GEORGIA | PEACH STATE PATHWAYS

Career, Technical, & Agricultural Education

HEALTHCARE SCIENCE

COURSE: 25.521 Introduction to Healthcare Science

UNIT: 9.2 Overview of Human Body Structure – Anatomy & Physiology

INTRODUCTION

Annotation:

In this unit students will be able to apply the appropriate terminology to major organs and systems of the human body, identify major functions, and interrelationships. This Overview section applies to the basic structure, cells, tissues, organs and systems, planes, directions, cavities, and regions of the body and should provide a review of the topics introduced in the Introduction to Healthcare course.

Grade(s):

X	9th
X	10th
X	11th
X	12th

Time:

Three 50 minute periods

Author:

Rhonda S. Dunn

Additional Author(s):

Pat Rutherford contributor – worksheet/answer key, Structure and Function of the Body worksheet

Robin Dudley – contributor – anatomical taping

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-IHS-7:

The student will compare and contrast the life changes from conception throughout the lifespan as it relates to all growth and developmental needs.

- **a.** Investigate the interdependence of the various body systems to each other and to the body as a whole.
- **b.** Explain the role of homeostasis and its mechanisms as these relate to the body as a whole and predict the consequences of the failure to maintain homeostasis
- **c.** Describe how structure and function are related in terms of cell and tissues types
- **e.** Examine various conditions that change normal body functions – i.e. tissue rejection, allergies, injury, diseases and disorders and how the body responds
- **f.** Describe effects of aging on all body systems.

National / Local Standards / Industry / ISTE:

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.

SAP3: Students will assess the integration and coordination of body functions and their dependence on the endocrine and nervous systems to regulate physiological activities.

SAP4: Students will analyze the physical, chemical, and biological properties of process systems as these relate to transportation, absorption and excretion, including the cardiovascular, respiratory, digestive, excretory and immune systems.

SAP4e: Examine various conditions that change normal body functions (e.g. tissue rejection, allergies, injury, diseases and disorders and how the body responds.

UNDERSTANDINGS & GOALS

Enduring Understandings:

The students will understand:

- The basic structure, cells, tissues, organs and systems, planes, directions, cavities, and regions of the human body.

- That living things are made mostly of cells. Some organism's cells vary greatly in appearance and perform very different roles in the organism.
- The interdependence of the body systems to each other and to the body as a whole
- The role of homeostasis as it relates to the body
- The careers that require knowledge of the structure and function to the entire human body

Essential Questions:

- How do the functions of systems within animals/humans allow them to survive?
- Explain how cells are the building blocks of all living things.
- Why is important for healthcare workers to know anatomical terms?
- How do body systems work together?
- What is the function of cells and tissues?
- How does the human organism grow, develop and change throughout the lifespan?
- How does science and technology including past discoveries impact the human organism?

Knowledge from this Unit: The student will know:

- How the body functions interdependent on each body system and the body as a whole
- The role of homeostasis in the body
- Structure and function of cells and body tissues
- name each organ system as well as the various components and function that make up each system
- how to apply directional terms appropriately
- how to apply regional terms appropriately
- how to identify and apply the various body planes
- identify the various body membranes and cavities
- identify and apply the various body regions and example of an organ in each
- identify and apply the body quadrants
- How aging affects all body systems
- That various conditions such as allergies, injury, disease can affect normal body function

Skills from this Unit:

The student will be able to:

- Apply the appropriate terminology to major organs and systems of the human body, identify major functions, and interrelationships and interdependence.
- Explain the role of homeostasis
- Describe structure and functions of cells and body tissues

- Identify the various stages of growth & development from various theorists
- Identify how aging affects all body systems
- Identify conditions that affect normal body functions

ASSESSMENT(S)

Assessment Method Type:

_____ Pre-test
X Objective assessment - multiple-choice, true- false, etc.
_X_ Quizzes/Tests
__ Unit test
_____ Group project
_____ 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
X Subjective assessment/Informal observations
__ Essay tests
__ Observe students working with partners
__ Observe students role playing
X Peer-assessment
__ Peer editing & commentary of products/projects/presentations using rubrics
__ Peer editing and/or critiquing
X Dialogue and Discussion
__ Student/teacher conferences
__ Partner and small group discussions
__ Whole group discussions
__ Interaction with/feedback from community members/speakers and business partners
X Constructed Responses
__ Chart good reading/writing/listening/speaking habits
__ Application of skills to real-life situations/scenarios
_____ Post-test

Assessment(s) Title:

Written test/key attached: Body Directions, Cavities, Abdominal Regions and Quadrants Test

Assessment(s) Description/Directions:

See test

Attachments for Assessment(s):

Human Body Test

LEARNING EXPERIENCES

Sequence of Instruction

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

HS-IHS-7: The student will compare and contrast the life changes from conception throughout the lifespan as it relates to all growth and developmental needs.

