Objective

• SWBAT relate organs and tissues in the nervous system to their functions.
Functions of the Nervous System

• Gathers and interprets information from inside and outside the body
• Makes the body respond to that information
Two Systems in One

Central Nervous System (CNS)
- Includes:
  - Brain
  - Spinal cord
- Gathers information from the PNS
- Sends commands to PNS

Peripheral Nervous System (PNS)
- Includes nerves that extend through body
- Gathers information from environment and sends it to brain
- Takes commands from the brain to move muscles
Neuron

- Nerve cell that transfers (conducts) messages through the body in the form of electrical signals (impulses)
Synthetic neurons
Nerves

- Collection of neurons and tissue bundled together
- Connect central nervous system (spinal cord and brain) to all muscles in the body
Developing neural tube in a mouse
Visual neurons in a male blowfly
A scientist examines this tissue under a microscope. Which statement best identifies a function of this tissue?

A. It breaks down and processes food.
B. It conducts information through the body.
C. It moves oxygen and carbon dioxide.
D. It provides structure and support.
Spinal Cord

- Contains bundles of neurons and tissues
- Connects the brain to the peripheral nervous system (all the nerves in your body)
The Brain

- Main control center of the body
- Controls muscle movement: sends electrical signals through nerves to muscles telling them to move
Check For Understanding

Which statement best describes how the nervous system helps a person react quickly after stepping on something sharp?

A  Electrical impulses are created by the muscles to move the foot away.
B  Each skin cell has pain receptors that directly cause muscle movement in the foot.
C  The muscles conduct pain impulses to the brain, which directs nerves to pull the foot away.
D  Signals travel on nerves to the spinal cord, which causes a reflex that pulls the foot away.