



Lesson Plan: Moving and Controlling the Body

Grade Level: 6

Subject: Life Science

Duration: 45–60

NGSS MS-LS1-3: Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.

Learning Objectives

By the end of this lesson, students will be able to:

- **Identify** the major components of the musculoskeletal system and their functions.
- **Describe** how the nervous system controls body movements through signal transmission.
- **Explain** the coordination between the musculoskeletal and nervous systems in producing



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- **Homeostasis:** The tendency of a body system to maintain a stable, internal balance while faced with changes.
- **Endocrine glands:** Glands found throughout the human body that act to control body functions by releasing hormones into the bloodstream.



Materials Needed: (all links are included in this PDF)



- Printed copies of Worksheet 0 (<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-6-moving-and-controlling-the-body-2027-0.pdf>)
- Printed copies of Worksheet 1 (<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-6-moving-and-controlling-the-body-2027-1.pdf>)
- Printed copies of Worksheet 2 (<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-6-moving-and-controlling-the-body-2027-2.pdf>)
- Vocabulary matching worksheet Set 1 (<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-6-moving-and-controlling-the-body-2027-1.pdf>)
- Vocabulary matching worksheet Set 2 (<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-6-moving-and-controlling-the-body-2027-2.pdf>)
- Anatomical diagrams of the skeletal and nervous systems
- Model skeleton or labeled diagram of bones



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- Describe the nervous system: the central nervous system (brain and spinal cord) processes information, while the peripheral nervous system transmits signals to and from the body.
- Demonstrate with a model skeleton how bones connect at joints and how muscles attach to bones to produce movement.
- Introduce key vocabulary terms using the vocabulary worksheets, defining terms such as motor neurons, interneurons, and neurotransmitters.
(<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-6-moving-and-controlling-the-body-2027-2.pdf>)

Step 3: Guided Practice (15 minutes)



- Distribute Vocabulary Set 1 and work through the matching activity as a class, reinforcing definitions of musculoskeletal and nervous system terms.
(<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-6-moving-and-controlling-the-body-2027-1.pdf>)
- Use Worksheet 0 to review the appendicular and axial skeleton, discussing which bones belong to each category. (<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-6-moving-and-controlling-the-body-2027-0.pdf>)
- Have students identify on a diagram the path of a nerve impulse from the brain through motor neurons to a muscle.

Step 4: Independent Practice (15 minutes)

- Assign students to complete Worksheet 1 independently, answering questions about organ systems, bone structure, and homeostasis.
(<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-6-moving-and-controlling-the-body-2027-1.pdf>)



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💡 Differentiation Strategies

For advanced learners:

- Challenge advanced learners to research and present on a specific bone injury or neurological condition and how it affects movement.
- Have students create a detailed labeled diagram showing the pathway of a reflex arc, including sensory neurons, interneurons, and motor neurons.

For learners needing support:



- Provide students needing support with a pre-labeled diagram of the skeletal system showing the axial and appendicular divisions.
- Offer one-on-one assistance during independent practice, using simplified vocabulary definitions and visual aids to reinforce concepts.

Extension Activities

- Have students build a model of a joint using craft materials to demonstrate how bones, cartilage, and ligaments work together.
- Assign a research project on how different animals' musculoskeletal systems are adapted for their environments, such as birds for flight or fish for swimming.
- Create a class demonstration where students act out the roles of neurons, neurotransmitters, and muscles to simulate how a nerve impulse travels to produce movement.



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(<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-6-moving-and-controlling-the-body-2027-1.pdf>)

- Vocabulary Set 2 - Nervous System Terms
(<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-6-moving-and-controlling-the-body-2027-2.pdf>)
- Vocabulary Set 3 - Additional Body Systems Terms
(<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-6-moving-and-controlling-the-body-2027-3.pdf>)

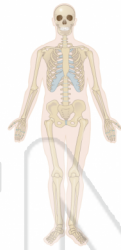


Name _____ Class _____ Date _____

1

Each of the following would be considered part of the **appendicular skeleton** EXCEPT _____.

- A shoulder
- B hip
- C rib cage
- D knee



2

In a neuron, the **axon** is an extension of the nerve cell body that **receives** impulses.

True or False?

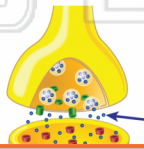
- True
- False



3

Chemicals released by axons are called _____.

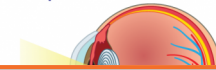
- A hormones
- B neurotransmitters
- C enzymes



4

In order for us to see, **light** must be **received** within the _____ of the **eye** where it gets transmitted to the brain as nerve impulses.

- A retina



5



PREVIEW

7

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- C thyroid gland
- D ovaries and testes

- B brain
- C adrenal
- D pituitary

9

Hormone release is controlled mainly by **negative feedback** mechanisms that act to **turn off** hormone production and secretion.

True or False?

- True
- False



10

Growth hormone released by the **pituitary gland** acts to _____.