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.

SAP3, Students will assess the integration and coordination of body functions and their dependence on the endocrine and nervous systems to regulate physiological activities.

SAP4, Students will analyze the physical, chemical, and biological properties of process systems as these relate to transportation, absorption and excretion, including the cardiovascular, respiratory, digestive, excretory and immune systems.

SAP4e, Examine various conditions that change normal body functions (e.g. tissue rejection, allergies, injury, diseases and disorders and how the body responds.

2. Review Essential Questions.

- How do the functions of systems within animals/humans allow them to survive?
- Explain how cells are the building blocks of all living things.
- Why is important for healthcare workers to know anatomical terms?
- How do body systems work together?
- What is the function of cells and tissues?
- How does the human organism grow, develop and change throughout the lifespan?
- How does science and technology including past discoveries impact the human organism?

3. Identify and review the unit vocabulary.

4. Assessment Activity.

Teacher:

- Assign key terms, information sheet; provide diagrams for labeling for the cell, tissues, Planes, Cavities, Quadrants, and Regions of body, reading from text.
- Discuss the content of this unit by interactive lecture
- (option) Plan Autopsy of a dill pickle to reinforce anatomical terms and directions (One class)
- (option) Plan computer lab opportunity for any of the web based activities among the sites listed above or use text software if available.

- Administer written test

Student:

- Complete worksheets, labeling, reading, and other activities as planned by instructor
- Do computer activities as assigned by instructor
- Take written test

Attachments for Learning Experiences:

- Anatomical Taping
- Human Body Structure Information Sheet
- Structure and Function of the Body Worksheet
- Structure of the Human Body Terms

Notes & Reflections:

CULMINATING PERFORMANCE TASK (Optional)

Culminating Unit Performance Task Title:

Anatomical labeling, Autopsy of a dill pickle

Culminating Unit Performance Task Description/Directions/Differentiated Instruction:

See web resources

Attachments for Culminating Performance Task:

UNIT RESOURCES

Web Resources:

These sites found: (June 2008)

- http://training.seer.cancer.gov/module_anatomy/unit1_1_body_structure.html
- http://www.quia.com/mc/394936.html (has concentration, matching game, flash cards, work search)
- http://www.studystack.com/studytable-23552 (has other games…cool…) see message about code:

Teachers can copy this code to their web pages……. <script type="text/javascript"src="http://www.studystack.com/hangmanjs-23552"></script><a

href="http://www.studystack.com"><h5>More flashcards, word search, and hangman provided by StudyStack.com</h5>

- http://district.bluegrass.kctcs.edu/billd.snyder/sharedfiles/biowebsite/BiologyLabs/BIO137/137Lab1/Lab1QuadrantsFrameSet.html LAB for quadrants and regions of the body
- http://www.flashcardexchange.com/flashcards/list/503343 for flash cards!
- http://images.google.com/imgres?imgurl=http://academic.kellogg.cc.mi.us/herbrandsonc/bio201_McKinley/f1-3p-7r_body_systems_c_c.jpg&imgrefurl=http://academic.kellogg.cc.mi.us/herbrandsonc/bio201_McKinley/chapter1.htm&h=600&w=237&sz=67&hl=en&start=10&sig2=TPaS9uGedi6k2EVORP1Axg&um=1&tbnid=ieSxpQ3wz-z7XM:&tbnh=135&tbnw=53&ei=xjlVSKrZIJXWeqW72egP&prev=/images%3Fq%3DBody%2Bregions%2Band%2Bquadrants%26um%3D1%26hl%3Den%26rlz%3D1T4ADBF_enUS230US230%26sa%3DN …Lab using celery.
- Search the web for labs such as “Autopsy of a Dill Pickle”. You will find this for middle school learners and high school learners. This activity is adapted from "Dissect a Pickle" by Doug Bunch. In this activity students learn anatomical terms and directions with reference to a pickle (transformed into human form with toothpicks).

Attachment(s): Supplemental files not listed in assessment, learning experiences, and performance task.

Materials & Equipment:

- Computer/internet access
- PPT/laptop access
- Worksheets/ diagrams for labeling
- Textbook/ resource materials
- Large dill pickles/ scalpels/ dissection trays/ toothpicks/ lab sheets/ colored pencils
- Tape if anatomical taping activity is used

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		