



HEALTHCARE SCIENCE

COURSE: 25.552 Applications of Therapeutic Services

UNIT: 20.1 Special Senses



INTRODUCTION

Annotation:

In this unit students will identify basic anatomy and physiology of the eyes, ears, tongue, nose, and skin as they relate to our five senses (sight, hearing, taste, smell, and feel) and how these senses relate to other body systems. Students will also discuss the etiology, symptoms, and treatment of common disorders or diseases in the senses organs. Nursing Essentials students will also demonstrate how to communicate with those who have sensory impairments.

Grade(s):

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

Time:

Five to Six 50 minutes periods depending on how many optional activities are done

Author:

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Additional Author(s):

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-ATS-8:

The student will analyze the anatomy, physiology and basic pathophysiology of each of the body's systems and apply knowledge in performance of evaluating, monitoring, and treatment of client(s) and/or simulations.

HS-ATS-8-a:

Analyze anatomical structures in relationship to their physiological functions.

HS-ATS-8-b:

Analyze the interdependence of the integumentary, skeletal, and muscular systems as these relate to the protection, support and movement of the human body.

HS-ATS-8-c: Assess the integration and coordination of body functions and their dependence on the endocrine and nervous systems to regulate physiological activities.

HS-ATS-8-d: Analyze the interdependence of the body's systems as related to wellness, disease, and disorders.

HS-ATS-8-e:

Discuss the goals of therapy and care rehabilitation.

HS-ATS-8-f:

Discuss the etiology of two common diseases in each body system and how to treat and/or prevent them.

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.

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.

National / Local Standards / Industry / ISTE:



UNDERSTANDINGS & GOALS

Enduring Understandings:

- Students will identify the basic anatomy and physiology of the eye, ear, nose, and tongue as well as the sensory portion of the skin.
- Students will understand the etiology, symptoms, and treatment of some common eye, ear, or skin disorders.
- Students will understand how the special senses relate to other body systems.

Essential Questions:

- How do the special senses organs work
- How do the senses relate to other body systems especially the nervous system, skeletal, muscular, respiratory, and digestive systems?

Knowledge from this Unit:

- Special Senses anatomy and physiology terms
- Identification of common eye disorders and how to treat them and prevent them
- Identification of common ear disorders and how to treat them and prevent them
- Label main parts of eyes and ears
- Explain how the senses relate to other body systems especially the nervous system, skeletal, muscular, respiratory, and digestive systems

Skills from this Unit:



ASSESSMENT(S)

Assessment Method Type:

- ☐ 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:

1. Informal checks will be made while student is completing assignment sheet.
2. Peer and Self Assessments will be made if equipment available to do a disabilities lab for vision and hearing disorders or other Internet Senses activities.
3. Constructed response for quiz or test.

Assessment(s) Description/Directions:

1. Daily grade(s) may or may not be given for assignment sheet and extra activities.
2. Test grade for unit test.

Attachments for Assessment(s):

- [Special Senses Assignment sheet](#) This is an assignment sheet students can complete over the eyes, ears, nose, tongue, and skin.



LEARNING EXPERIENCES

Sequence of Instruction

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

HS-ATS-8: The student will analyze the anatomy, physiology and basic pathophysiology of each of the body's systems and apply knowledge in performance of evaluating, monitoring, and treatment of client(s) and/or simulations.

HS-ATS-8-a. Analyze anatomical structures in relationship to their physiological functions.

HS-ATS-8-b. Analyze the interdependence of the integumentary, skeletal, and muscular systems as these relate to the protection, support and movement of the human body.

HS-ATS-8-c. Assess the integration and coordination of body functions and their dependence on the endocrine and nervous systems to regulate physiological activities.

HS-ATS-8-d. Analyze the interdependence of the body's systems as related to wellness, disease, and disorders.

HS-ATS-8-e. Discuss the goals of therapy and care rehabilitation.

HS-ATS-8-f. Discuss the etiology of two common diseases in each body system and how to treat and/or prevent them.

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.

2. Review Essential Questions.

- How do the special senses organs work
- How do the senses relate to other body systems especially the nervous system, skeletal, muscular, respiratory, and digestive systems?

3. Identify and review the unit vocabulary.

4. Assessment Activity.

Introduction of unit: There are many eye images that you might have students look at to see some of the tricks of the eye. One example is a + with one line green and one line red on an index card. Stare at the “cross” for about 15 seconds and then look away at a white board or paper. What do you see? There are many other things that you could do like this including those 3-D pictures that you concentrate on at your nose and then pull away to see three dimensions.

Lesson 1: If United Streaming is available, watch at least a few segments of videos about the eyes and sight. (50 minute period including introduction)

Lesson 2: Handout the copies of assignment sheet. Begin Multimedia slide show about the eye and explain the eye diagrams as students label the eyes on their diagram. Next, students may use their textbook (or Internet sources if textbook not available) to complete the assignment sheet section over the eyes. You might want to allow students to look at each other’s eyes very briefly through an ophthalmoscope. You might also have students check vision with wall eye charts. (One to two 50 minutes periods)

Optional assignment: Using this Internet site: <http://www.agape1.com/color%20vision.htm> read the entire article about color blindness. Then write at least one statement about what you learned from each of these 3 sections: *Examples of School Difficulties because of Color Vision difficulties; Inheritance & incidence; and Safety Considerations & Strategies.* We will discuss your statements from this article. Take the Color Vision Test at the top left of # 5 Web site home page and record your answers.

Lesson 3: Watch a video about the ears and/or sound. Then complete the segment of the assignment sheet over ears. Go over parts of ear on ear model. If hearing machine is available in your school, you might ask the school nurse to demonstrate how to do a hearing test. (One 50 minutes period)

Lesson 4: Hold a special senses disabilities lab day. Kits are available with distorted glasses to see different eye conditions; muffled tapes for hearing; ways to feel different things. (One 50 minutes period)

Assessment: Written test (one 50 minute period or less)

Nursing Essentials students will review the senses as they study how to communicate with patients who have a hearing or vision disability.

Attachments for Learning Experiences:

Notes & Reflections:

There are disabilities kits that you may purchase so students can role play what it would be like to have senses disorders.



CULMINATING PERFORMANCE TASK (Optional)

Culminating Unit Performance Task Title:

Identify the basic anatomy and physiology of the special senses. Also describe several eye disorders and ear disorders and how to treat them. Label the main parts of the eye and the ear.

Culminating Unit Performance Task Description/Directions/Differentiated

After viewing the slide show and completing the assignment sheet using textbook or reliable Internet resources, students will take a written knowledge test.

Attachments for Culminating Performance Task

[Special Senses Test](#)



UNIT RESOURCES

Web Resources:

- An Eye Multimedia slide show is available at <http://www.worldofteaching.com/biologypowerpoints.html> to help the student identify the main anatomy and physiology of the eye. Scroll down to “eye” to view the slide show.
- Here is a Web site for vision simulators: <http://www.visionsimulator.com/default.asp>
- Don’t forget about United Streaming Discovery Education videos that you can show in your classroom. The Web site address is: <http://streaming.discoveryeducation.com/> After you set up an account, look at life science and then search for whatever you would like to show. A new video available is: Human Body: Pushing the Limits: Sight (43 minutes, 2008). There are several other eye and ear videos as well.
- Using this Internet site: <http://www.agape1.com/color%20vision.htm>, students will learn more about color blindness.

Attachment(s):

Materials & Equipment:

What 21st Century Technology was used in this unit:

<input 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 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		