- A increase growth and length of hair
- B regulate the activity of the thyroid gland
- C increase the number of bones during development
- D increase the growth of bone



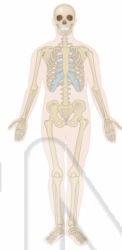


Name _____ Class _____ Date _____

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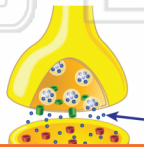


B

3

Chemicals released by axons are called _____.

- A hormones
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B

4

In order for us to see, **light must be** received within the _____ of the **eye** where it gets transmitted to the brain as nerve impulses.

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A

5



B

PREVIEW

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D

- C thyroid gland
- D ovaries and testes



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D



Name _____ Class _____ Date _____

1

Growth hormone released by the **pituitary gland** acts to _____.

- A** increase growth and length of hair
- B** regulate the activity of the thyroid gland
- C** increase the number of bones during development
- D** increase the growth of bone

**2**

Organ systems in the human body include each of the following **EXCEPT** _____.

- A** digestive system
- B** brain
- C** cardiovascular system
- D** respiratory system

**3**

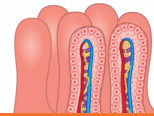
The **part of bone** that gives it **great strength** is _____.

- A** compact bone
- B** spongy bone

**4**

The **four types of organ tissues** include nerve, epithelium, connective and _____ tissue.

- A** bone
- B** liver

**5**

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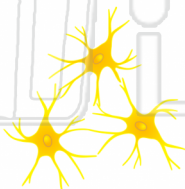
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9

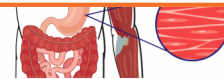
The _____ is the **message** that is **sent** through the nervous system.

- A** nerve impulse
- B** dendrite
- C** axon
- D** neuron

**10**

What is the **path** of a **nerve impulse** through the different nerves?

- A** sensory neuron, motor neuron, and interneuron
- B** motor neuron, interneuron, and sensory neuron
- C** interneuron, sensory neuron, and motor neuron
- D** sensory neuron, interneuron, and motor neuron





Name _____ Class _____ Date _____

1

Growth hormone released by the **pituitary gland** acts to _____.

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D

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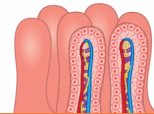


B

4

The **four types of organ tissues** include nerve, epithelium, connective and _____ tissue.

- A bone
- B liver



D

5



A

PREVIEW

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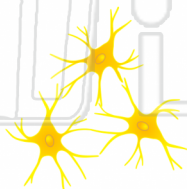
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D

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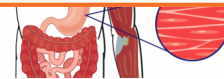


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- C interneuron, sensory neuron, and motor neuron
- D sensory neuron, interneuron, and motor neuron



D



Name _____ Class _____ Date _____

1

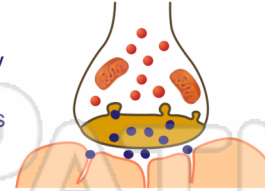
What is the **path** of a **nerve impulse** through the different nerves?

- A sensory neuron, motor neuron, and interneuron
- B motor neuron, interneuron, and sensory neuron
- C interneuron, sensory neuron, and motor neuron
- D sensory neuron, interneuron, and motor neuron

2

What **gap** must the **nerve impulse** cross in order to get to the next neuron?

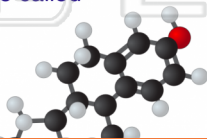
- A dendrite
- B cell body
- C synapse
- D axon tips



3

The **chemicals** created by the **endocrine system** are called _____.

- A neurotransmitters
- B proteins
- C hormones



4

One of the **most commonly broken bones** in the human body is the _____.

- A radius at your wrist
- B humerus in your arm



5



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- B antagonists
- C skeletal blockers
- D smooth muscles



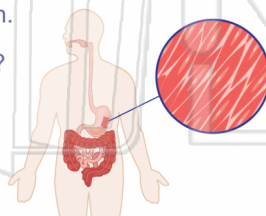
- C contract without fatigue or tiring out.
- D serve the body in many, many different locations.

9

Smooth muscle controls the movement of the skeleton.

True or False?

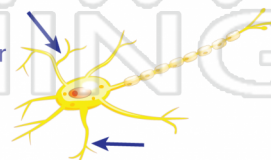
- True
- False



10

The **structure** that is pointed out in this image is a(n) _____.

- A neuron
- B neural fiber
- C dendrite
- D axon





Name _____ Class _____ Date _____

1

What is the **path** of a **nerve impulse** through the different nerves?

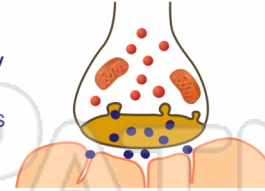
- A sensory neuron, motor neuron, and interneuron
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D

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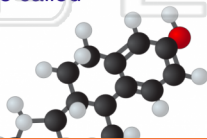


C

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- B proteins
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C

4

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- B humerus in your arm



A

5



A

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C

- B antagonists
- C skeletal blockers
- D smooth muscles



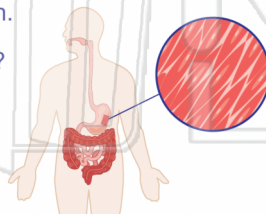
- C contract without fatigue or tiring out.
- D serve the body in many, many different locations.

