

Barrington
School District

Haddon Heights
School District

Lawnside
School District

Merchantville
School District



Course Name: Science
Grade: Fourth Grade
Board Approved:

*All curriculum is aligned with the NJSLs in accordance with the Department's curriculum implementation timeline and includes all required components (NJ.A.C.6A:8).

**Resource and activity lists are compiled from all four districts and may not necessarily be reflected in each district or school.

Introduction

New Jersey Student Learning Standards for Science

Michael Heinz, Coordinator

Science, engineering, and technology influence and permeate every aspect of modern life. Some knowledge of science and engineering is required to engage with the major public policy issues of today as well as to make informed everyday decisions, such as selecting among alternative medical treatments or determining how to invest public funds for water supply options. In addition, understanding science and the extraordinary insights it has produced can be meaningful and relevant on a personal level, opening new worlds to explore and offering lifelong opportunities for enriching people's lives. In these contexts, learning science is important for everyone, even those who eventually choose careers in fields other than science or engineering.

Mission: Scientifically literate individuals possess the knowledge and understanding of scientific concepts and processes required for personal decision-making, participation in civic and cultural affairs, and economic productivity.

Vision: The science standards are designed to help realize a vision for education in the sciences and engineering in which students, over multiple years of school, actively engage in scientific and engineering practices and apply crosscutting concepts to deepen their understanding of the core ideas in these fields. The learning experiences provided for students should engage them with fundamental questions about the world and with how scientists have investigated and found answers to those questions. Throughout grades K-12, students should have the opportunity to carry out scientific investigations and engineering design projects related to the disciplinary core ideas (pp. 8-9, NRC, 2012).

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STANDARD: 4-LS1- From Molecules to Organisms: Structures and Processes		
Unit 3: Structures and Functions		
ESTABLISHED GOALS (INDICATOR #)	TRANSFER (How will this apply to their lives?)	
4-LS1-1 - Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.	Students will be able to independently use their knowledge to...	
	<ul style="list-style-type: none"> Describe the internal and external structures of a plant or animal and the function of each of those structures. 	
	MEANING	
	UNDERSTANDINGS:	ESSENTIAL QUESTIONS:
	<ul style="list-style-type: none"> A system can be described in terms of its components and their interactions. Plants and animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction. 	<ul style="list-style-type: none"> How do internal and external parts of plants and animals help them to survive, grow, behave, and reproduce?
Unit 3: Grade 4 - Lessons		
<p>In this unit of study, students spend time observing plants and animals in order to gather evidence that organisms are living systems. A system is made up of structures and processes that interact and enable the system to function. Every plant and animal can be described in terms of its internal and external structures and their interactions, and these structures each have specific functions that support survival, growth, behavior, and reproduction for the organism.</p> <p>Using a variety of plants and animals as examples, students need multiple opportunities to:</p> <ul style="list-style-type: none"> ✓ Describe the internal and external structures of a plant or animal and the function of each of those structures. Description should explain how each structure serves various functions in growth, survival, behavior, and/or reproduction. <i>(Note: This is limited to macroscopic structures within plant and animal systems, and could include such structures as thorns, stems, roots, and colored petals for plants, and heart, stomach, lung, brain, and skin for animals.)</i> ✓ Describe the interactions that occur among the structures within the plant or animal system. <p>As students observe the structures of an animal or plant, explain the function of each, and describe how these structures help the animal grow, survive, and/or reproduce, they should use evidence from their observations to support their explanations.</p> <p>Human Body Unit:</p> <ul style="list-style-type: none"> • Jigsaw Activity: Students are grouped to research different systems of the human body (respiratory, digestive, cardiovascular, nervous, muscular, and skeletal) <ul style="list-style-type: none"> ○ Brainpop videos: Human Body, Digestive System, Circulatory System, Immune System ○ Super Teacher: Worksheet Links 		

Mystery Science Suggested Lessons:

[Human Machine: Human Body, Senses and the Brain](#)

Unit Starter: System Models- [Owl Ambush](#)

Mystery 1: Muscles and Skeleton: [Why do your biceps bulge?](#)

Mystery 2: Eyes and Vision: [What do people who are blind see?](#)

Mystery 3: How Eyes Work: [How can some animals see in the dark?](#)

Mystery 4: Brain and Nerves: [How does your brain control your body?](#)

Better Lesson Suggested Units:

- [Daffodil Project 1](#) SWBAT identify specialized parts of a plant that help it survive. (We would need to prepare materials for these ongoing lessons)
- [Dissecting Daffodils](#) Students observe the external and internal parts of a plant and flower to understand how this plant survives and reproduces.
- [Writing About Daffodils](#) Students will be able to apply knowledge about specialized external parts of plants.

