

**Pequea Valley School District**  
**Wellness Education**

**Unit: Introduction/Terms/Cell**

**Course: Anatomy and Physiology**

**Grade: 10-12**

**Planning the Focus Based on the Desired Result**  
**What do you want all students to know, understand and do by the end of the unit?**

**Unit Essential Question(s)**

- Learners will understand basic medical terminology as it relates to anatomy and physiology
- What are the parts of the cell?
- What are the meaning of word roots and why are they important?

**Keystone Eligible Content/PA Core Standard**

3.3.12.A

- Explain the relationship between structure and function at all levels of organization.
- Explain and analyze the relationship between structure and function at the molecular, cellular and organ system level

**Pacing: Approximate number of class sessions per unit**

- 5

**Tier 3 Vocabulary (Content specific vocabulary)**

Medial. Lateral. posterior, anterior, distal, superficial, sagittal, transverse, frontal

**Know** - What do students need to **know** in order to be able to do and understand? *List concepts, such as facts, formulas, key vocabulary and knowledge “nuggets”.*

- Word roots
- Parts of the cell
- Directional terms

**Understand** - What do students need to **understand**? What is the **big idea**? *List broad concepts or “big ideas” in a statement of enduring understanding.*

- What are the parts of a cell
- How can we define large words when we know definitions of word roots
- Definitions of relevant medical terminology

**Learning Outcome** - What do students need to be able to **accomplish** by the unit's end? *List skills and competencies.*

- Use the correct anatomical terms when referring to the body
- Define terms by identifying word roots
- Understand the parts of the cell

**Assessments:**

- Terms story
- Quiz
- Classroom discussions

**Software/Resources:**

**Pequea Valley School District**  
**Wellness Education**

**Unit: Body Systems/Tissues**

**Course: Anatomy and Physiology**

**Grade: 10-12**

**Planning the Focus Based on the Desired Result**  
**What do you want all students to know, understand and do by the end of the unit?**

**Unit Essential Question(s)**

- How is the body organized?
- What are the functions of each body system?
- What organs are in each body system?
- How are tissues classified?

**Keystone Eligible Content/PA Core Standard**

3.3.12.A

Explain the relationship between structure and function at all levels of organization.

- Explain and analyze the relationship between structure and function at the molecular, cellular and organ system level

3.3.12.B

Analyze the chemical and structural basis of all living organisms.

- Evaluate relationships between structure and functions of different anatomical parts given their structure

**Pacing: Approximate number of class sessions per unit**

- 5

**Tier 3 Vocabulary (Content specific vocabulary)**

Stratified, simple, pseudostratified, connective, epithelial, muscular, connective diffusion, protection, excretion, integration

**Know** - What do students need to **know** in order to be able to do and understand? *List concepts, such as facts, formulas, key vocabulary and knowledge “nuggets”.*

- Organs of the body
- Classification of tissue types
- Functions of tissues
- Functions of organ systems

**Understand** - What do students need to **understand**? What is the **big idea**? *List broad concepts or “big ideas” in a statement of enduring understanding.*

- Everything builds on other things - The body is organized
- Each organ has a specific function and each organ system has a specific function to create an organism
- Tissues are classified by type and function
- Multiple tissue types working for the same function create an organ

**Learning Outcome** - What do students need to be able to **accomplish** by the unit’s end? *List skills and competencies.*

- Describe the levels of organization in the body
- identify different tissue types by cell type/function
- list functions and organs of different body systems

**Assessments:**

- Coloring
- Test
- Body systems quiz

**Software/Resources:**

**Pequea Valley School District  
Wellness Education**

**Unit: Skeletal system**

**Course: Anatomy and Physiology**

**Grade: 10-12**

**Planning the Focus Based on the Desired Result**  
**What do you want all students to know, understand and do by the end of the unit?**

**Unit Essential Question(s)**

- How do bones grow?
- How do bones heal?
- What are the names of the 206 bones in the human body?
- What are some common bone diseases/disorders?

