tissue that gives the bone much of its strength
		- **Spongy bone** – strong but lightweight, ends of long bones and most irregular bones, inside the compact bone
			* **Marrow** – produces red blood cells, fills the spaces in spongy bone
			* **Blood vessels** – transport new red blood cells from the marrow and carry materials to and from the bone
	+ The skeleton is the body’s framework
		- **Axial skeleton** – the part of the skeleton that forms the axis, provides support and protection (skull, ribs, vertebrae)
		- **Appendicular skeleton** – functions mainly to allow movement (arms, legs)
	+ The skeleton changes as the body develops and ages
	+ Joints connect parts of the skeletal system
		- **Immovable joint** – locks bones together like puzzle pieces, bones of the skull
		- **Slightly movable** **joint** – able to flex slightly, ribs connected to the sternum
		- **Freely movable joint** – allow body to bend and move

1.3

* The muscular system makes movement possible
	+ Muscles perform important functions
		- Movement
			* Works along with the skeletal system
			* Muscles that produce movement are made up of individual cells called muscle fibers that contract and relax
			* Most muscles work in pairs, when they contract they shorten and pull against the bones
			* They do not push against the bone
			* Connected to bones by stretchy connective tissue
		- Maintaining body temperature
			* When muscles contract, they release heat
		- Maintaining posture
			* **Tension** – muscle tone, most muscles are always a little bit contracted even when sleeping and only relax completely when you are unconscious
	+ Your body has different types of muscle
		- Skeletal muscles
			* Muscles that are attached to your skeleton, perform voluntary movement
			* **Voluntary muscles** – muscles involved in voluntary movement, movement that you choose to make
			* Contract quickly (fast-twitch muscles)
		- Smooth muscle
			* Found inside some organs, like intestines and stomach, perform automatic movement
			* **Involuntary muscles** – perform involuntary movement, or automatic movement
			* Contract slowly
		- Cardiac muscle
			* Moves without conscious control, cells have a branched shape
			* Heart is made of cardiac muscle
			* Contract slowly
	+ Skeletal muscles and tendons allow bones to move
		- **Tendons** – strong tissues that attach skeletal muscles to bones
	+ Muscles grow and heal
		- Develop and strengthen due to maturity
		- Regular exercise increases muscle size – increases number of muscle cells and muscle cell size