Optional Lesson:

- [Animal Mouth Structure Lesson](#) SWBAT Understand that living things have features that enable them to meet their needs. SWBAT Understand that specialized mouth structures enable animals to eat certain types of foods.

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting concepts
Engaging in Argument from Evidence <ul style="list-style-type: none"> ● Construct an argument with evidence, data, and/or a model. (4-LS1-1) 	LS1.A: Structure and Function <ul style="list-style-type: none"> ● Plants and animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction. (4-LS1-1) 	Systems and System Models <ul style="list-style-type: none"> ● A system can be described in terms of its components and their interactions. (4-LS1-1)
District/School Formative Assessment Plan	District/School Summative Assessment Plan	
Students who understand the concepts are able to: <ul style="list-style-type: none"> ● Describe a system in terms of its components and their interactions. ● Construct an argument with evidence, data, and/or a model. ● Construct an argument to support the claim that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. <i>(Assessment is limited to macroscopic structures within plant and animal systems.)</i> Examples of structures could include: 	Summative assessment is an opportunity for students to demonstrate mastery of the skills taught during a particular unit. Mystery Science Assessments: <i>(all resources are accessible on google drive)</i> Human Machine: Human Body, Senses and the Brain	

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- ✓ Thorns
- ✓ Stems
- ✓ Roots
- ✓ Colored petals
- ✓ Heart
- ✓ Stomach
- ✓ Lung
- ✓ Brain
- ✓ Skin

Human Machine: Human Body, Senses and the Brain:

[Mystery 1: Muscles and Skeleton](#)

[Mystery 2: Eyes and Vision](#)

[Mystery 3: How Eyes Work](#)

[Mystery 4: Brain and Nerves](#)

Alternative Assessments

Evaluative Criteria

Assessment Evidence

Suggested Performance Rubric: Use the following or similar rubric to evaluate students' performance on lesson assessments:

Suggested Performance Tasks include but are not limited to:

Performance Task: Mystery Science- System Modeling and Explanation: [How are animals bodies like a machine?](#)

Resources for Performance Task:

- [Animal System Model](#)
- [Final Project- Animal Systems Rubric](#)

4 - Innovating:	Advanced understanding and application of the standard
3 - Applying:	Consistently applies skills independently
2 - Developing:	Progressing towards independent application of skills
1 - Beginning:	Early stages of development, need assistance

District/School Texts

District/School Supplementary Resources

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Haddon Heights - Unit Kits for Science Labs and References Lawnside - Houghton Mifflin Harcourt : Science Fusion Merchantville- Exploring Science (National Geographic Learning)		-Scholastic News -Brain POP -NewsELA -Read Works
Interdisciplinary Connections		
ELA Write opinion pieces on topics or texts, supporting a point of view with reasons and information. (4-LS1-1) W.4.1	Math Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded across the line into matching parts. Identify line-symmetric figures and draw lines of symmetry. (4-LS1-1) 4.G.A.3	21st Century Skills/Career Education CRP2. Apply appropriate academic and technical skills. CRP4. Communicate clearly and effectively and with reason CRP11. Use technology to enhance productivity.
Technology 8.2.2.A.3 - Identify a system and the components that work together to accomplish its purpose.		
Modifications and Accommodations		
Special Education Students Small group Direct instruction restate/rephrase graphic organizers modified assignments chunking leveled text intentional grouping read text extended time breaks Teacher records/ student dictates	English Language Learners Labels word banks visuals student friendly definitions extended time chunking intentional grouping	Students at Risk of School Failure leveled text graphic organizers modified assignments kinesthetic activities restate/rephrase chunking intentional grouping
Gifted and Talented extension project leveled text leadership roles intentional grouping	Students with 504 Plans breaks chunking preferential seating visual reminders	

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Targeted learning from assessment	restate/rephrase check-in/check-out system visual time Teacher records/ student dictates	
Unit Duration: 10 days		