**Keystone Eligible Content/PA Core Standard**

10.1.12.A

Evaluate factors that impact growth and development during adulthood and late development.

- Acute and chronic illness
- Health status

3.3.12.B

Analyze the chemical and structural basis of all living organisms.

- Evaluate relationships between structure and functions of different anatomical parts given their structure

**Pacing: Approximate number of class sessions per unit**

- 20

**Tier 3 Vocabulary (Content specific vocabulary)**

Fracture, osteoblasts, osteoclasts, fibroblasts, ossification, dipiphysis, epiphysis, epiphyseal plate, articular cartilage, hematoma, callus

**Know** - What do students need to **know** in order to be able to do and understand? *List concepts, such as facts, formulas, key vocabulary and knowledge “nuggets”.*

- Names of all the bones
- The steps to bone growth
- The steps of fracture healing
- Types of fractures
- Wolfe’s law

**Understand** - What do students need to **understand**? What is the **big idea**? *List broad concepts or “big ideas” in a statement of enduring understanding.*

- Functions of bone
- Characteristics of bone tissue
- How do bones grow from conception to death
- How do bones heal when damaged
- How does Wolfe’s law apply to bone growth and healing

**Learning Outcome** - What do students need to be able to **accomplish** by the unit’s end? *List skills and competencies.*

- Naming all bones
- Describe how bones grow
- Describe how bones heal
- Describe how Wolfe’s law impacts bone growth/healing

**Assessments:**

- Bone Test
- Coloring
- Bone growth/healing flip book
- Bone project
- Unit exam

**Software/Resources:**

- Model magic clay
- Classroom reference books
- Articulated and disarticulated skeletons

**Pequea Valley School District**  
**Wellness Education**

**Unit: Muscular System**

**Course: Anatomy and Physiology**

**Grade: 10-12**

**Planning the Focus Based on the Desired Result**  
**What do you want all students to know, understand and do by the end of the unit?**

**Unit Essential Question(s)**

- What is the structure and function of skeletal muscle tissue
- What is the sliding filament theory of muscle contraction
- Name muscles
- What are the characteristics and functions of smooth and cardiac muscle

**Keystone Eligible Content/PA Core Standard**

**10.1.12.A**

Evaluate factors that impact growth and development during adulthood and late development.

- Acute and chronic illness
- Health status

**3.3.12.B**

Analyze the chemical and structural basis of all living organisms.

- Evaluate relationships between structure and functions of different anatomical parts given their structure

**Pacing: Approximate number of class sessions per unit**

- 30

**Tier 3 Vocabulary (Content specific vocabulary)**

tendon, ligament, belly, fascia, epimysium, perimysium, endomysium, sarcomere, myofibril, actin, myosin, ATP, ADP, action potential, neurotransmitter, ACh, resting potential

**Know** - What do students need to **know** in order to be able to do and understand? *List concepts, such as facts, formulas, key vocabulary and knowledge “nuggets”.*

- Names of muscles
- the sliding filament theory
- Name and locations of various skeletal muscles

- Functions of muscles
- Differences and similarities between skeletal, smooth and cardiac muscle tissue

**Understand** - What do students need to **understand**? What is the **big idea**? *List broad concepts or “big ideas” in a statement of enduring understanding.*

- The sliding filament theory
- The structure of muscle tissue
- How muscles are named
- Motions muscles create motion
- Locations of major muscles in the body

**Learning Outcome** - What do students need to be able to **accomplish** by the unit’s end? *List skills and competencies.*

- Describe the steps to the sliding filament theory and how it applies to muscle contraction
- Demonstrate the motions muscles make
- Label muscle locations on a diagram
- Describe the differences and similarities between skeletal, smooth, and cardiac muscle

**Assessments:**

- Sliding filament theory project
- SFT Quiz
- Coloring
- Muscle diagrams
- Unit Test

**Software/Resources:**



**Pequea Valley School District  
Wellness Education**

**Unit: Cardiovascular system**

**Course: Anatomy and Physiology**

**Grade: 10-12**

**Planning the Focus Based on the Desired Result**  
**What do you want all students to know, understand and do by the end of the unit?**

**Unit Essential Question(s)**

- How does the heart support the body and maintain homeostasis?
- What are the components of the cardiovascular system and how do they work?

