

## Nervous System Objectives:

Define these key terms:

regulation neuron cell body dendrite axon myelin sheath schwann cells  
nodes of ranvier synapse neurotransmitter receptor site stimulus response effector  
impulse sensory neuron interneuron motor neuron central nervous system cerebrospinal  
fluid meninges vertebrae cerebrum cerebellum thalamus hypothalamus medulla  
pons brain stem reflex reflex arc

- Recognize that nervous control depends mostly upon the functioning of neurons (nerve cells).
  - Provide one example of a stimulus and response.
  - Provide one example of an effector.
  - Draw & label the structures of a neuron.
  - State the structures and the function of a neuron.
  - Describe the direction an impulse travels along a neuron.
  - Draw & label the structures of a neuron.
  - Relate how a thermostat represents the negative feedback mechanism needed to maintain homeostasis.
  - Describe the direction an impulse travels along a neuron.
  - Explain the relationship between neurotransmitters and a synapse.
  - Describe the Lock & Key model for neurotransmitters & the postsynaptic membrane.
  - Name the 3 types of neurons.
  - Recognize that responses involve the action of effectors.
  - Label the sensory receptor, sensory, motor, interneuron, spinal cord, & effector on a diagram.
  - Distinguish between 2 types of reflex arcs (withdrawal reflex, knee-jerk reflex).
  - Describe the pathway of impulses in a reflex arc.
  - Compare & contrast between the similarities & differences of neurons & other cell bodies.
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- Simple organisms like the hydra and jellyfish lack a central nervous system. What is a central nervous system?
  - Describe the make-up of the following structures: skull, vertebrae, meninges, cerebrospinal fluid, fissure, & corpus callosum.
  - Label the locations of the cerebrum, cerebellum, medulla oblongata, & pons on a diagram.
  - Identify the functions of the cerebrum, cerebellum, medulla oblongata, & pons.
  - Label the 4 lobes of the brain.
  - Explain how Meningitis, Cerebral Palsy, Polio, Multiple Sclerosis and Parkinson's disease affects the human body.
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- Identify the structure & function of the peripheral nervous system.
  - Explain the difference between the sensory & motor division of the peripheral nervous system.
  - State the difference between the somatic & autonomic nervous system.
  - Describe how the sympathetic and parasympathetic systems work to maintain homeostasis.