GEORGIA MIDDLE SCHOOL Instructional Resources

CAREER, TECHNICAL, & AGRICULTURAL EDUCATION

HEALTHCARE SCIENCE

COURSE: Healthcare Science

UNIT 1: Safety Practices and Infection Control

INTRODUCTION

Annotation:

In this unit students will learn to identify and demonstrate proper implementation of safe work practices to prevent illness using online tutorial interactive resources, teacher presentation, and infection control equipment.

Grade(s):

X	6th
	7th
	8th

Time:

Five 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:

MSHS6-HS-1- Students will demonstrate the proper implementation of safe work practices to prevent injury or illness.
a) Demonstrate the proper method for hand washing.
b) List the correct sequence of body motions for lifting, pushing, and turning.
c) Discuss the causes, prevention, and effects of HIV/AIDS and hepatitis.

GPS Academic Standards:

S6CS2: Students will use standard safety practices for all classroom laboratory and field investigations.
S6CS4: Students will use tools and instruments for observing, measuring, and manipulating equipment and materials in scientific activities.
S6CS7: Students will question scientific claims and arguments effectively.
M6A2: Students will consider relationships between varying quantities.
M6D1: Students will pose questions, collect data, represent and analyze the data, and interpret results.

UNDERSTANDING & GOALS

Enduring Understandings:

Students will understand how germs are spread. They will understand the proper procedures to prevent the spread of organisms that cause illness or injury.

Essential Questions:

- What are proper body mechanics?
- How are germs spread and how can we prevent the spread of germs?
- Does the flu transfer from person to person like most other germs?
- How are HIV/AIDS spread?
- How is Hepatitis spread?
- What is infection control?

Knowledge from this Unit:

Students will be able to:

- Discuss measures to prevent the spread of germs.
- Explain procedures to break the chain of infection.
- Describe the correct methods for lifting, pushing, and turning.

Skills from this Unit:

- Implement methods for preventing the spread of disease organisms.
- Demonstrate proper lifting, pushing, and turning techniques.

ASSESSMENTS

Assessment Method Type:

_____ Pre-test
_x_ Objective assessment - multiple-choice, true- false, etc.
  _x_ Quizzes/Tests
  _x_ Unit test
_x_ 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 and 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
_____ Constructed Responses
  __ Chart good reading/writing/listening/speaking habits
  __ Application of skills to real-life situations/scenarios
_x_ Post-test

Assessment(s) Description/Directions:

Follow the steps on the handout. The instructor and team leader will observe the students hand washing and rate the students' performance of the skill on the **Hand Washing Checklist**.

Attachments for Assessment(s):

Hand Washing Checklist

Instructional planning:

• LESSON 1: USING PROPER BODY MECHANICS

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

   MSHS6-HS-1: Students will demonstrate the proper implementation of safe work practices to prevent injury or illness.
   a) Demonstrate the proper method for hand washing.
   b) List the correct sequence of body motions for lifting, pushing, and turning.
   c) Discuss the causes, prevention, and effects of HIV/AIDS and hepatitis.

2. Review Essential Question(s). Post Essential Questions in the classroom.

   - What are proper body mechanics?

3. Interest approach – Mental set

   Transfer In: Today we will begin to learn about safe practices, specifically ways to prevent injury to ourselves and others and the prevention illness and the spread of germs.

   Set Induction: Play video clip of top 10 skateboarding accidents. Ask students to think of ways these accidents could have been prevented. Statement for transition into Body Mechanics lesson: "Now let's learn about ways to prevent injury when performing normal daily activities."

4. Using proper body mechanics -
   Display guidelines for use of proper body mechanics on power point. Have student volunteers read each step as teacher demonstrates the activity using a cardboard box.

   Activity**:** Divide the class in half. One half of the class stands in a straight line with a cardboard box on the floor in front of them. The other half of the class remains seated. Seated students observe standing students pick up boxes using proper body mechanics.

   Evaluation**:** Peer evaluation, seated students may offer constructive criticism, standing students repeat lifting of boxes activity until mastery of skill. Rule for making constructive criticism: Student must state a positive observation then must say, "May I make a suggestion for improvement?" Then student may make a constructive criticism.

• LESSON 2: SPREADING GERMS DISCUSSION

1. Review Essential Questions. Post Essential Questions in the classroom.

   • How are germs spread and how can we prevent the spread of germs?
2. Identify and review the unit vocabulary. Terms may be posted on word wall.

