GEORGIA MIDDLE SCHOOL Instructional Resources

CAREER, TECHNICAL, & AGRICULTURAL EDUCATION

HEALTHCARE SCIENCE

COURSE: Healthcare Science

UNIT 4: Introduction to Respiratory Therapy

INTRODUCTION

Annotation:

This unit will include lessons on Respiratory Therapy. It will compare and contrast the roles and responsibilities of pulmonologists, certified respiratory therapists, registered respiratory therapists, and pulmonary function technologists. Students will learn to identify the parts of the respiratory systems and the functions of each. They will be able to differentiate between the respiration and ventilation systems and investigate medical conditions that affect the respiratory system.

Grade(s):

	6th
X	7th
	8th

Time:

Four 50 minute class periods

Author:

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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 appropriately. 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. Many students (both with and without disabilities) who struggle with reading may benefit from the use of text reading software or other technological aids to provide access to printed materials. Many of these are available at little or no cost on the internet.

FOCUS STANDARDS

GPS Focus Standards:

MSHS7-HS-4 -- Students will differentiate careers available in the field of respiratory care.

a) Compare and contrast the roles and responsibilities of pulmonologists, certified respiratory therapists, registered respiratory therapists, and pulmonary function technologists, along with their education and training requirements, salary ranges, job outlooks, and facilities in which they work.

b) Identify the parts of the respiratory system and the function of each.

c) Differentiate between respiration and ventilation.

d) Investigate medical conditions that affect the respiratory system.

e) Define the terms oxygen therapy, aerosol therapy (inhalers, nebulizers), hyperinflation (incentive spirometry), chest physical therapy, suctioning, and mechanical ventilation, and describe when each would be required.

f) Sample tasks: Demonstrate at least one of the following:

- Proper placement of an oxygen mask and a nasal cannula on a manikin (e.g., a CPR manikin).
- Proper placement of a stethoscope for the auscultation of the lungs.
- Proper use of an incentive spirometer.

GPS Academic Standards:

S7CS7 – Students will communicate scientific ideas and activities clearly.

S7CS4 – Students will use tools and instruments for observing, measuring, and manipulating equipment and materials in scientific activities.

S7CS5 – Students will use the ideas of a system, model, change, and scale in exploring scientific and technological matters.

S7CS6 – Students will communicate scientific ideas and activities clearly.

S7L2 – Students will describe the structure and function of cells, tissues, organs, and organ systems.

ML7P3 – Students will communicate mathematically.

National / Local Standards / Industry / ISTE:

1.11 – Classify the basic structural and functional organization of the human body including chemical, cellular, tissue, organ, and system.

1.13 – Analyze the interdependence of the basic structures and functions of the human body as hey relate to wellness, disease, disorders, therapies, and care/rehabilitation.

1.14 – Compare the structure and function of the human body across the lifespan.

1.21 – Compare diseases/disorders including respective classification(s), prevention, causes, athogenesis, diagnoses, therapies, and care/rehabilitation.

1.22 – Investigate biomedical therapies as they relate to the prevention, pathology, and treatment of disease.

3.11 – Select appropriate tools for information to be collected.

4.31 – Compare potential health science career pathways using a variety of health careers within the diagnostic services, therapeutic services, health informatics services, support services, or biotechnology research and development.

4.32 – Recognize levels of education, credentialing requirements, employment opportunities, workplace environments, and career growth potential for a service area.

UNDERSTANDING & GOALS

Enduring Understandings:

Students will be able to make an informed decision about selecting a career in respiratory therapy. Students will understand the anatomy and functions of the anatomy and relate it to illnesses that affect the respiratory system.

Essential Questions:

- What are the roles and responsibilities of pulmonologists, certified respiratory therapists, registered respiratory therapists, and pulmonary function technologists?
- What are the education and training requirements, salary ranges, job outlooks, and facilities in which they work?
- What are the parts of the respiratory system and what are the functions of each?
- What is the difference between respiration and ventilation?
- What diseases and conditions affect the respiratory system?

Knowledge from this Unit:

- Identify the career choices available in respiratory therapy.
- Identify the anatomy and physiology of the respiratory system?
- Describe the difference between respiration and ventilation.
- Describe the diseases of the respiratory system.

Skills from this Unit:

Demonstrate at least one of the following:

- Proper placement of an oxygen mask and a nasal cannula on a manikin
- (e.g., a CPR manikin).
- Proper placement of a stethoscope for the auscultation of the lungs.
- Proper use of an incentive spirometer.

