

Warm-Up

The Musculoskeletal and Integumentary Systems



Lesson Question



Lesson Goals

Identify the major structures and functions of the skeletal system.

Identify the major structures and functions of the system.

Describe how bones and muscles work together to allow .

Examine the major structures and functions of the integumentary system.



Words to Know

Fill in this table as you work through the lesson. You may also use the glossary to help you.

	the strong, dense outer layer of a bone
	the tissue in the hollow part of the bone where blood cells are produced
	the lightweight, inner layer of a bone that contains many small spaces
	a flexible connective tissue
	a type of tissue that functions mainly for support and binding tissues and organs together
	the point where two or more bones come together
	a connective tissue that holds bones together
	the striated, involuntary muscle found only in the heart

Warm-Up

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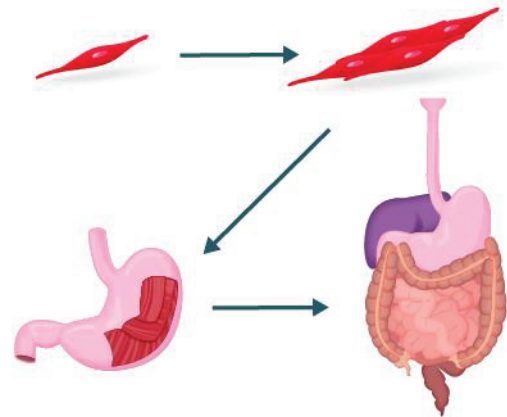
Words to Know

	a striated, voluntary muscle that is attached to bones and helps the body move
	a type of muscle that is not controlled by the organism
	marked with stripes
	a nonstriated, involuntary muscle found in internal organs
	a type of muscle that is controlled by the organism
	a type of connective tissue that links muscles to bones



Levels of Organization

- The is the basic unit of structure and function of all living things.
- A is a group of cells that work together to perform a common function.
- An is a group of tissues that work together to perform a common function.
- An organ system is a group of organs that work together to perform a common .



Instruction

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Skeletal System Structures

- The adult human skeleton is made of about bones.
- The biggest, longest, and strongest bone in the body is the .
- The smallest bone in the body, called the , is found in the ear.

Bone Layers

- **bone** is the strong, dense outer layer of a bone.
- **bone** is the lightweight, inner layer of a bone that contains many small spaces.
- **Bone** is the tissue in the hollow part of the bone.

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Skeletal System Structures

- A is the point where two or more come together.

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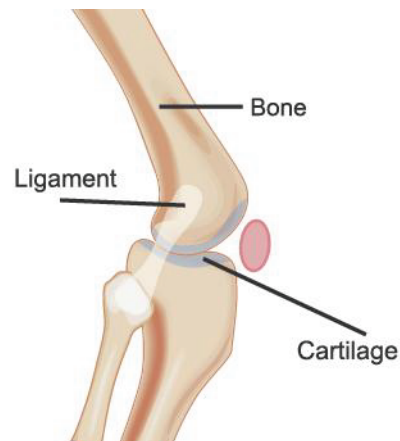
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Skeletal System Structures

- is a **tissue** that holds bones together.
 - Connective tissues and bind tissues and organs together.
- is a flexible connective tissue that protects bones as the bones rub against each other.



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Functions of the Skeletal System

- Gives the body support
- Gives the body
- the body

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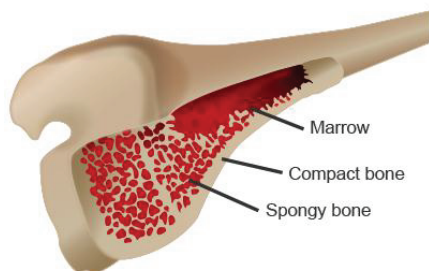
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Functions of the Skeletal System

The skeletal system produces cells and protects the organs in the body.



The bone marrow produces blood cells.

The is protected by the .

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The Structure and Function of the Muscular System

- Muscles are the main structures of the muscular system.
- There are about muscles in the human body.
 - The biggest muscle is the maximus.
 - The smallest muscle in the body, the muscle, is found in the ear.
 - The longest muscle in the body is the .



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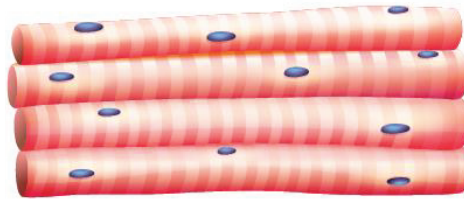
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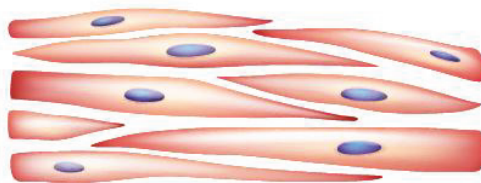
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Skeletal Muscle• **Skeletal muscle**

