GEORGIA | PEACH STATE PATHWAYS

Career, Technical, & Agricultural Education

HEALTHCARE SCIENCE

COURSE: 25.562 Concepts of Emergency Medicine

UNIT: 6.1 Muscular System

INTRODUCTION

Annotation:

This unit will cover the anatomy, physiology, and pathophysiology of the muscular system. This unit should be taught after the skeletal system lesson because of the connected activity from the skeletal system unit.

Grade(s):

	9th
X	10th
X	11th
X	12th

Time: Two 50 minute periods.

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Students with Disabilities:

For students with disabilities, the instructor should refer to the student's IEP to be sure that the accommodations specified are being provided. Instructors should also familiarize themselves with the provisions of Behavior Intervention Plans that may be part of a student's IEP. Frequent consultation with a student's special education instructor will be beneficial in providing appropriate differentiation.

FOCUS STANDARDS

GPS Focus Standards:

HS-CEM-5:

Students will demonstrate knowledge of the different systems of the body and how they relate to patient care.

a. Summarize the importance of the Emergency Medical Services Provider's knowledge of the body's anatomy and physiology in relation to providing competent care and accurate communication to other health care providers.

b. Demonstrate knowledge of the body's anatomy and physiology to provide competent patient care and accurate communication to other health care providers.

GPS Academic Standards:

SAP1: Students will analyze anatomical structures in relationship to their physiological functions.
SAP2: Students will analyze the interdependence of the integumentary, skeletal, and muscular systems as these relate to the protection, support and movement of the human body.
ELA11SLV : The student participates in student-to-teacher, student-to-student, and group verbal interaction.
ELAALRC3: The student acquires new vocabulary in each content area and uses it correctly.
ELA11C1: The student demonstrates understanding and control of the rules of the English language, realizing that usage involves the appropriate application of conventions and grammar in both written and spoken formats.

National / Local Standards / Industry / ISTE:

UNDERSTANDINGS & GOALS

Enduring Understandings:

- Students will understand the anatomy and physiology of the muscular system and how the muscular and skeletal systems are directly interrelated.
- Students will understand common diseases and injuries of the muscular system.

Essential Questions:

- Why is the muscular system important?
- What are common disorders, diseases and injuries related to the muscular system?
- How are the skeletal and muscular systems interrelated?

Knowledge from this Unit:

- Student can identify structures of the muscular system.
- Student can explain the function of the muscular system.
- Student can differentiate between voluntary and involuntary muscle.
- Student can describe the cause(s), signs/symptoms, and treatment of three common disorders or diseases related to the muscular system.
- Students can describe common muscular system injuries and treatment.

Skills from this Unit:

- Student will demonstrate five major movements performed by muscles.
- Student can effectively communicate information about muscular system illnesses and injuries using proper medical terminology.

ASSESSMENT(S)

Assessment Method Type: Select one or more of the following. Please consider the type(s) of differentiated instruction you will be using in the classroom.

_____ Pre-test
_____ Objective assessment - multiple-choice, true- false, etc.
__ Quizzes/Tests
__ Unit test
_____ Group project
x Individual project
_____ Self-assessment - May include practice quizzes, games, simulations, checklists, etc.
__ Self-check rubrics
__ Self-check during writing/planning process
__ Journal reflections on concepts, personal experiences and impact on one's life
__ Reflect on evaluations of work from teachers, business partners, and competition judges
__ Academic prompts
__ Practice quizzes/tests
_____ Subjective assessment/Informal observations
__ Essay tests
__ Observe students working with partners
__ Observe students role playing
_____ Peer-assessment
__ Peer editing & commentary of products/projects/presentations using rubrics
__ Peer editing and/or critiquing
_____ Dialogue and Discussion
__ Student/teacher conferences
__ Partner and small group discussions
__ Whole group discussions
__ Interaction with/feedback from community members/speakers and business partners
_____ Constructed Responses
__ Chart good reading/writing/listening/speaking habits
__ Application of skills to real-life situations/scenarios
_____ Post-test

Assessment(s) Title:

- Ironman/woman Grading Rubric

Assessment(s) Description/Directions:

- Ironman/woman Grading Rubric: hand out grading rubric to student teams at beginning of project. Read directions to students and discuss the expectations of the project with students prior to beginning work. Note that all muscles that should be cut out and labeled are listed on the rubric.

