



GEORGIA MIDDLE SCHOOL

Instructional Resources

CAREER, TECHNICAL, & AGRICULTURAL EDUCATION

HEALTHCARE SCIENCE

COURSE: Healthcare Science

UNIT 4: Pharmacy



INTRODUCTION

Annotation:

This unit includes lessons on comparing and contrasting the roles and responsibilities of pharmacists, pharmacy aides, and pharmacy technicians, along with their education, training requirements salary ranges, job outlooks and facilities in which they work. Students will learn to maintain pharmacy inventory and fill written prescriptions or requests for refills with simulated medications, verify accuracy and completeness of prescription information, retrieve, count, pour, weigh, measure, and mix simulated medications, and prepare prescription labels. They will select the appropriate container for a medication; affix the prescription and auxiliary labels to a medication container.

Students will list routes of medication administration and their appropriate uses. Students will demonstrate one of the following: creation of a client profile, use of the Physician's Desk Reference, write a prescription using JCAHO accepted abbreviations and symbols, place a filled prescription in the appropriate bin for patient pick-up.

Grade(s):

X	6 th
	7 th
	8 th

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-7 Students will explore the different careers available in the field of pharmacy.

- a) Compare and contrast the roles and responsibilities of pharmacists, pharmacy aides, and pharmacy technicians, along with their education, training requirements, salary ranges, job outlooks, and facilities in which they work.
- b) Maintain pharmacy inventory and inform the supervisor of stock needs.
- c) Fill written prescriptions or requests for prescription refills with simulated medications.
- d) Verify the accuracy and completeness of prescription information.
- e) Retrieve, count, pour, weigh, measure, and mix simulated medications.
- f) Prepare prescription labels.
- g) Select the appropriate container for a medication.
- h) Affix the prescription and auxiliary labels to a medication container.
- i) List routes of medication administration and their appropriate uses.
- j) Demonstrate at least one of the following:
 - Creation of a client profile for a pharmacy database.
 - Use of the Physicians' Desk Reference (PDR) or other drug references.
 - Writing of a prescription using JCAHO-accepted abbreviations and symbols.
 - Placement of a filled prescription in the appropriate bin for patient pick-up.

GPS Academic Standards:

- M6M1** – Students will convert from one unit to another within one system of measurement (customary or metric) by using proportional relationships.
- M6A2** – Students will consider relationships between varying quantities.
- S6CS3** – Students will use computation and estimation skills necessary for analyzing data and following scientific explanations.
- S6CS4** – Students will use tools and instruments for observing, measuring, and manipulating equipment and materials in scientific activities.

UNDERSTANDING & GOALS

Enduring Understandings:

Students will understand the career opportunities available in the field of pharmacy.

Essential Questions:

- What are the roles and responsibilities of the pharmacist, pharmacy aide, and pharmacy technician?
- Why is it important to maintain the correct inventory in the pharmacy?
- What information should be on a prescription?
- What are the routes of medication administration and when are they used?

Knowledge from this Unit:

- Compare and contrast the roles and responsibilities of pharmacist, pharmacy aides, and pharmacy technicians, along with their education, training requirements, salary ranges, job outlooks and facilities in which they work.
- List routes of medication administration and their appropriate uses.

Skills from this Unit:

- Maintain pharmacy inventory and inform the supervisor of stock needs.
- Fill written prescriptions or requests for prescription refills with simulated medications.
- Verify the accuracy and completeness of prescription information.
- Retrieve, count, pour, weigh, measure, and mix simulated medications.
- Select the appropriate container for a medication.
- Affix the prescription and auxiliary labels to a medication container.
- Demonstrate one of the following: Creation of a client profile for a pharmacy database; Use of the Physicians' Desk Reference or other drug references; Writing of a prescription using JCAHO accepted abbreviations and symbols; Placement of a filled prescription in the appropriate bin for patient pick-up.

ASSESSMENTS

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:

Unit Exam:

Assessment(s) Description/Directions:

Attachments for Assessment(s):

LESSON PLANS

Instructional Planning:

• **INTRODUCTION**

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

MSHS6-HS-7 Students will explore the different careers available in the field of pharmacy.

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2. Review Essential Questions.

- What are the roles and responsibilities of the pharmacist, pharmacy aide, and pharmacy technician?
- Why is it important to maintain the correct inventory in the pharmacy?
- What information should be on a prescription?
- What are the routes of medication administration and when are they used?

3. Identify and review the unit vocabulary.

pharmacist	United States Pharmacopeia(USP)
pharmacy aide	National Formulary(NP)
Pharmacy technician	Physician's Desk Reference
drug interaction	pharmacology
Prescription medication	pharmacokinetics
over-the-counter medication	

1. Interest approach – Mental set

- Display medication bottles, drug counters, pill crusher and other equipment and supplies used in the pharmacy.
- Ask students to think of a time they were sick and needed medication. Complete KWL chart about information students know about pharmacy, and complete KWL chart about information students are interested in learning and would like to know about pharmacy.

• LESSON 1: IDENTIFYING Roles and Responsibilities of pharmacists and pharmacy related careers

Essential Question:

- What are the roles and responsibilities of the careers in pharmacy?

