Grade 3 Science Course Overview

Content Area: **Science**
Course(s): **SCIENCE-3**
Time Period:
Length: **Year**
Status: **Published**

Cover

EAST BRUNSWICK PUBLIC SCHOOLS

East Brunswick New Jersey

Superintendent of Schools

Dr. Victor P. Valeski

Science

Science Grade 3

Course Number: 4103

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Course Adoption: 4/21/1986

Curriculum Adoption: 5/9/1991

Date of Last Revision Adoption: 9/1/2017

Course Overview

The K-12 science curriculum in all schools in New Jersey must be aligned with the Core Curriculum Content Standards. These standards focus on the processes of science as well as content in three major areas: earth, life and physical science. Each of these areas of science needs to be addressed at every grade level in order to foster a strong science knowledge base for students as well as an appreciation and understanding of how science works to help people solve problems.

One of the strong points of the East Brunswick Schools' science curriculum is the emphasis on hands-on investigations of the natural world. Our science program emphasizes doing science, not reading about it in a book. The third grade science curriculum consists of three modules that were selected from two nationally-recognized programs – ***Full Option Science System (FOSS)*** and ***Science and Technology for Children (STC)***. The earth science unit is ***Rocks and Minerals (STC)*** which introduces students to the basic components of earth's composition. The life science unit is ***Structures of Life (FOSS)*** which examines the observable properties of plants and animals. The physical science unit is ***Magnetism and Electricity (FOSS)*** which allows students to interact with magnets to see how they work as well as explore the design and operation of electric circuits.

Textbooks and other resources

Delta FOSS Magnetism & Electricity, 2nd Edition, Copyright 2005

Delta FOSS Structures of Life, 2nd Edition, Copyright 2005

Delta FOSS Soils rocks & Landforms, Next Generation, Copyright 2016

Standards

CRP.K-12.CRP4	Communicate clearly and effectively and with reason.
SCI.3-5-ETS1-2	Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
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.3-5-ETS1-3	Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.
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.3-ESS3-1	Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.
SCI.3-ESS2-1	Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.
SCI.3-ESS2-2	Obtain and combine information to describe climates in different regions of the world.
SCI.3-LS1-1	Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.
SCI.3-LS2-1	Construct an argument that some animals form groups that help members survive.
SCI.3-LS3-2	Use evidence to support the explanation that traits can be influenced by the environment.
SCI.3-LS3-1	Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.
SCI.3-LS4-3	Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.
SCI.3-LS4-2	Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.
SCI.3-LS4-1	Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago.
SCI.3-LS4-4	Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.
SCI.3-PS2-3	Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other.
SCI.3-PS2-4	Define a simple design problem that can be solved by applying scientific ideas about magnets.
TECH.8.1.5.C.CS2	Communicate information and ideas to multiple audiences using a variety of media and formats.
TECH.8.1.5.E.CS1	Plan strategies to guide inquiry.
TECH.8.1.5.F.CS1	Identify and define authentic problems and significant questions for investigation.

Grade 3 Science Planning Guide

SCIENCE 3 CURRICULUM			
Instructional Objectives	**Instructional Activities/Methods/Assignments**	**Materials/Resources**	**Formative Assessme**
Magnetism & Electricity **Investigation 1: The**	**Magnetism & Electricity** **Investigation 1: The Force**	**Magnetism & Electricity** **Investigation 1: The Force**	**Magnetisn** **Investigatic**

Force The students will be able to: 1. Understand that magnets stick to iron and steel, and attract and repel one another. 2. Recognize that the magnetic force causes magnetic interactions. 3. Understand the magnetic force of attraction between two magnets decreases with	- - - - **Part 1** ● Play "Describe the Object." ● Introduce the term *magnet*. ● Students explore test objects to find items that attract to a magnet, sort, and discuss. Record results on Part 1. ● Students explore classroom to find items that attract to a magnet and discuss iron and steel. Record results on Part 2. **Magnetism & Electricity** **Investigation 1: The Force, cont'd.** **Part 1, cont'd.** ● Explore magnetic interactions. ● Introduce *attract* and *repel*, and discuss magnets on a pencil to introduce *force*.	See materials list (page 8). FOSS Science Stories "Magnus Gets Stuck" pages 1-4. www.brainpop.com "Magnetism" **Magnetism & Electricity** **Investigation 1: The Force, cont'd.** See materials list (page 18). FOSS Science Stories "Magnificent Magnetic	Ongoing Assess (optional) Science Notebo **Magnetism &** **Investigatio c** Ongoing Assess (optional)

