



## HEALTHCARE SCIENCE

**COURSE:** 25.562 Concepts of Emergency Medicine

**UNIT:** 11.1 Digestive System



## INTRODUCTION

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**Annotation:**

This unit will cover the anatomy, physiology, and pathophysiology of the digestive system.

**Grade(s):**

<input type="checkbox"/>	9 <sup>th</sup>
<input type="checkbox"/>	10 <sup>th</sup>
<input checked="" type="checkbox"/>	11 <sup>th</sup>
<input checked="" type="checkbox"/>	12 <sup>th</sup>

**Time:**

Three 50 minute periods

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**Additional Author(s):**

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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

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### 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.

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

**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.

**ELA11SLV1.** 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.

### National / Local Standards / Industry / ISTE:



## UNDERSTANDINGS & GOALS

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### Enduring Understandings:

- Students will understand the location and function of each of the organs of the digestive system. They will further understand the common diseases and disorders of the digestive system, how these diseases are treated and how, if possible, each can be prevented.

### Essential Questions:

- Why is the digestive system important?

- What are common disorders and diseases related to the digestive system?
- Which digestive system diseases are preventable, and what steps should be taken to do so?

### Knowledge from this Unit:

- Student can identify structures of the digestive system.
- Student can explain the function of the digestive system.
- Student can describe the cause(s), signs/symptoms, and treatment of three common disorders or diseases related to the digestive system.

### Skills from this Unit:

- Student can effectively communicate about diseases and disorders of the digestive system using appropriate 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
- ☐ 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:**

- Brochure Grading Rubric

**Assessment(s) Description/Directions:**

- Brochure Grading Rubric: Hand out rubric at beginning of project so that expectations are clear. Note that students will have the opportunity for a peer review prior to teacher grading so that they may make changes to their project. 50 points are awarded in the rubric for content and 50 points are determined by the level of audience awareness the student demonstrates through use of language appropriate for the target audience.

**Attachments for Assessment(s):**

- Brochure Grading Rubric



## LEARNING EXPERIENCES

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**Sequence of Instruction**

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

HS-CEM-5. Students will demonstrate knowledge of the different systems of the body and how they relate to patient care.

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

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

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.

ELA11SLV1. 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.

## 2. Review Essential Questions.

- Why is the digestive system important?
- What are common disorders and diseases related to the digestive system?
- Which digestive system diseases are preventable, and what steps should be taken to do so?

**3. Pre-assign unit.** Have students go online to site listed below to practice labeling structures of digestive system; define unit vocabulary as homework.

## 4. Identify and review the unit vocabulary.

Alimentary canal	Jejunum	Chyme
Colon	Large intestine	Small intestine
Duodenum	Liver	Soft palate
Esophagus	Pancreas	Stomach
Gallbladder	Peristalsis	Vermiform appendix
Hard palate	Pharynx	Villi
Ileum	Salivary glands	

## 5. Assessment Activity

### LESSON ONE

1. Ask students how they feel when they are extremely hungry. How do they feel after eating a HUGE meal? Discuss how the digestive system affects mood, sleep, and other bodily functions.

2. Show **digestive system slideshow presentation** and have students take notes. Suggestion: if allowed in your class, give out candy or other food items during slides that discuss mastication/saliva/bolus to allow students to experience this process as you discuss it. When discussing hard vs. soft palate have students use tongue to palpate difference in mouth.

**\*\*Differentiated instruction:** supply copy of notes OR make copy of slideshow presentation with key words omitted so that student can write in notes while following along during presentation.

3. Hand out **Digestive Labeling Worksheet**. Allow students to use notes/text as needed to complete worksheet. Optional: have students use coloring pencils to color different parts of system.

4. Wrap-up Activity: Ask students to imagine they were stranded on a deserted island and could only choose one food of which they would have an unlimited supply for the rest of their lives. Which food would they choose and why?

Attachments for Learning Experiences: Please list.

- Digestive system slideshow presentation.
- Digestive Labeling Worksheet (note: answer key is on second page of attachment)

## LESSON TWO/THREE

1. Use the **slideshow review presentation** to recap major points from lesson one.

2. Assign students into groups of two-three. Assign each group a different disorder such as appendicitis, cholecystitis, cirrhosis, constipation, diverticulitis, gastroenteritis, hemorrhoids, hepatitis C, hernia, irritable bowel syndrome, pancreatitis, peritonitis, ulcer, Chron's disease, ulcerative colitis, etc. Note: If classroom computers are not available, may opt to have students bring in images of the disorder for homework to add to brochure on day two. Since this project can be done using a computer program OR on construction paper the classroom computers are optional.

3. Have each group create a **tri-fold pamphlet** on a digestive system disorder. Create the pamphlet to be read by patients in a doctor's office waiting room ("Do you think you might have.....?") Have groups include the signs and symptoms, causes, and prevention/treatment. Have students include images located on the computer or in medical journals.

4. Have groups exchange brochures for a peer-evaluation.

5. On the second day of the project, allow each group to explain their disease/disorder to class. Pass brochures around the class for students to examine.

6. Wrap-Up activity: Name tell-tale sign(s) or symptom(s) of a digestive disorder and have students "diagnose" based on that symptom.

**Attachments for Learning Experiences:**

- Digestive System Review Game Slideshow

**Notes & Reflections:**

- Invite gastroenterologist to speak to class.
- Refer to Digestive system information from Applications of Healthcare Science course for additional resources.



## CULMINATING PERFORMANCE TASK (Optional)

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**Culminating Unit Performance Task Title:**

**Culminating Unit Performance Task Description/Directions/Differentiated Instruction:**

**Attachments for Culminating Performance Task:** Please list.



## UNIT RESOURCES

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### Web Resources:

<http://msjensen.cehd.umn.edu/webanatomy/digestive/default.html>

(Digestive system online labeling quizzes)

### Attachment(s):

Supplemental files not listed in assessment, learning experiences, and performance task.

### Materials & Equipment:

- Computers for student research/creating brochures if available
- Construction paper
- Colored pencils/markers
- Glue if making brochures by hand

### What 21st Century Technology was used in this unit:

<input checked="" type="checkbox"/>	Slide Show Software	<input type="checkbox"/>	Graphing Software	<input type="checkbox"/>	Audio File(s)
<input type="checkbox"/>	Interactive Whiteboard	<input type="checkbox"/>	Calculator	<input type="checkbox"/>	Graphic Organizer
<input type="checkbox"/>	Student Response System	<input checked="" type="checkbox"/>	Desktop Publishing	<input type="checkbox"/>	Image File(s)
<input type="checkbox"/>	Web Design Software	<input type="checkbox"/>	Blog	<input type="checkbox"/>	Video
<input type="checkbox"/>	Animation Software	<input type="checkbox"/>	Wiki	<input type="checkbox"/>	Electronic Game or Puzzle Maker
<input type="checkbox"/>	Email	<input checked="" type="checkbox"/>	Website		