1. Power Point Presentation **HS 6-4 Field of Pharmacy** See below.
2. Provide each student with a chart to compare/contrast roles and responsibilities of pharmacists, pharmacy technicians, and pharmacy aides along with education, training requirements, salary ranges, job outlooks and facilities in which they work.
3. Instruct students to complete chart as you present power point. Explain that all the information will be in the power point. See Below.
4. Prepare 3X5 cards with various roles/responsibilities of the pharmacist, pharmacy technician, and pharmacy aide including all the information such as education, training, salary ranges, job outlooks and work facilities provided in the power point presentation. Assemble students into groups. Have students match the items on the 3X5 cards with the job titles posted on the classroom wall. Discuss whether the cards fit into the categories after each group has finished their choices.

	Pharmacist	Pharmacy Technician	Pharmacy Aide
Roles/Responsibilities			
Education/Training			
Salary Ranges			
Job Outlook			
Work Facilities			

Attachment: Power point HS_6-4_Field of Pharmacy



Field of Pharmacy

Essential Question:
How do the roles/responsibilities of pharmacists, pharmacy technicians, pharmacy aides compare/contrast?

• LESSON 2: PHARMACY PROCEDURES

Essential Question:

- How is a prescription filled?

Discussion:

1. Ask students what they think might be the steps in filling a prescription. Go over steps in filling a prescription. Discuss the knowledge necessary to read and verify a prescription. Discuss what information must be on a prescription in order to prepare the prescription.
2. Ask students if they can read their prescriptions from their doctors. Provide students with list of common abbreviations used on prescriptions. Show them a large prescription (made from a sheet of poster paper). Identify each component of the prescription. Then give students copies of several prescriptions and have them check for the components.
3. Explain the use of proportions in computing drug dosages. Explain and work through several examples of the formula for computing drug dosages.

$$\frac{\text{known unit on hand}}{\text{known dosage form}} = \frac{\text{dose ordered}}{\text{unknown amount to be given}}$$

4. Give students problems to solve. Use the attachment [HS 6-4 Pharmacy Procedures – Problems to Solve](#). [HS 6-4 Pharmacy Procedures—Problems to Solve Answer Key](#)

• LESSON 3: PHARMACY PROCEDURES

Essential Question:

- What are the different routes of medication administration?

Discussion:

1. Present the PowerPoint, Routes of Drug Administration, to the class. Use the attachment [HS 6-4 Routes of Drug Administration](#).



2. Have the students complete the attached worksheet **HS 6-4 Worksheet Routes of Drug Administration**. This worksheet will accompany the "Routes of Drug Administration"

3. Summary- Ask students to state one they have learned from the PowerPoint.

• **LESSON 4: PHARMACY PROCEDURES**

Essential Question:

- How do you process a prescription to assure the patient receives the correct medication?

Note: In order to teach the following objectives, set up a pharmacy center in one section of the classroom. Have students complete the procedures below and return check sheet of work to teacher for grading.

1. Maintain pharmacy inventory and inform the supervisor of stock needs.
(Note: In researching how inventory is done in pharmacies, I concluded that inventory in smaller independent pharmacies is very simple. The sticker is removed from the side of the medication bottle when the bottle is empty and placed on a clip board to be placed as an order as soon as possible. In larger chain pharmacies, the inventory is done on computer and does not require action from the person filling the prescription other than sending an order for needed medications.)
2. Fill written prescriptions or requests for prescription refills with simulated medications.
3. Verify the accuracy and completeness of prescription information.
4. Retrieve, count, pour, weigh, measure, and mix simulated medications.
5. Select the appropriate container for a medication.
6. Affix the prescription and auxiliary labels to a medication container.

• **ATTACHMENTS FOR LESSON PLANS**

- **HS 6-4 Procedure Creating Customer Profile**
- **HS 6-4 Chestatee MS Pharmacy Patient Profile**
- **HS 6-4 Common Medical Abbreviations**
- **HS 6-4 Procedure Reviewing Prescriptions**
- **HS 6-4 Procedure Preparing Prescriptions for pharmacist**

CULMINATING PERFORMANCE TASK

Culminating Unit Performance Task Title:

Students complete the preparation of a prescription

Culminating Unit Performance Task Description/Directions/Differentiated Instruction:

Students will prepare a patient profile with 70% proficiency.

Students will follow procedures for preparing a prescription with 70% efficiency.

Attachments for Culminating Performance Task:

See above forms.

UNIT RESOURCES

Web Resources:

Attachment(s):

Materials & Equipment:

Materials to set up a pharmacy center such as:

- shelves
- prescription bottles
- pill counter
- labels
- medications simulations

21st Century Technology used in this unit:

<input checked="" type="checkbox"/>	Slide Show Software
<input type="checkbox"/>	Interactive Whiteboard
<input type="checkbox"/>	Student Response System
<input type="checkbox"/>	Web Design Software
<input type="checkbox"/>	Animation Software
<input type="checkbox"/>	Email

<input type="checkbox"/>	Graphing Software
<input checked="" type="checkbox"/>	Calculator
<input type="checkbox"/>	Desktop Publishing
<input type="checkbox"/>	Blog
<input type="checkbox"/>	Wiki
<input checked="" type="checkbox"/>	Website

<input type="checkbox"/>	Audio File(s)
<input checked="" type="checkbox"/>	Graphic Organizer
<input type="checkbox"/>	Image File(s)
<input type="checkbox"/>	Video
<input type="checkbox"/>	Electronic Game or Puzzle Maker