**BRAIN STEM**

- The oldest evolutionary portion of the brain, connecting the brain to the outer portions of the CNS. The spine is controlled by vital life functions.

- Medulla: the base of the brainstem. Controls breathing, heart rate, and blood pressure.
-pons: the middle of the brainstem. Impacts facial expressions, sleep, and respiration.

**RETICULAR FORMATION**

- The connection between the brainstem and cerebral cortex. This region regulates sleep cycles and consciousness.

**THALAMUS**

- The center of the thalamus. The relay station for sensory signals.

**CEREBELLUM**

- The base of the brain that controls voluntary movements and posture. 

**LIMBIC SYSTEM**

- A small cluster of structures in the center of the brain.
- At the top of the brainstem that controls emotions and some aspects of drive.

- Hypothalamus: the center of temperature regulation, hunger, thirst, and sexual behavior.

- Amygdala: the center of the limbic system. Controls aggression and emotions.

- Hippocampus: a structure that plays an important role in the formation of explicit memories.

**THE NEURON**

- The basic unit of the nervous system. It is responsible for transmitting information through the body.

- Structure: dendrites receive signals, soma integrates, axon transmits signals, myelin sheath increases speed, synaptic knob releases neurotransmitters.

- Function: the neuron receives information, processes it, and then sends it to other neurons.

**THE NERVOUS SYSTEM**

- Divided into the central and peripheral nervous systems.

- Central nervous system (CNS): the brain and spinal cord. 
- Peripheral nervous system (PNS): includes nerves outside the CNS.

- Somatic nervous system: controls voluntary muscle movements.
- Autonomic nervous system: regulates involuntary functions.
- Sympathetic nervous system: increases heart rate and blood pressure.
- Parasympathetic nervous system: decreases heart rate and blood pressure.

- Sensory neurons: carry information from the body to the brain.
- Motor neurons: carry information from the brain to the body.

- Interneurons: connect sensory neurons to motor neurons, allowing for complex reflexes.