Attachments for Assessment(s):

- Ironman/woman Grading Rubric

LEARNING EXPERIENCES

Instructional planning: Include lessons, activities and other learning experiences in this section with a brief description of the activities to ensure student acquisition of the knowledge and skills addressed in the standards. Complete the sequence of instruction for each lesson/task in the unit.

Sequence of Instruction

1. Identify the Standards. Standards should be posted in the classroom for each lesson.

SAP1. Students will analyze anatomical structures in relationship to their physiological functions.

SAP2. Students will analyze the interdependence of the integumentary, skeletal, and muscular systems as these relate to the protection, support and movement of the human body.

2. Review Essential Questions.

- Why is the muscular system important?
- What are common disorders, diseases and injuries related to the muscular system?
- How are the skeletal and muscular systems interrelated?

3. Identify and review the unit vocabulary.

- Abduction
- adduction
- cardiac muscle
- circumduction
- contract
- contractibility
- Contracture elasticity
- excitability
- extensibility
- extension
- fascia
- Fibromyalgia

- Flexion
- insertion
- involuntary
- muscle tone
- muscular dystrophy
- muscle spasm
- myasthenia gravis
- origin
- rotation
- Skeletal muscle
- smooth muscle
- strain
- tendons
- visceral muscle
- Voluntary

4. Assessment Activity.

Pre-assign unit: read unit chapter in textbook and define unit vocabulary as homework. Have students take labeling self-quizzes found on websites listed in resources below.

5. Ironman/Ironwoman Project. Have students pair into same pairs from the Skeleton Beauty Contest activity completed earlier in the semester. Hand out the Ironman/Ironwoman grading rubric. Each pair of students should use construction paper to cut out the muscles listed on the back of the rubric and attach these muscles to the skeleton they created previously. Suggestion: use one half of skeleton to show anterior muscles and other half for posterior. Activity should take two class periods. Hang Ironmen/women on wall upon completion.

6. Wrap-up activity: have students stand at desks. One student leader calls out type of muscle movement (rotation, abduction, adduction, extension, or flexion) and students perform this movement with either a) specific muscle that is called out by the leader or b) as many muscles as can perform that movement.

Attachments for Learning Experiences:

Notes & Reflections:

- Show film *Darius Goes West* about teen with Duchenne Muscular Dystrophy. Related lesson plans available at http://www.dariusgoeswest.org/school-program/teachers/thome.html
- Invite individual (student or teacher from the school or community member) with muscular dystrophy or other muscular system disorder to speak to class.
- Invite school's athletic trainer or local ATC to speak to class.
- Refer to muscular system information from Applications of Healthcare Science course for additional resources

CULMINATING PERFORMANCE TASK (Optional)

Culminating Unit Performance Task Title:

Culminating Unit Performance Task Description/Directions/Differentiated

Attachments for Culminating Performance Task

UNIT RESOURCES

Web Resources:

- http://msjensen.cehd.umn.edu/webanatomy/muscular/default.html
- www.dariusgoeswest.com

Attachment(s):

Materials & Equipment:

- Scissors
- construction paper
- glue sticks or glue
- markers

What 21st Century Technology was used in this unit:

	Slide Show Software		Graphing Software		Audio File(s)
	Interactive Whiteboard		Calculator		Graphic Organizer
	Student Response System		Desktop Publishing		Image File(s)
	Web Design Software		Blog		Video
	Animation Software		Wiki		Electronic Game or Puzzle Maker
	Email	x	Website		