- – marked with stripes
- – controlled by the organism
- Attached to
- Helps the body move

**Smooth Muscle**• **Smooth muscle**

-
- – not controlled by the organism
- Found in organs of the body
- Helps food travel through the system



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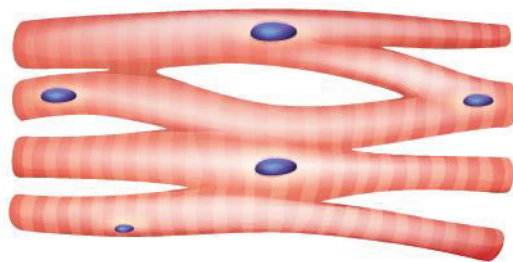
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Cardiac Muscle

- **Cardiac muscle**

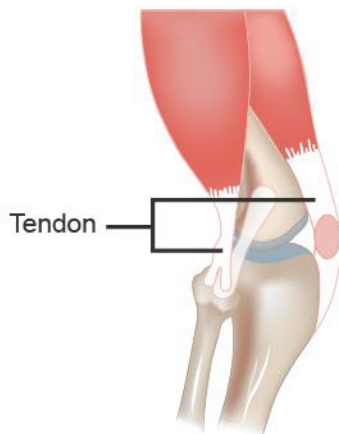
- Striated
- Involuntary
- Found in the
- Pumps to parts of the



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Tendons

- A **tendon** helps bones and muscles work together to create .
- A tendon is a type of tissue that links to bones.



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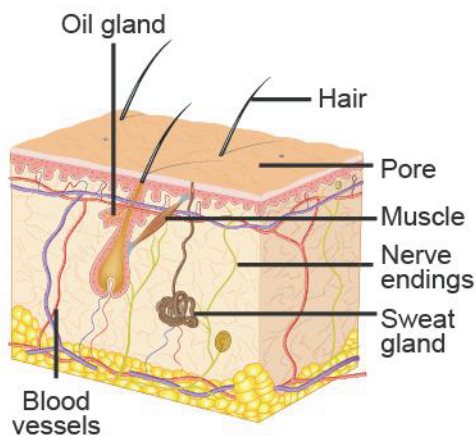
Movement of the Leg

- move when muscles (shorten and tighten) and .

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Structures of the Skin

- Outer skin protects the inner skin.
 - The outer skin is made of cells.
- glands produce sweat.
- glands produce oil.
- are holes where sweat and oil come out of the skin.
- endings allow for the touch sensation.
- Muscles contract to trap .



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Skin

- The skin, the organ in the body, has many functions.
 - the body from harmful organisms
 - Helps release materials
 - Receives from the environment
 - Helps control the of the body
 - Produces vitamin

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Hair

- Hair is made of packed dead cells.
- About fifty to a hairs on the head fall off every day.
- A hair strand remains on the head for about years.

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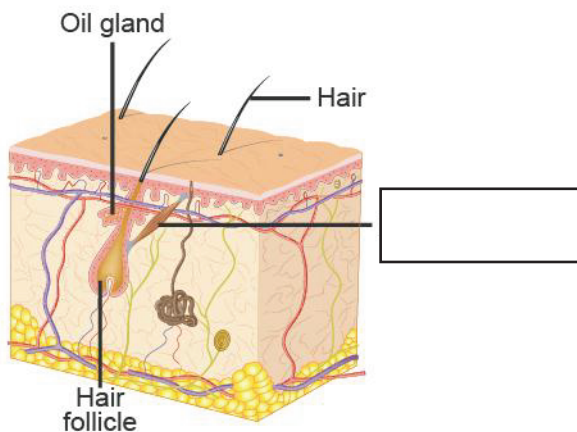
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Hair

- A hair grows from a hair in the skin.
- Hair has several functions.
 - Protects the body from the
 - Helps body temperature

**Nails**

- Nails grow at a rate of mm per month.
- Nails are replaced about every four to six months.
- Nails are made of hardened .
- Nails protect the nerve at the ends of fingers and toes.

Summary

The Musculoskeletal and Integumentary Systems



Lesson Question

What are the structures and functions of muscles, bones, and skin?



Answer

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Review: Key Concepts

- are the main structures of the skeletal system.
 - Bones are made up of compact bone, spongy bone, and bone marrow.
- Other structures that help the skeletal system include joints, cartilage, and ligaments.
- The functions of the skeletal system are to:
 - give and shape to the body.
 - protect internal organs.
 - allow movement of the body.
 - produce blood cells.

Summary

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Review: Key Concepts

- are the main structures of the muscular system.
 - The three types of muscle are skeletal, smooth, and cardiac.
- The muscular system functions to allow movement.
- The muscular and skeletal systems work together to move different parts of the body.
- The main structures of the system are skin, hair, and nails.
- The main function of the integumentary system is to protect the body.

Use this space to write any questions or thoughts about this lesson.