

# Physiology Class 4:

## Muscular, Nervous and Skeletal Physiology

### Activities

These activities are designed to be done at home. There is no grade given for these and they do not have to be turned in. The answer key has been emailed to your grown up.

#### Describe the reflex reaction when touching a hot stove

Describe what happens in the body when you reach out to touch something to find that it is really, really hot, like a stove.

#### Answer:

When someone touches a very hot object, like a stove, the heat is detected by **sensory receptors** in the skin.

These receptors send a signal through **sensory neurons** to the **spinal cord**, not the brain — this makes the response super fast.

In the spinal cord, the signal connects with an **interneuron**, which immediately activates a **motor neuron**.

The motor neuron sends a message to the **muscles in the arm or hand** to pull away quickly.

This whole process is called a **reflex arc** — it helps protect the body from harm by reacting quickly, without waiting for the brain to decide what to do.

The brain finds out what happened **after** the body has already moved.

## Pre-Assessment Quiz:

# Muscular, Nervous and Skeletal Physiology

1. What do muscles do to make your body move?
  - A. Stretch really far
  - B. Freeze in place
  - C. Contract**
  - D. Get bigger
  
2. What connects muscles to bones?
  - A. Veins
  - B. Tendons**
  - C. Nerves
  - D. Skin
  
3. What is the body's electrical message-carrying system called?
  - A. Nervous system**
  - B. Digestive system
  - C. Muscular system
  - D. Skeletal system
  
4. What happens when you touch something hot?
  - A. You pull your hand away before thinking**
  - B. You take a nap
  - C. You press harder
  - D. You drink water
  
5. Which kind of muscle moves your bones?
  - A. Heart muscle
  - B. Skeletal muscle**
  - C. Smooth muscle
  - D. Cheek muscle
  
6. What are bones mostly made to do?
  - A. Float in your body
  - B. Make you sleepy
  - C. Give shape and protect your body**
  - D. Clean your skin

7. How many muscles do you have?

- A. 50
- B. 200
- C. Over 600**
- D. 10

8. What part of your body is the control center?

- A. Feet
- B. Brain**
- C. Stomach
- D. Elbow

9. Where do bones grow from in kids?

- A. The middle of the bone
- B. The toes
- C. Growth plates**
- D. Muscles

10. What helps your muscles contract and relax?

- A. Sunlight and water
- B. Calcium and ATP**
- C. Bones and hair
- D. Sweat and tears