

Medical Microbiology 2021-2022

At a Glance - Lamar CISD

Professional Standards/Employability Skills/Technical Skills				
Ongoing Skills Imbedded All Year	<p>MM 1(A) The student will demonstrate verbal and non-verbal communication in a clear, concise, and effective manner. MM 1(B) The student will exhibit the ability to cooperate, contribute, and collaborate as a member of a team. Lab Procedures Ongoing MM 2(A) The student will demonstrate safe practices during laboratory and field investigations. MM 2(B) The student will demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials. MM 3(F) The student will collect and organize qualitative and quantitative data and make measurements with accuracy and precision using tools such as calculators, spreadsheet software, data-collecting probes, computers, standard laboratory glassware, microscopes, various prepared slides, stereoscopes, metric rulers, electronic balances, gel electrophoresis, apparatuses, micropipettors, hand lenses, Celsius thermometers, hot plates, lab notebooks or journals, timing devices, Petri dishes, lab incubators, dissection equipment, meter sticks, and models, diagrams, or samples of biological specimens or structures.</p>			
	Grading Period	Unit Name	Estimated Time Frame	TEKS
Grading Period 1 8/23-10/1 28 Days	Lab Safety and Microscope		8 Days	2A, 2B, 3F, 3I, 3J
	<p>MM 2(A) The student will demonstrate safe practices during laboratory and field investigations. MM 2(B) The student will demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials. MM 3(F) The student will collect and organize qualitative and quantitative data and make measurements with accuracy and precision using tools such as calculators, spreadsheet software, data-collecting probes, computers, standard laboratory glassware, microscopes, various prepared slides, stereoscopes, metric rulers, electronic balances, gel electrophoresis, apparatuses, micropipettors, hand lenses, Celsius thermometers, hot plates, lab notebooks or journals, timing devices, Petri dishes, lab incubators, dissection equipment, meter sticks, and models, diagrams, or samples of biological specimens or structures. MM 3(I) The student will dispose of all biological material in the proper biohazard containers. MM 3(J) The student will employ standard precautions, including proper protective equipment during all laboratory exercises.</p>			
	Scientific Theory		3 Days	3A, 3B, 3C, 3D
	<p>MM 3(A) The student will know the definition of science and understand that it has limitations, as specified in subsection (b)(4) of this section. MM 3(B) The student will know that hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories. MM 3(C) The student will know scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well-established and highly-reliable explanations, but they may be subject to change as new areas of science and new technologies emerge. MM 3(D) The student will distinguish between scientific hypotheses and scientific theories.</p>			
	History of Scientists		7 Days	4F, 5A, FE
	<p>MM 4(F) The student will research and describe the history of science and contributions of scientists. MM 5(A) The student will research and describe the historical development of microbiology as it relates to health care of an individual. MM 7(E) The student will examine reemergence of diseases such as malaria, tuberculosis, and polio.</p>			
	Medical Micro Data		5 Days	3E, 3F, 3G, 3H
	<p>MM 3(E) The student will plan and implement descriptive, comparative, and experimental investigations, including asking questions, formulating testable hypotheses, and selecting equipment and technology. MM 3(F) The student will collect and organize qualitative and quantitative data and make measurements with accuracy and precision using tools such as calculators, spreadsheet software, data-collecting probes, computers, standard laboratory glassware, microscopes, various prepared slides, stereoscopes, metric rulers, electronic balances, gel electrophoresis, apparatuses, micropipettors, hand lenses, Celsius thermometers, hot plates, lab notebooks or journals, timing devices, Petri dishes, lab incubators, dissection equipment, meter sticks, and models, diagrams, or samples of biological specimens or structures. MM 3(G) The student will analyze, evaluate, make inferences, and predict trends from data. MM 3(H) The student will communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports.</p>			
Taxonomy		5 Days	6A, 7B	
<p>MM 6(A) The student will classify microorganisms using a dichotomous key. MM 7(B) The student will categorize diseases caused by bacteria, fungi, viruses, protozoa, rickettsias, arthropods, and helminths.</p>				