distance. 4. Understand magnetism can be induced in a piece of steel that is close to, or touching a magnet. **Magnetism & Electricity** **Investigation 1: The Force, cont'd.** 5. Use scientific thinking processes to conduct investigations and build explanations: observing, communicating, comparing, and organizing.	Complete Part 3 or Journal page 4. **<u>Part 2</u>** - ● Recall and discuss key vocabulary and concepts from previous lesson. ● Distribute test objects and explore magnetism, and share discoveries. **Magnetism & Electricity** **Investigation 1: The Force, cont'd.** **<u>Part 2, cont'd.</u>** ● Introduce *induced magnetism*. ● Complete Response Sheet.	Models" page 5. **Magnetism & Electricity** **Investigation 1: The Force, cont'd.** See materials list (page 18). <u>FOSS Science Stories</u> "Magnificent Magnetic Models" page 5.	Science Notebo Response Sheet **Magnetism** **Investigatio c** Ongoing Assess (optional) Science Notebo Response Sheet

Magnetism & Electricity **Investigation 1: The Force, cont'd.**	- **Magnetism & Electricity** **Investigation 1: The Force, cont'd.** **<u>Part 3</u>** ● Introduce the force investigation by discussing magnetic attraction. ● Set up measuring process, and set a standard for using the balance. ● Investigate the force of attraction using this technique and discuss. ● Review "Breaking the Force" procedure and challenge students to follow procedure and discuss. ● Conduct same experiment with spacers and record results on class data chart and graph and make predictions. **Magnetism & Electricity**	**Magnetism & Electricity** **Investigation 1: The Force, cont'd.** See materials list (page 23).	**Magnetisn** **Investigatio c** Ongoing Assess (optional) (F) Science Notebo
5. Use scientific thinking processes to conduct investigations and build explanations: observing, communicating, comparing, and organizing.			

	Investigation 1: The Force, cont'd.	**Magnetism & Electricity** **Investigation 1: The Force, cont'd.**	**Magnetisn** **Investigatio c**
Magnetism & Electricity **Investigation 1: The Force, cont'd.** 5. Use scientific thinking processes to conduct investigations and build explanations: observing, communicating, comparing, and organizing.	**<u>Part 4</u>** ● Review magnet characteristics. ● Introduce magnet detection challenge, and set up experiment. ● Play Magnet-Detecting Games and discuss. ● Read "How Magnets Interact and Make a Compass." **Investigation 2: Making Connections** **<u>Part 1</u>** ● Pre-assess student ideas about current flow.	See materials list (page 30). <u>FOSS Science Stories</u> "How Magnets Interact and Make a Compass." **Investigation 2: Making Connections**	Ongoing Assess (optional) (F) Science Notebo **Investigation 2 Making Conne**

Investigation 2: **Making Connections** The students will be able to: 1. Understand a circuit as a pathway through which electric current flows. 2. Recognize a closed circuit allows electricity to flow and an open circuit does not.	●Introduce the D- cell and light bulb and design an experiment to make the bulb light. ● Introduce *electricity receiver, circuit, &components*. ● Make a one-wire circuit. ● Introduce *filament*. ● Study and discuss bulb circuits. **Investigation 2:** **Making Connections, cont'd.** **<u>Part 2</u>** ● Review vocabulary from previous lesson. ● Experiment with motors and discuss. ● Explore circuits and switches. ● Introduce *closed circuits* and *open*	See materials list (page 8) **Investigation 2:** **Making Connections, cont'd.** See materials list (page 14)	Ongoing Asses (optional) (F) Science Notebo **Investigation 2** **Making Conne** Ongoing Asses (optional) (F) Science Notebo
Investigation 2: **Making Connections, cont'd.**			