ASSESSMENTS

Assessment Method Type:

____ Pre-test
x Objective assessment - multiple-choice, true- false, etc.
__ Quizzes/Tests
_x_ Unit test
____ Group project
____ Individual project
X 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
_x_ Reflect on evaluations of work from teachers, business partners, and competition judges
__ Academic prompts
__ Practice quizzes/tests
X Subjective assessment/Informal observations
__ Essay tests
_x_ Observe students working with partners
_x_ Observe students role playing
____ 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
_x_ Whole group discussions
__ Interaction with/feedback from community members/speakers and business partners
x Constructed Responses
__ Chart good reading/writing/listening/speaking habits
_x_ Application of skills to real-life situations/scenarios
____ Post-test

Assessment(s) Title:

Unit Exam: Anatomy and physiology of respiratory system including disease and conditions of the respiratory system, terminology.

Assessment(s) Description/Directions:

Observation of skills demonstration selected and taught by instructor.
Multiple choice unit exam as described above.

LESSON PLANS

Instructional planning:

• LESSON 1: Careers in Respiratory Care

1. Identify the Standards. Standards should be posted in the classroom

MSHS7-HS-4 - Students will differentiate careers available in the field of respiratory care.
a) Compare and contrast the roles and responsibilities of pulmonologists, certified respiratory therapists, registered respiratory therapists, and pulmonary function technologists, along with their education and training requirements, salary ranges, job outlooks, and facilities in which they work.

2. Review Essential Question(s). Post Essential Questions in the classroom.
- What are the roles and responsibilities of pulmonologists, certified respiratory therapists, registered respiratory therapists, and pulmonary function technologists?
- What are the education and training requirements, salary ranges, job outlooks, and facilities in which they work?

3. **Interest approach**
- Ask students if they have seen people in public places using oxygen? Why do you think this is necessary?
- Display oxygen equipment, stethoscopes, incentive spirometer.

4. Show and discuss **Careers in Respiratory Therapy** powerpoint.

• LESSON 2: Parts of the Respiratory System

1. Identify the Standards. Standards should be posted in the classroom

MSHS7-HS-4 - Students will differentiate careers available in the field of respiratory care.
b) Identify the parts of the respiratory system and the function of each.
c) Differentiate between respiration and ventilation.

2. Review Essential Question(s). Post Essential Questions in the classroom.
- What are the parts of the respiratory system and what are the functions of each?
- What is the difference between respiration and ventilation?

3. Interest Approach

4. Discussion
- Have students name parts of the respiratory system and their functions.
- Show power point on respiratory system and have student label drawing of respiratory system.
- The power point can be found at: kids-learn.org/susansilverman/systems/sullivan/Together421.ppt

5. Activity
Have them make a poster showing the parts of the respiratory labeling them.

• LESSON 3: Disorders of Respiratory Systems and Therapy

1. Identify the Standards. Standards should be posted in the classroom

   MSHS7-HS-4 -- Students will differentiate careers available in the field of respiratory care.

   d) Investigate medical conditions that affect the respiratory system.

   e) Define the terms oxygen therapy, aerosol therapy (inhalers, nebulizers), hyperinflation (incentive spirometry), chest physical therapy, suctioning, and mechanical ventilation, and describe when each would be required.

   f) Sample tasks: Demonstrate at least one of the following:

   • Proper placement of an oxygen mask and a nasal cannula on a manikin (e.g., a CPR manikin).

   • Proper placement of a stethoscope for the auscultation of the lungs.

   • Proper use of an incentive spirometer.

2. Review Essential Question(s). Post Essential Questions in the classroom.
   - What diseases and conditions affect the respiratory system?

3. Identify and review the unit vocabulary. Terms may be posted on word wall.

Aerosol therapy	Inhalers	Respiration
Chest physical therapy	Mechanical ventilation	Suctioning
Hyperinflation	Nebulizers	ventilation
Incentive spirometry	Oxygen therapy	

4. Interest approach

   Ask students if they have ever had difficulty breathing and how they felt. Engage students in discussion of why people have difficulty breathing. Show students the incentive spirometer. Show students how to listen to breath sounds. Allow students to listen to a partner's breath sounds. Have students describe what they hear.

5. Show **Diseases and Disorders of the Respiratory System** powerpoint.

6. Discuss diseases of the respiratory system (included in power point) and have students take notes on description of diseases.
www.augusta.k12.va.us/668770823105347/.../Respiratory_system.ppt - Similar

Name of Disease	Description
1. pneumonia	
2. cancer	
3. bronchitis	
4. chronic obstructive pulmonary disease	
5. asthma	
6. emphysema	

Attachments for Learning Experiences:

Diseases and Disorders of the Respiratory System
Careers in Respiratory Therapy
Parts of the Respiratory System

CULMINATING PERFORMANCE TASK

Culminating Unit Performance Task Title:

Poster: Parts of the Respiratory System: Lesson 2

Culminating Unit Performance Task Description/Directions/Differentiated Instruction:

Attachments for Culminating Performance Task:

UNIT RESOURCES

Web Resources:

Attachment(s):

Materials & Equipment:

- Poster board
- Markers

21st Century Technology used in this unit:

x	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	x	Electronic Game or Puzzle Maker
	Email	x	Website		