Grading Period 2 10/4-11/5 25 Days	Inferences	14 Days	3G, 6A, 7B, 4A, 4B, 4C, 4D, 4E
	MM 3(G) The student will analyze, evaluate, make inferences, and predict trends from data. MM 6(A) The student will classify microorganisms using a dichotomous key. MM 7(B) The student will categorize diseases caused by bacteria, fungi, viruses, protozoa, rickettsias, arthropods, helminths. MM 4(A) The student will in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking. MM 4(B) The student will communicate and apply scientific information extracted from various sources such as accredited scientific journals, institutions of higher learning, current events, news reports, published journal articles, and marketing materials. MM 4(C) The student will draw inferences based on data related to promotional materials for products and services. MM 4(D) The student will evaluate the impact of scientific research on society and the environment. MM 4(E) The student will evaluate models according to their limitations in representing biological objects or events.		
	Microbial Growth	11 Days	6A, 6B
MM 6(A) The student will classify microorganisms using a dichotomous key. MM 6(B) The student will explain the difference between Gram positive and Gram negative bacteria regarding the bacterial cell wall.			
Grading Period 3 11/8-12/17 25 Days	Processes of MicroOrganisms - Microbial	10 Days	6C, 6D
	MM 6(C) The student will identify chemical processes of microorganisms. MM 6(D) The student will recognize the factors required for microbial reproduction and growth.		
	Body Immune Response	10 Days	6E, 6F
	MM 6(E) The student will identify the normal flora microorganisms of the human body. MM 6(F) The student will distinguish between pathogens, opportunistic pathogens, hospital-acquired infections, and colonizing microorganisms.		
Categorize Diseases			
		5 Days	7B,
MM 7(B) The student will categorize diseases caused by bacteria, fungi, viruses, protozoa, rickettsias, arthropods, helminths.			
Grading Period 4 1/4-2/18 33 Days	Specific Immunity & Antibodies	16 Days	7D
	MM 7(D) The student will evaluate the effects of anti-microbial agents such as narrow and broad spectrum Antibiotics.		
	Pathogenic Microbes	17 Days	4A
MM 6(C) The student will identify chemical processes of microorganisms. MM 6(D) The student will recognize the factors required for microbial reproduction and growth. MM 6(F) The student will distinguish between pathogens, opportunistic pathogens, hospital-acquired infections, and colonizing microorganisms.			
Grading Period 5 2/21-4/14 34 Days	Infectious Diseases	5 Days	5B, 7H, 6J
	MM 5(B) The student will research roles, functions, and responsibilities of agencies governing infectious diseases control. MM 7(H) The student will outline the role of the governing agencies in monitoring and establishing guidelines based on the spread of infectious diseases. MM 6(J) The student will explain the role of the sensitivity report provided to the clinician by the microbiology.		
	Infectious Process	7 Days	7A, 7C, 6H
	MM 7(A) The student will outline the infectious process, including how pathogenic microorganisms affect human body systems. MM 7(C) The student will explain the body's immune response and defenses against infection. MM 6(H) The student will interpret Gram stain results.		
	Pathogens	10 Days	7F
MM 7(F) The student will identify common bacterial infections from hospital-acquired infection and community acquired infections such as Clostridium difficile and Staphylococcus aureus.			

	Microbiological Techniques	12 Days	6G, 6I
	MM 6(G) The student will describe the colony morphology of microorganisms MM 6(I) The student will discuss the results of laboratory procedures such as biochemical reactions that are used to identify microorganisms.		
Grading Period 6 4/19-5/26 28 Days	Drug-Resistant MicroOrganisms	5 Days	7G
	MM 7(G) The student will investigate drug-resistant microorganisms such as carbapenem-resistant, Enterobacteriaceae, methicillin-resistant Staphylococcus aureus, vancomycin intermediate/resistant Staphylococci aureus, vancomycin-resistant enterococci, and emergent antibiotic-resistant superbugs.		
	Capstone Lab	5 Days	
	Lab Procedures and Identification	15 Days	6I, 6A
	MM 6(I) The student will discuss the results of laboratory procedures such as biochemical reactions that are used to identify microorganisms. MM 6(A) The student will classify microorganisms using a dichotomous key.		
	Semester Review and Testing	3 Days	