	circuits.		
3. Understand conductors are materials that allow the flow of electricity; insulators are materials that do not allow the flow of electricity.	● Investigate switches and bulbs, and compare circuits.	Optional: Read Switch on, Switch Off by Melvin Berger	
	● Introduce and make schematic diagrams		
4. Recognize a switch is a device that opens and closes a circuit.	● Complete Response Sheet – Bulbs		Response Sheet
	Investigation 2: **Making Connections, cont'd.**		
	-	**Investigation 2:** **Making Connections, cont'd.**	**Investigation 2** **Making Conne**
	- **Part 3**		
	● Propose in investigation to find test objects that complete a circuit.		
Investigation 2: **Making Connections, cont'd.**	● Allow exploration and perform test using a nail and straw.	See materials list (page 20)	Ongoing Asses (optional) (F)
	● Introduce and sort *conductors* and *insulators*.	FOSS Science Stories "Making Static," and "A Fictional Interview with Benjamin Franklin?"	Science Notebo
3. Understand conductors are materials that allow the flow of electricity; insulators are materials that do not allow the	● Make conductor detector and go on a conductor hunt. Record results on Notebook.		Science Notebo

flow of electricity. 4. Recognize a switch is a device that opens and closes a circuit.	● Read "Making Static," and "A Fictional Interview with Benjamin Franklin?"		
	Investigation 2: **Making Connections, cont'd.**	**Investigation 2:** **Making Connections, cont'd.**	**Investigation 2** **Making Conne**
	<u>Part 4</u> ● Establish stations for individual and collaborative assessments.		
Investigation 2: **Making Connections, cont'd.**	● Complete Mystery Circuits, and Making Connections. ● "Two References About Edison."	See materials list (page 26) <u>FOSS Science Stories</u> "Two References About Edison."	Ongoing Assess (optional) (F) Science Notebo
3. Understand conductors are materials that allow the flow of electricity; insulators are materials that do not allow the flow of electricity. 4. Recognize a switch is a device that opens and closes a circuit.			Science Notebo Circuits (F), an Connections (S
	Investigation 3: Advanced Connections		

		Investigation 3: Advanced Connections	**Investigation 3 Connections**
	Part 1		
	● Review circuit basics.		
Investigation 3: Advanced Connections	● Propose a two-bulb circuit design, and have students draw and set up a 2-bulb circuit.	See materials list (page 10)	Ongoing Assess (optional) (F)
	● Introduce *series circuit*. Generate explanations for dim lights, and propose solutions for the problem.	Foss Science Stories "Illuminating Teamwork: A Story of the Edison Pioneers?"	Science Notebo
			Science Notebo Connections (S
The Students will be able to:	● Explore 2 cells in a series and record successful series.		
1. Understand an electric circuit is a pathway along which electricity flows.	● Read "Illuminating Teamwork: A Story of the Edison Pioneers?"		
2. Recognize that a circuit with only one pathway for current flow is a series circuit.			
	Investigation 3: Advanced Connections, cont'd.	**Investigation 3: Advanced Connections, cont'd.**	
	Part 2		**Investigation 3 Connections, c**

	● Review series circuit.	See materials list (page 16)	
Investigation 3: Advanced Connections, cont'd. 3. Understand that a circuit that splits into 2 or more pathways is a parallel circuit. 4. Use scientific thinking processes to conduct investigations and build explanations: observing, communicating, comparing, and organizing.	● Introduce a new 2-bulb challenge, build circuits, and share results. • Introduce *parallel circuit* and draw a diagram. • Generate a class list of questions for complex circuits and explore those circuits. • Complete Response Sheet – Circuit Design • Read "True Pioneer: Lewis Latimer." **Investigation 3: Advanced Connections, cont'd.** **Part 3** - ● Set the scene by reading scenario on T.G. page 24.	Foss Science Stories "True Pioneer: Lewis Latimer." United Streaming: "Magic School Bus Gets Charged." www.brainpop.com "Electric circuits" **Investigation 3: Advanced Connections, cont'd.** See materials list (page 22)	Ongoing Asses (optional) (F) Science Notebo Response Sheet (S) **Investigation 3 Connections, c**