**10.1.12.A**

Evaluate factors that impact growth and development during adulthood and late development.

- Acute and chronic illness
- Health status

**3.3.12.B**

Analyze the chemical and structural basis of all living organisms.

- Evaluate relationships between structure and functions of different anatomical parts given their structure

**Pacing: Approximate number of class sessions per unit**

- 10

**Tier 3 Vocabulary (Content specific vocabulary)**

Atrium, Ventricles, pericardium, myogenic, sinus rhythm, fibrillation, erythrocytes, thrombocytes, leukocytes

**Know** - What do students need to **know** in order to be able to do and understand? *List concepts, such as facts, formulas, key vocabulary and knowledge “nuggets”.*

- The path blood takes through the heart
- The anatomy of the heart
- Different rhythms of the heart
- Components of blood

**Understand** - What do students need to **understand**? What is the **big idea**? *List broad concepts or “big ideas” in a statement of enduring understanding.*

- How blood flows through the heart
- The electro myogenic path of contraction
- How blood supplies nutrients to the body

**Learning Outcome** - What do students need to be able to **accomplish** by the unit’s end? *List skills and competencies.*

- Describe the path that blood takes through the heart to the body
- Label the parts of the cardiovascular system
- Understand the electrical system of the heart
- Identify signs and symptoms of heart diseases
- Identify the components of blood and their functions in the body

**Assessments:**

- Pre-test before planetarium show
- Post-test after planetarium
- Unit test
- Coloring

**Software/Resources:**

- Planetarium show
- Heart model

**Pequea Valley School District  
Wellness Education**

**Unit: Nervous System**

**Course: Anatomy and Physiology**

**Grade: 10-12**

**Planning the Focus Based on the Desired Result**  
**What do you want all students to know, understand and do by the end of the unit?**

**Unit Essential Question(s)**

- What is the anatomy of the nervous system?
- What are the dermatomes and myotomes?

**Keystone Eligible Content/PA Core Standard**

**10.1.12.A**

Evaluate factors that impact growth and development during adulthood and late development.

- Acute and chronic illness
- Health status

**3.3.12.B**

Analyze the chemical and structural basis of all living organisms.

- Evaluate relationships between structure and functions of different anatomical parts given their structure

**Pacing: Approximate number of class sessions per unit**

- 10

**Tier 3 Vocabulary (Content specific vocabulary)**

Central nervous system, peripheral nervous system, cerebral spinal fluid, meninges, cauda equina, somatic, autonomic, reflexes, plexus

**Know** - What do students need to **know** in order to be able to do and understand? *List concepts, such as facts, formulas, key vocabulary and knowledge “nuggets”.*

- The parts of the brain
- The function of the spinal cord
- Reflexes
- Common disorders of the nervous system

**Understand** - What do students need to **understand**? What is the **big idea**? *List broad concepts or “big ideas” in a statement of enduring understanding.*

- The difference between the peripheral nervous system and central nervous system
- The difference between somatic and autonomic
- The functions of the lobes of the brain
- How nerves provide sensory and motor function

**Learning Outcome** - What do students need to be able to **accomplish** by the unit’s end? *List skills and competencies.*

- Labeling parts of the nervous system
- Discussing the functions of the lobes of the brain
- Identifying dermatomes and myotomes
- Identifying signs and symptoms of common nervous system disorders

**Assessments:**

- Coloring
- Quiz
- Unit test

**Software/Resources:**