Alabama CTE

Medical Laboratory Science: Middle School

Foundational Standards	1	**Incorporate safety procedures in handling, operating, and maintaining tools and machinery; handling materials; utilizing personal protective equipment; maintaining a safe work area; and handling hazardous materials and forces.** F.1
	2	**Demonstrate effective workplace and employability skills, including communication, awareness of diversity, positive work ethic, problem-solving, time management, and teamwork.** F.2
	3	**Explore the range of careers available in the field and investigate their educational requirements and demonstrate job-seeking skills including resume-writing and interviewing.** F.3
	4	**Advocate and practice safe, legal, responsible, and ethical use of information and technology tools specific to the industry pathway.** F.4
	5	**Participate in a Career and Technical Student Organization (CTSO) to increase knowledge and skills and to enhance leadership and teamwork.** F.5
	6	**Demonstrate effective infection control techniques as defined by the Centers for Disease Control and Prevention (CDC) and The Joint Commission guidelines.** F.6
Laboratory Terminology	1	**Identify and explain common medical terms and abbreviations used in the laboratory setting.** 1
Laboratory Skills	2	**Identify commonly used laboratory equipment and explain how each item is used.** 2 a Perform basic technical skills following laboratory protocol. 2.A b Prepare solutions of defined concentrations. 2.B
Laboratory Math	3	**Perform basic mathematical calculations related to the composition of solutions, weights, and measurements used in the medical laboratory.** 3 a Convert standard weights, measurements, and volumes to metric measurements commonly used in a healthcare setting. 3.A b Express time using the 24-hour time format as it applies to the healthcare industry. 3.B

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Hematology	**4 Identify red blood cells, white blood cells, plasma, and platelets and explain the function of each in maintaining hemostasis.** 4
Immunology	**5 Identify components of the immune system and explain their functions.** 5
Genetics and Cell Biology	**6 Describe key cellular structures and explain their respective functions.** 6 a Describe the structure and function of deoxyribonucleic acid (DNA) and explain its use in DNA fingerprinting and genetic technology. 6.A b Explain the significance of Mendel's work to the development of modern genetics, including the laws of segregation and independent assortment. 6.B c Compare and contrast ionic, hydrogen, covalent, and metallic bonds. 6.C
Microbiology and Parasitology	**7 Differentiate among common microbes, including bacteria, viruses, fungi, and protozoans.** 7 a Explain how microbes cause the development and spread of infectious diseases. 7.A b Explain how the immune system responds when a foreign microbe enters the body. 7.B