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Smooth muscle controls the movement of the skeleton.

True or False?

- True
- False

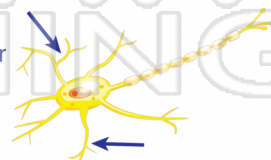


B

10

The **structure** that is pointed out in this image is a(n) _____.

- A neuron
- B neural fiber
- C dendrite
- D axon



C



Name _____ Class _____ Date _____

Match each of the following terms to its definition:

Central nervous system	Appendicular skeleton	Cartilage	Hormones
Homeostasis	Cardiac muscle	Axial skeleton	Endocrine glands

1. bones found in the flexible regions of the body, including shoulders, hips and limbs

2. skeleton that consists of the skull, backbone (vertebrae) and rib cage

3. special

4. but so

5. neuro

6. that a
bloodstream

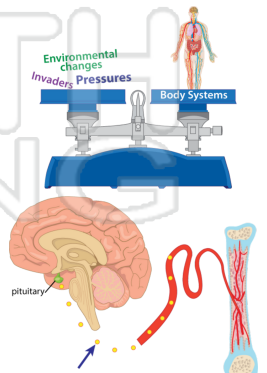
7. stable, internal balance while faced with changes

8. control a wide variety of functions within the human body



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Name _____ Class _____ Date _____

Match each of the following terms to its definition:

Central nervous system	Appendicular skeleton	Cartilage	Hormones
Homeostasis	Cardiac muscle	Axial skeleton	Endocrine glands

1. appendicular skeleton - a part of the skeleton composed of 126 bones found in the flexible regions of the body, including shoulders, hips and limbs



2. axial skeleton - the central, anchoring part of the bony skeleton that consists of the skull, backbone (vertebrae) and rib cage

3. cartilage - a flexible, fibrous tissue that connects bones and provides support and cushioning

4. cartilage - a flexible, fibrous tissue that connects bones and provides support and cushioning

5. central nervous system - the part of the nervous system consisting of the brain and spinal cord

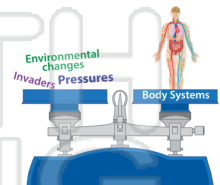
6. endocrine system - a system of glands that releases hormones into the bloodstream to regulate the body's functions



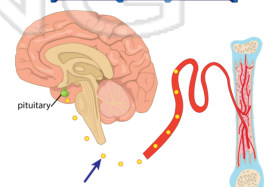
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7. homeostasis - the tendency of a body system to maintain a stable, internal balance while faced with changes



8. hormones - chemicals released by endocrine glands that control a wide variety of functions within the human body



Name _____ Class _____ Date _____

Match each of the following terms to its definition:

Organ

Neurotransmitter

Negative feedback

Interneurons

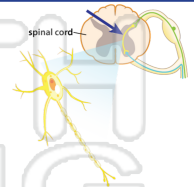
Retina

Motor neurons

Peripheral nervous system

Pituitary gland

1. the brain and spinal cord - nerve cells that carry impulses within



2. - nerve cells that carry impulses away from the brain and spinal cord to the body



3.
a part:

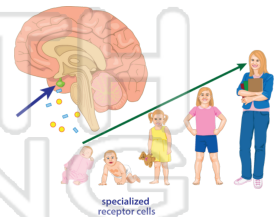


4. allows

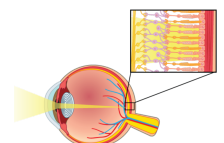
5. perform

6.
nervou

7. **Pituitary** - a small gland at the base of the brain that communicates with the hypothalamus to control many body functions, including bone and tissue growth



8. - a light-sensitive layer of receptor cells that line the back portion of the eye





Name _____ Class _____ Date _____

Match each of the following terms to its definition:

Organ

Neurotransmitter

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Interneurons

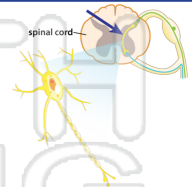
Retina

Motor neurons

Peripheral nervous system

Pituitary gland

1. interneurons - nerve cells that carry impulses within the brain and spinal cord



2. motor neurons - nerve cells that carry impulses away from the brain and spinal cord to the body



3. negative feedback



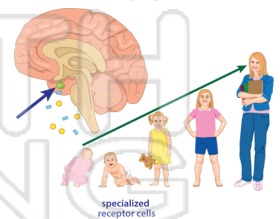
4. nerve impulses

5. organ function

6. peripheral nervous system



7. pituitary gland - a small gland at the base of the brain that communicates with the hypothalamus to control many body functions, including bone and tissue growth



8. retina - a light-sensitive layer of receptor cells that line the back portion of the eye

