GEORGIA MIDDLE SCHOOL Instructional Resources

CAREER, TECHNICAL, & AGRICULTURAL EDUCATION

HEALTHCARE SCIENCE

COURSE: Healthcare Science

UNIT 5: Introduction to Medical Laboratory Technology

INTRODUCTION

Annotation:

In this unit, students will learn about a career in Medical Laboratory Technology.

Grade(s):

	6th
X	7th
	8th

Time:

Five 50 minute class periods

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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-6-- Students will assess careers opportunities in the field of medical laboratory technology.

a) Compare and contrast the roles and responsibilities of pathologists, medical laboratory technologists, medical laboratory technicians, medical laboratory assistants, and phlebotomists, along with their education, training requirements, salary ranges, job outlooks, and facilities in which they work.

b) Identify and operate the parts of a microscope.

c) Distinguish between a red blood cell, white blood cell, and platelet.

d) Differentiate between arterial, venous, and capillary blood and ways of obtaining each type of sample.

e) Compare the different types of lab tests.

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

- Cleansing the skin in preparation for a capillary puncture.
- Placing a tourniquet in preparation for a venipuncture.
- Testing simulated urine using a reagent strip.
- Measuring specific gravity of simulated urine.
- Measuring blood sugar (glucose) level using simulated blood and a glucose meter.

GPS Academic Standards:

S7CS2 – Students will use standard safety practices for all classroom laboratory and field investigations.

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

S7CS6 – Students will communicate scientific ideas and activities clearly.

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.

1.35 – Analyze diagrams, charts, graphs, and tables to interpret healthcare results.

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.

7.11 – Apply infection control procedures including standard precautions.

7.12 – Compare the different methods of controlling the growth of microorganisms.

UNDERSTANDING & GOALS

Enduring Understandings:

Medical Laboratory Personnel work under the supervision of the pathologist or doctor. They are important members of the Healthcare Team, performing test on tissues, fluids, and cells to determine the disease, diagnosis and treatment indicated. Important skills, venipuncture, microscope, computer and computerized equipment use, eye for details, and good work ethics.

Essential Questions:

- Compare and Contrast the roles and responsibilities of pathologists, medical laboratory technologists, medical laboratory technicians, medical laboratory assistants, and phlebotomists.
- Describe the differences between a red blood cell, white blood cell, and platelets; what are their functions?
- What are the differences between arterial, venous, and capillary blood?
- What are the steps when cleansing the skin in preparation for a capillary puncture and measuring blood sugar (glucose) levels?
- What are the rules of Standard/Universal Precautions?
- What are the principals of infection control?
- What is a culture & Sensitivity?

Knowledge from this Unit:

- Identify Careers in Medical Laboratory Technology and the roles and responsibilities' of each.
- Recognize levels of education, credentialing requirements, employment opportunities, workplace environments, and career growth potential for a service area.
- Identify 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.
- Recognize the different methods of controlling the growth of microorganisms.
- Identify parts and operations of the Microscope.
- Apply infection control procedures including standard precautions.
- Distinguish between red blood cells, white blood cells and platelets.
- Compare the different types of lab tests.
- Complete demonstration/ skills related activities using accepted practices and proper equipment.

Skills from this Unit:

- Students will perform the steps of cleansing the skin in preparation for a capillary puncture and measuring blood sugar (glucose) levels using synthetic blood and proper equipment and techniques.
- Students will perform the steps for obtaining a culture specimen.
- Students will solve the mathematical problems related to the Medical Laboratory Careers.
- Develop a comparison and contrast chart of the different Medical Laboratory Careers.

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
- X 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
- X Subjective assessment/Informal observations
  - __ Essay tests
  - X Observe students working with partners
  - X Observe students role playing
- X Peer-assessment
  - __ Peer editing and commentary of products/projects/presentations using rubrics
  - X 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:

Obtaining a Culture Skills Exam
Obtaining Capillary Blood/Skin Puncture Skills Exam
Obtaining a Fasting Blood Sugar Skills Exam
Medical Laboratory Quiz
Medical Laboratory Exam

Assessment(s) Description/Directions:

Peer Assessments - Skills Sheets, Compare & Contrast Sheets
Subjective Assessment - Observation of students
Objective Assessment - Written Quiz and Exam

Attachments for Assessment(s):

Medical Laboratory Math Worksheets
3- Skills Exams
Quiz with Key
Exam with Key

LESSON PLANS

Instructional planning: Include lessons, activities and other learning experiences in this section with a brief description of the activities to ensure student acquisition of the knowledge and skills addressed in the standards. Complete the sequence of instruction for each lesson/task in the unit.

Lesson Plan(s): Sequence of Instruction

1. **Identify the Standards. Standards should be posted in the classroom for each lesson.**
2. **Review Essential Questions.**
3. **Identify and review the unit vocabulary.**
4. **Assessment Activity.**

Attachments for Learning Experiences: .

Power Point – Medical Laboratory Careers
Compare & Contrast Med-Lab Careers Graphic Organizer
Key Terms & Abbreviations Work Sheet
Medical Lab Math Conversion Worksheet

Notes & Reflections: May include notes to the teacher, pre-requisite knowledge & skills, suggestions, etc.

CULMINATING PERFORMANCE TASK

Culminating Unit Performance Task Title:

Culminating Unit Performance Task Description/Directions/Differentiated Instruction:

Attachments for Culminating Performance Task: Please list.

UNIT RESOURCES

Web Resources:

www.naacls.org

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	X	Graphic Organizer
	Student Response System	X	Desktop Publishing		Image File(s)
	Web Design Software		Blog		Video
	Animation Software		Wiki		Electronic Game or Puzzle Maker
	Email		Website		