Module 1 Protection and Support

Students start with a comparison of the fields of anatomy and physiology and how they study the human body. Next, they are introduced to important anatomy terms that will be used throughout the course, followed by a comparison of tissue types. From there, students explore the integumentary system, focusing on the skin, and then study structure and function of the skeletal system.

- 01.00 Module One Protection and Support Pretest
- 01.01 Introduction to Anatomy and Physiology
- 01.02 Understanding Anatomy and Physiology
- 01.03 Tissues
- 01.04 Skin—The Largest Organ
- 01.05 The Human Skeleton
- 01.05 Honors—Bone Markings
- 01.06 Bone Tissue
- 01.07 Module One Discussion-Based Assessment and Exam
- 01.08 Module One Protection and Support Collaboration

Module 2 Movement

Students begin with identification of some of the major axial and appendicular muscles. Next, they delve into the structure of a muscle by identifying the microscopic structures of skeletal muscle and comparing the histology of skeletal, smooth and cardiac muscle. Then they study the steps of the sliding filament model of muscle contraction. Honors students will also study cellular energy (cellular respiration and fermentation) and the physiology of healthy muscles compared to diseased muscles.

This is a short module with three regular lessons, two honors lesson, and module exams.

- 02.00 Module Two Movement Pretest
- 02.01 Axial and Appendicular Muscles
- 02.02 Skeletal Muscle
- 02.02 Honors—Cellular Energy
- 02.03 Muscle Contraction
- 02.03 Honors—Physiology of Muscle
- 02.04 Module Two Discussion-Based Assessment and Exam
- 02.05 Module Two Movement Collaboration

Module 3 Communication and Coordination:

The module begins with a tour of the central and peripheral nervous systems, followed by a more in depth look at the structures and functions of the brain and spinal cord. It continues with the neural
pathways responsible for reflexes and out fight or flight responses. Then it describes how impulses move through nerves, muscles, and sense organs. Finally, students learn how the endocrine system and nervous system work together to regulate and coordinate the actions of the brain and body.

- 03.00 Module Three Communication and Coordination Pretest
- 03.01 Nervous System
- 03.02 The Spinal Cord
- 03.03 The Brain
- 03.04 Sympathetic and Parasympathetic Nervous Systems
- 03.05 Nerve Conduction
- 03.06 Senses
- 03.07 Endocrine System
- 03.07 Honors—Hormones
- 03.08 Module Three Discussion-Based Assessment and Exam
- 03.09 Module Three Communication and Coordination Collaboration
- 03.10 Segment One Exam

Module 4 Transport:
The module begins with an overview of the major components of the cardiovascular system, followed by a more in depth look at the cells that make up blood. Students finish up the module learning about blood typing, transfusions and the formation of scabs.

- 04.00 Module Four Transport Pretest
- 04.01 Cardiovascular System
- 04.01 Honors—Blood Vessels and Electrocardiogram
- 04.02 Components of Blood
- 04.03 Hemostasis, Typing, and Transfusion
- 04.04 Module Four Discussion-Based Assessment and Exam
- 04.05 Module Four Transport Collaboration

Module 5 Respiration and Digestion:
In module five, students will learn about the organs and tissues of the respiratory system and the digestive system. They will also review the structure and function of each of the four main biological molecules. Then, students will learn how enzymes catalyze reactions and review the factors that affect enzyme activity.

- 05.00 Module Five Respiration and Digestion Pretest
- 05.01 The Respiratory System
- 05.01 Honors—The Tissues of the Respiratory System
- 05.02 The Digestive System
- 05.02 Honors—The Tissues of the Digestive System
Module 6 Regulation and Reproduction:

In module six, students will study systems involved in regulation and reproduction. Students will begin by learning how the kidneys and other components of the excretory system form and dispose of urine. You will also examine how the immune system works to protect the body from infection and disease and explore how the lymph system maintains the body's fluid balance and helps defend against infectious agents. Wrapping up this anatomy and physiology course, students will study the components of the male and female reproductive system and details of fetal development.

- 06.00 Module Six Regulation and Reproduction Pretest
- 06.01 Excretory System
- 06.01 Honors—Excretory Structures
- 06.02 Immune System
- 06.03 Lymph System
- 06.04 Reproductive System
- 06.04 Honors—Fertilization to Birth
- 06.05 Fetal Circulation
- 06.06 Module Six Discussion-Based Assessment and Exam
- 06.07 Module Six Regulation and Reproduction Collaboration
- 06.08 Segment Two Exam

Course Assessment and Participation Requirements:

To achieve success, students are expected to submit work in each course weekly. Students can learn at their own pace; however, “any pace” still means that students must make progress in the course every week. To measure learning, students will complete self-checks, practice lessons, multiple choice questions, projects, discussion-based assessments, and discussions. Students are expected to maintain regular contact with teachers; the minimum requirement is monthly. When teachers, students, and parents work together, students are successful.
Collaboration throughout the course:

One collaboration activity will be required **per segment**. This is a time to work with your fellow classmates and have deeper conversations concerning class issues and topics. View the Collaboration Presentation to get tips, tools, and guidelines for working together. Select the button below to learn more about the types of Collaboration.