Investigation 3: Advanced Connections, cont'd. 3. Understand that a circuit that splits into 2 or more pathways is a parallel circuit. 4. Use scientific thinking processes to conduct investigations and build explanations: observing, communicating, comparing, and organizing.	● Test circuit designs and discuss pros and cons of parallel and series circuits. ● Build long strings of lights and demonstrate what happens if one light goes out. ● Write a recommendation to the Board for a new light design. **Investigation 4: Current Attractions** **<u>Part 1</u>** ● Propose making a magnet that turns on and off, and review magnetic interactions. ● Guide students through magnet challenge and share the designs. ● Introduce *electromagnet. coil, core* Decide which design is the best one, set standards and try them. ● Read "From Rags to Science: A Story of Michael Faraday."	**Investigation 4: Current Attractions** See materials list (page 8) <u>www.brainpop.com</u> "Electromagnets" <u>Foss Science Stories</u> "From Rags to Science: A Story of Michael Faraday."	Ongoing Assess (optional) (F) Science Notebo Written recomn Board for a new **Investigation 4 Attractions** Ongoing Assess (optional) (F) Exit Card – Sel Content/Inquiry

The Students will be able to: 1. Understand electromagnetism is magnetism created by current flowing through a conductor. 2. Recognize that electromagnets can be turned on and off. **Investigation 4: Current Attractions, cont'd.** 3. Understand the strength of the magnetism produced by an electromagnet can be varied. 4. Use scientific thinking processes to conduct investigations	- - - - **Investigation 4: Current Attractions, cont'd.** - - - - **<u>Part 2</u>** ● Review electromagnet questions. ● Plan and complete Number of Winds Investigation, and share results. ● Graph results. ● Complete Response Sheet – Reverse Switch ● Read "How Electromagnetism Stopped a War." **Investigation 4: Current Attractions, cont'd.**	**Investigation 4: Current Attractions, cont'd.** See materials list (page 14) <u>Foss Science Stories</u> "How Electromagnetism Stopped a War." **Investigation 4: Current Attractions, cont'd.**	**Investigation 4 Attractions, co** Ongoing Asses (optional) (F) Graph (F) Response Sheet (S)

and build explanations: observing, communicating, comparing, and organizing. **Investigation 4: Current Attractions, cont'd.** 3. Understand the strength of the magnetism produced by an electromagnet can be varied. 4. Use scientific thinking processes to conduct investigations and build explanations: observing, communicating, comparing, and organizing.	**Part 3** ● Review electromagnet questions, and add to the list of questions to investigate. ● Plan investigations, complete them, and discuss. ● Complete Electromagnet Investigation Sheet. ● Read "Magnets and Electricity in Your Life." **Investigation 5: Click It** **Part 1** ● Set historical scene and propose the telegraph challenge. ● Assemble telegraph and see if they work. Share successes.	See materials list (page 19) Foss Science Stories "Magnets and Electricity in Your Life." **Investigation 5: Click It** See materials list (page 8) Optional: Read Radio Rescue Lynne Barasch	**Investigation 4 Attractions, co** Ongoing Assess (optional) (F) Electromagnet I (S) **Investigation 5**

