

Unit 1: From Molecules to Organisms: Structures and Processes

Content Area: **Science**
Course(s):
Time Period: **Full Year**
Length: **Full Year**
Status: **Published**

Unit Overview

In this unit of study, students develop an understanding that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. The crosscutting concepts of systems and system models are called out as organizing concepts for this disciplinary core idea. Students are expected to demonstrate grade-appropriate proficiency in engaging in argument from evidence. Students are also expected to use this practice to demonstrate understanding of the core idea. In this unit of study, students are also expected to develop an understanding that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. By developing a model, they describe that an object can be seen when light reflected from its surface enters the eye. The crosscutting concepts of cause and effect, systems and system models, and structure and function are called out as organizing concepts for these disciplinary core ideas. Students are expected to demonstrate grade-appropriate proficiency in developing and using models. Students are expected to use these practices to demonstrate understanding of the core ideas.

Enduring Understandings

Students are expected to identify the different parts of plants and the functions of these parts.
Students are expected to explain how plants grow and reproduce.
Students are expected to identify how external animal structures serve functions in growth, survival, behavior, and reproduction.
Students are expected to provide evidence that animals have internal parts with many functions.
Students are expected to construct an argument that animals have internal structures to support survival and behavior

Essential Questions

What are some plant parts and how do they function?
How do plants grow and reproduce?
What are some external structures of animals?
What are some internal structures of animals?
How do the sense work?

Learning Objectives

Plants and animals have both internal and external structures that serve various functions in growth, survival,

behavior, and reproduction.

Different sense receptors are specialized for particular kinds of information, which may be then processed by the animal's brain. Animals are able to use their perceptions and memories to guide their actions.

Standards: Content

SCI.3-5-ETS1-1	Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
SCI.4-LS1-1	Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.
SCI.4-LS1-2	Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.

Standards: Interdisciplinary

Assessment Evidence

Formative	Teacher observations, Class discussions, Lab Activities, Key concepts and vocabulary quizzes, Science Starter's/Do Nows, Open Ended Responses, Modeling, Simulations, Innovators Monthly Research, Lab Activities, Vocabulary Responses, Exit Questions, Interactive Digital Assessments embedded in Exploring Science Digital Book
Summative	Projects, Tests, Quizzes, lab skills demonstrations, projects, and vocabulary quizzes.
Alternative & Benchmark	Alternative - Read to the student and chart oral responses. Word banks, sentence frames, oral responses, graphic organizers, observations, portfolios of student work, orally administered assessments, and anecdotal notes. Benchmark – LinkIt Benchmark Assessment, Teacher Generated Assessments
<u>Assessment Evidence Resource</u>	

Instructional Resources

Smartboard, Computers, Websites and digital interactives/models, Multi-media presentations, Video Streaming, Brain Pop, Middle School Science, Generation Genius Digital Curriculum, Mystery Science Digital Curriculum, Amplify Digital Curriculum, Microsoft 365, Primary and Secondary Source Documents, Assorted lab materials

Curricular Mandates

Below are the curricular requirements as defined in NJ Administrative Code and Statute

Amistad	Diversity, Equity, and Inclusion
Holocaust	LGBT and Disabilities (Grades 6-12)
Climate Change	Asian American & Pacific Islander

Social Emotional Learning (SEL) Competencies

[NJ Social and Emotional Learning Competencies & Sub-Competencies](#)

X	Self-Awareness		Relationship Skills
	Responsible Decision-Making	X	Social Awareness
	Self-Management		

21st Century Skills & Themes

X	Global and Cultural Awareness	Technology Literacy	Planning and Budgeting
X	Creativity and Innovation	Financial Institutions	Risk Management and Insurance
X	Information and Media Literacy	Digital Citizenship	Economic and Government Influences
X	Critical Thinking and Problem Solving	Credit Profile	Career Awareness and Planning
	Civic Financial Responsibility	Financial Psychology	