Synchronous Collaboration:
Students will contact their instructor to learn about collaboration opportunities that will allow them to interact with their classmates online, in real-time, using Web 2.0 tools. If they choose to participate in the synchronous collaboration opportunity, the instructor will explain what students will need to submit for grading.

Asynchronous Collaboration:
In this segment, students also can participate in an asynchronous collaboration with one of their classmates. To participate in this collaboration, they use the discussion board and/or email feature of the course to send a message to their classmates to find a peer review partner. Once they have found someone to work with, they will send their writing, and their classmates will review it using the **Guide for Peer Review** provided in the lesson.

LABS:

02.01 Axial and Appendicular Muscles

MODULE 2: Movement > Assessments

Complete the hands-on lab activity that examines muscle locations, origins, insertions, and actions. Follow each step of the instructions detailed on the Assessment page of your lesson. This is a two-part lab, so be sure to complete both parts of the assignment before submitting the lab report to your instructor.

02.02 Skeletal Muscle

MODULE 2: Movement > Assessments

Examine the slide images of the three muscle tissue types (skeletal, smooth, or cardiac). The slide titles are listed as: Human Cardiac, Intestines–Colon, Skeletal Muscle–Longitudinal and Cross Sections. As you view the slides, complete the required table (below). The table will be submitted to your instructor.

02.03 Muscle Contraction

MODULE 2: Movement > Assessments

Create a model that shows the stages of the sliding filament theory of contraction. Follow each step of the instructions detailed on the Assessment page of your lesson before submitting the model to your instructor.
02.03 Honors Physiology of Muscle MODULE 2: Movement > Assessments

Complete the hands-on lab activity that examines how long muscle fatigue takes to set in and how quickly your muscles can recover from the fatigue. Follow each step of the instructions detailed on the Assessment page of your lesson. This lab includes several short activities, so be sure to complete all parts of the assignment before submitting the lab report to your instructor.

03.04 Sympathetic and Parasympathetic Nervous Systems MODULE 3: Communication and Coordination > Assessments

Complete a creative project that uses pictures to describe the nerve pathway of a sympathetic and parasympathetic response. Follow each step of the instructions detailed on the Assessment page of your lesson before submitting to your instructor.

03.06 Senses MODULE 3: Communication and Coordination > Assessments

Complete the lab to explore your sense of touch, test your vision, evaluate your sense of taste, and examine the impact hearing has on your balance. Follow each step of the instructions detailed on the Assessment page of your lesson before submitting your lab worksheet.

Part One:

You own a restaurant? At such a young age, that is quite remarkable! As a restaurant owner, it is your responsibility to provide quality food to your customers. You and your top chef (classmate) need to create a menu that represents four key nutrients groups: monosaccharides and disaccharides, polysaccharides, fatty acids, and proteins. The menu should have four sections, one for each of the nutrient groups. Each partner should contribute two sections. The sections of your menu should include the following information:

- Explanation of the benefits of choosing foods from that section of the menu
- Include three things the nutrient does for your body
- Provide at least three food selections that would provide your body with that nutrient
- Include a description of the food that would entice customers to pick it from the menu

For this activity, you can use the discussion board to find a partner and exchange your menu selections. If you prefer, you can also utilize emails or instant messages as a way to communicate. Make sure to save all correspondence between you and your partner. You will need to submit a copy of your communications for collaboration credit.

Your menu should be in a format that will impress your customers (instructors). Please be creative and organize the menu with each section clearly labeled. When you and your partner have completed the
menu, submit it in the assessments area under 05.06 Module Five Digestion and Respiration Collaboration Part One.

This example includes one menu section. Your menu should include four food sections and each section should include three food selections.

View Student Sample

Please review the rubric prior to submitting your assessment.

View the rubric for this lesson

Part Two:
In part two of this activity, you will provide feedback on your collaboration experience for this activity. Copy and paste the reflection guide below into a word document and save your responses. Go to the assessments area to submit your reflection guide to 05.06 Module Five Digestion and Respiration Collaboration Part Two.

Collaboration Reflection Guide
Self-Reflection: Respond to the following in two to three sentences each.

1. What did you enjoy most about working with others on this lesson/task? Explain.
2. How did your team deal with conflict? Explain.
3. Do you feel others were happy with your participation in the lesson or task? Explain.
4. What will you do differently, if anything, in your next online collaboration opportunity? Explain.
5. Additional comments:

Evidence: Please provide evidence of your collaboration with another student in the space below or in a separate document. Examples of evidence include, but are not limited to, the following:

- Link to the team wiki, blog, or other web 2.0 tool used for your presentation
- Copy and paste below, attach, or provide a screen shot of the discussion thread from the blog, wiki, discussion area, instant message, email, texts, etc.
- Any other specific evidence as listed with the collaboration lesson or task you completed.
- 05.02 The Digestive System MODULE 5: Respiration and Digestion > Assessments

In this assessment, you will journal the hourly life of a fatty acid or a sugar molecule as it makes its final voyage through the digestive tract. You only need to journal the first seven hours of the digestive passage. This means you should have a total of seven journal entries.