Infectious Agent	Reservoir Host	Susceptible Host
Portal of Entry	Route of Transmission	Portal of Exit

3. Set Induction: Teacher says, "Yesterday we learned ways to prevent injury to ourselves. Today we are going to learn about ways to prevent illness and spread of germs." Teacher tosses basketball up and down in the air then asks a student to volunteer. Volunteer passes the ball with the teacher. Teacher tells the students that we will use this activity to see how easily germs are spread.

   ACTIVITY ONE: Germs on a ball

   a) Choose two students who are comfortable throwing and catching a basketball. Use black light to show their hands prior to passing basketball.
   b) Have each student place glogerm lotion on their hands.
   c) Ask two other students to count the number of times the ball touches hands and record the number in their notebook. Ask another student to be the timer. This student will say, "Begin" and time the passing of the ball for two minutes.
   d) Have the students pass the ball back and forth for two minutes.
   e) After two minutes, dim the lights and show the hands and ball with black light illumination.
   f) Have students wash hands using the Hand washing Rubric as a guide. Use black light to illuminate hands again.

   ACTIVITY TWO: Using math to understand increasing the spread of germs

   a) Question and answer:
      *How many times did the ball touch hands during a two minute period? (Have students who recorded this in their notebook answer if others don't recall).
      *How many times would a ball touch hands during a 10 minute period if the ball continued to be passed at the same pace?
      *How many times would a ball touch hands during a 20 minute period if the ball continued to be passed at the same pace?
      *Now let's use our online graph creation program to create a graph showing the number of times a ball touches hands over time. Chart is created together as a class on projected on a screen similar to a Smartboard.
      (Excel has a graph creation program and there are many easy to use fun programs on the internet.)
      *Use the graph to answer the following questions:
         •Does the number of times hands come into contact with the ball increase or decrease the longer you pass a ball?
         •What are other factors that could affect the number of germs being passed back and forth on the ball?
         •What is the single most effective way to decrease the spread of germs?
         Have students review steps for hand washing.

• LESSON 3: "HOW LOU GOT THE FLU"

1. Review Essential Questions. Post Essential Questions in the classroom.

   • Does the flu transfer from person to person like regular germs?

2. Set Induction – Begin the story of "How Lou Got the Flu" with class using the American Museum of Natural History website: http://www.amnh.org/nationalcenter/infection/04_lou/04_lou.html
   Activity 1 – Have students work in pairs and create an outline of "How Lou Got the Flu" from the American Museum of Natural History website:
   http://www.amnh.org/nationalcenter/infection/04_lou/04_lou.html
   Activity 2 – Have each pair of students join another pair of students to form a small group of four. This group of four should compare outlines of the story.
   Activity 3 -- Have each group of four present to the class their outline of flu transmission into the Chain of Infection diagram.

• LESSON 4: CHAIN OF INFECTION

1. Review Essential Questions. Post Essential Questions in the classroom.

   • How are HIV/AIDS spread?
   • How is Hepatitis spread?

2. Set Induction – Review last cycle of How Lou Got the Flu in the Chain of Infection Diagram
   Activity 1 - Use the Chain of Infection Diagram to present material about HIV/AIDS and Hepatitis

• LESSON 5: REVIEW

1. Review Essential Questions. Post Essential Questions in the classroom.

   • What is infection control?

2. **Activity 1-** Review of Infection Control unit.
   Activity 2- Completion of Healthcare Science Technology Infection Control Test.

3. **Closure:**

   1) Who would like to list the links in the Chain of Infection in correct order?
   2) What can explain the journey a pathogen or germ takes through the Chain of Infection, including a definition of each link along the way?
   3) Give examples of ways to break the Chain of Infection.

   Over the past two weeks we have learned various ways to implement safe work practices. We will continue to apply these skills throughout the remaining nine weeks. Accurate and effective communication is important in implementing safety and infection control practices. In our next unit of study, we will explore effective communication in the healthcare setting.

• ATTACHMENTS FOR LESSON PLANS

- **Hand Washing Checklist**
- **Safety Practices and Infection Control PowerPoint**

CULMINATING PERFORMANCE TASK

Culminating Unit Performance Task Description/Directions/Differentiated Instruction:

Attachments for Culminating Performance Task:

UNIT RESOURCES

Web Resources:

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

Materials & Equipment:

What 21st Century Technology was 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		Electronic Game or Puzzle Maker
	Email		Website		