



Republic of the Philippines

Department of Education

DepEd Complex, Meralco Avenue, Pasig City

STRENGTHENED SENIOR HIGH SCHOOL CURRICULUM

BIOLOGY 2

Grade 11

Course Description:

This course provides an understanding of the structure and function of plant and animal tissues, including how specialized cells form tissues, organs, and organ systems that support life. Learners explore different plant and animal tissues and understand their roles in an individual's growth, transport, and survival. This knowledge enables them to analyze how organ systems work together to maintain homeostasis and sustain life. By the end of the course, learners understand how tissues and organ systems function and interact. They apply this knowledge to real-world topics such as health and well-being, environmental sustainability, and food security, developing critical thinking skills to analyze how biological systems adapt to their environments and support the survival of organisms.

Elective: Academic

Prerequisite: Biology 1

Time Allotment: 80 hours for one semester, 4 hours per week

Schedule: Second Semester

Quarter 3: Plants and Animal Tissues

Content	Content Standards <i>The learners learn that</i>	Learning Competencies <i>The learners</i>
1. Plant cells, tissues, organs, and organ systems	1. different types of plant tissue can be identified using a microscope; 2. the distinguishing characteristics of tissues of a plant are significant for the structure and function of the plant; and	1. explain how cell specialization leads to the formation of different tissues, organs, and organ systems that perform specific functions in an organism; 2. use a microscope to distinguish the defining characteristics of simple and complex permanent tissues in plants; 3. construct a table that demonstrates the parts and functions of a plant, including the leaf, xylem, phloem, stem, and root; 4. use information from secondary sources to write a short review on how plant tissues, including xylem and phloem, contribute to improving crop productivity;
2. Animal tissues	3. the structure of animal tissues is critical to the successful functioning of organs and organ systems.	5. use a microscope to compare the animal tissue types relative to their cellular organization and structure; 6. construct a table that describes the characteristics and functions of the four main types of animal tissues: epithelial, connective, muscle, and nervous;

		<p>7. explain the role of animal tissue types that make up major organs (e.g., cardiac muscle in the heart, ciliated epithelium in the respiratory system); and</p> <p>8. use group discussions to prepare a report explaining the significance of maintaining healthy tissues by appropriate lifestyle choices, exercise, and nutrition.</p>
<p>Performance Standards</p> <p><i>By the end of the quarter, learners describe the structure and function of plant and animal tissues by explaining how their various types contribute to growth, transport, support, and overall survival. Through diagrams, experiments, or presentations, learners describe how tissue specialization supports the functionality and adaptability of plants and animals in their environments.</i></p>		
<p>Suggested Performance Tasks</p> <ul style="list-style-type: none"> • Conduct research on how specific plant and animal tissues are adapted to thrive in different environments, focusing on how these adaptations support survival and functionality (e.g., how xylem in plants helps transport water in arid climates or how adipose tissue supports insulation in mammals). • Create a written report or a video presentation comparing and contrasting tissue adaptations in different species. 		

Quarter 4: Organ Systems

Content	Content Standards <i>The learners learn that</i>	Learning Competencies <i>The learners</i>
1. Organ systems	1. organ systems of plants maintain homeostasis; and	<p>1. draw diagrams that explain how the organ systems of plants, including the shoot system and the root system, work together to absorb nutrients and moisture to enable the plant to grow and reproduce;</p> <p>2. explain how the interdependence of plant organ systems contributes to the survival and function of an organism;</p> <p>3. use information from secondary sources to explain the importance of planting and preserving trees based on the importance of their organ systems in combating climate change and enhancing air quality;</p>
	2. organ systems in animals maintain homeostasis	4. create a table that includes animal organ systems, such as nervous, muscular, skeletal, excretory, endocrine, and lymphatic systems, and their functions, and use the

		<p>completed table to explain in a short summary how these systems contribute to the survival and function of the organism;</p> <ol style="list-style-type: none"> 5. explain how organ systems in animals work together to ensure physiological function, including how the circulatory system supports the respiratory system during gas exchange; 6. define homeostasis and explain what it means with examples, including temperature regulation, osmotic balance, and glucose levels, using the major features of feedback loops; and 7. discuss how lifestyle choices affect the proper functioning of organ systems and how long-term effects of chronic diseases (e.g., diabetes, chronic obstructive pulmonary disease) impact overall health and quality of life.
<p>Performance Standards <i>By the end of the quarter, learners explain the similarities and differences in the structures and functions of plant and animal organ systems by explaining how these systems contribute to maintaining homeostasis. Learners construct models, draw comparative diagrams, and/or create presentations to explain the interconnected roles of organ systems in supporting life processes and adapting to environmental challenges.</i></p>		
<p>Suggested Performance Tasks</p> <ul style="list-style-type: none"> ● Construct physical or digital models to represent two organ systems: one from a plant and another from an animal. Make an oral presentation showcasing the models with a detailed explanation of their functions. ● Create a multimedia presentation, such as a video and digital slideshow, explaining the interconnectedness of plant and animal organ systems in supporting life processes and maintaining homeostasis. 		