



G-E-T High School Curriculum
Align, Explore, Empower
Scope and Sequence
Anatomy & Physiology

Unit 1 - Introduction to anatomical terminology

Length of Unit - 1.5 weeks

In this unit, students will ...

effectively use basic anatomical & directional terminology.
learn systems of the body.
be able to explain its hierarchy.

Standards

LS1-2: Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.
LS1-3: Plan and conduct and investigation to provide evidence that feedback mechanisms maintain homeostasis.

Unit 2 - Integumentary System and its main components.

Length of Unit - 2 weeks

In this unit, students will ...

understand the main layers within the skin and associated parts such as receptors, hair, nails & glands.
be able to explain the processes that determine the pigmentation of skin.
understand pathologies of the skin and how behavior plays a role.
explain places other than the skin where the integumentary system interacts with other organ systems

Standards

LS1-2: Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.
LS1-3: Plan and conduct and investigation to provide evidence that feedback mechanisms maintain homeostasis.
LS1-4: Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.

Unit 3 - Skeletal System	Length of Unit - 3 weeks
<p>In this unit, students will ...</p> <p>Explain how the skeletal system helps maintain homeostasis. Name the bones of the human body. Understand how bone growth occurs. Explain the types of joints found within the body and how they function. Understand the pathologies of the system and how behavior plays a role.</p>	

Standards
<p>LS1-2: Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.</p> <p>LS1-3: Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.</p> <p>LS1-4: Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.</p>

Unit 4 - Muscular System	Length of Unit - 2.5 weeks
<p>In this unit, students will ...</p> <p>Be able to explain how muscles maintain homeostasis. Name the major muscles of the human & rat bodies. Explain the sliding filament model of muscular contraction. Understand the differences between the skeletal, cardiac and smooth muscle. Understand the pathologies of the system and how behavior plays a role.</p>	

Standards
<p>LS1-2: Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.</p> <p>LS1-3: Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.</p> <p>LS1-4: Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.</p>

Unit 5 - Nervous System	Length of Unit - 2.5 weeks
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In this unit, students will ...

Understand how the nervous system plays a role in homeostasis.

Name the three kinds of neurons and their parts.

Explain how a neuron works.

Know the functions of the parts of the brain and how they interact with other systems of the body.

Understand the pathologies of the system and how behavior plays a role.

Standards

LS1-2: Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.

LS1-3: Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.

LS1-4: Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.

Unit 6 - Cardiovascular System

Length of Unit - 2.5 weeks

In this unit, students will ...

Understand how all of the parts of the system play a role in maintaining homeostasis.

Know the major parts of the heart.

Understand the structure and function of the three types of blood vessels.

Explain the parts of blood and their functions.

Perform blood pressure and electrocardiogram tests to understand pathologies and how behavior impacts health.

Standards

LS1-2: Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.

LS1-3: Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.

LS1-4: Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.

Unit 7 - Respiratory System

Length of Unit -1 week

In this unit, students will ...

Name all major organs of the respiratory system.

Understand respiration at all levels.

Explain the interaction of respiration with circulation and how they maintain homeostasis.

Describe pathologies of respiratory organs and how to prevent them.

Standards

- LS1-2: Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.**
- LS1-3: Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.**
- LS1-4: Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.**
- LS1-7: Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed, resulting in a net transfer of energy.**

Unit 8 - Endocrine System

Length of Unit - 1 week

In this unit, students will ...

- Understand how this system plays a major role in maintaining homeostasis of the entire organism.
- Describe in great detail the structure and function of an assigned gland and how it contributes to the homeostasis of the entire system.
- Know the general structure & function of the endocrine system.

Standards

- LS1-2: Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.**
- LS1-3: Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.**
- LS1-4: Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.**

Unit 9 - Digestive & Urinary Systems

Length of Unit -2 weeks

In this unit, students will ...

- Explain the macronutrients needed to maintain homeostasis and their roles in human growth & development.
- Understand the diffusion & flow of materials through human bodies.
- Know the major parts of the digestive and urinary systems.
- Explain the interaction of the two systems and how they maintain homeostasis.
- Describe pathologies of the two systems.

Standards

- LS1-2: Develop and use a model to illustrate the hierarchical organization of interacting systems that provide**

specific functions within multicellular organisms.

LS1-3: Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.

LS1-4: Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.

LS1-6: Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.

LS1-7: Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed, resulting in a net transfer of energy.