	● Invent a code, propose the stream code, and send messages. ● Respond on S-T-R-E-A- M Code.		Ongoing Asses (optional) (F) S-T-R-E-A-M C
Investigation 5: Click It The Students will be able to: 1. Understand science and technology are closely related. 2. Recognize a circuit as a pathway through which electric current flows. 3. Understand electromagnetism is magnetism created by current flowing through a conductor.	**<u>Part 2</u>** ● Review the telegraph. ● Lengthen the lines of communication. **Investigation 5: Click It, cont'd.** **<u>Part 2 cont'd.</u>** ● Introduce the telegraph lines, and begin engineering. ● Complete Long-Distance Telegraph. ● Develop procedural codes and discuss the telegraphs.	**Investigation 5: Click It, cont'd.** See materials list (page 15) <u>FOSS Science Stories</u> "Morse Gets Clicking: A Story of Samuel Morse."	**Investigation 5** Ongoing Asses (optional) (F)

Investigation 5: Click It, cont'd. 4. Use scientific thinking processes to conduct investigations and build explanations: observing, communicating, comparing, and organizing. **Unit 3: Structures of Life**	● Read "Morse Gets Clicking: A Story of Samuel Morse." **<u>Part 3</u>** **Optional Project T.G. pages 21-27** **OR** **End of the Module Assessment** **Unit 3:** **Structures of Life** **Investigation 1: Origin of Seeds** **<u>Part 1</u>** **Teacher must purchase 4-6 different fruits. ● Observe and discuss a fruit. Introduce *property*. ● Discuss bean pods as fruits, and identify properties of the seeds. ● Count and graph the seeds in the pod and complete comparison sheet.	**Unit 3:** **Structures of Life** **Investigation 1: Origin of Seeds** See materials list (page 8) <u>FOSS Science Stories</u> "Seeds Are Everywhere." www.brainpop.com "Seed Plants" United Streaming: "The Magic School Bus Gets Planted"	Long-Distance **U** **Structu** **Investigation 1** Ongoing Assess (optional) (F) Comparing See (F)

Investigation 1: Origin of Seeds The students will be able to: 1. Identify that seeds are living organisms that re found in the part of the plant called the fruit. 2. Understand that different fruits have different amounts of seeds. **Unit 3:** **Structures of Life** **Investigation 1: Origin of Seeds**	● Introduce *estimate* and explore other fruits and search for seeds. **Unit 3:** **Structures of Life** **Investigation 1: Origin of Seeds** **Part 1, cont'd.** ● Sort and save seeds (extension activity) ● Read "Seeds are Everywhere." **Part 2** ● Introduce seeds and discuss properties. ● Present the Seedy Challenge. **Unit 3:** **Structures of Life**	**Unit 3:** **Structures of Life** **Investigation 1: Origin of Seeds** See materials list (page 8) FOSS Science Stories "Seeds Are Everywhere." www.brainpop.com "Seed Plants" United Streaming: "The Magic School Bus Gets Planted" **Unit 3:**	**U** **Structu** **Investigation 1** Ongoing Assess (optional) (F) Response Sheet (S)

		Structures of Life	
3. Identify properties of seeds, and changes that seeds undergo. 4. Recognize that seeds store food and provide protection for the young plant. **Unit 3:** **Structures of Life** **Investigation 1: Origin of Seeds**	**Investigation 1: Origin of Seeds, cont'd.** **Part 2, cont'd.** ● Introduce The Sprouting Seed Student Sheets and distribute mini sprouters. ● Set up placemat and establish routine for seed care. ● Introduce class sprouter with labeled trays, and place seeds and water. ● Record changes over 6 days on The Sprouting Seed. ● Complete Response Sheet – Origin of Seeds ● Read "The Most Important Seed."	**Investigation 1: Origin of Seeds, cont'd.** See materials list (page 18) FOSS Science Stories "The Most Important Seed."	**U** **Struct** **Investigation 1 cont'd.** Ongoing Asses (optional) (F) Response Sheet (S)
	Unit 3: **Structures of Life**	**Unit 3:** **Structures of Life**	
3. Identify properties of seeds, and changes that seeds undergo.	**Investigation 1: Origin of Seeds, cont'd.**	**Investigation 1: Origin of Seeds, cont'd.**	

4. Recognize that seeds store food and provide protection for the young plant.	**Part 3** ● Observe and discuss changes to the seeds. ● Pose questions to guide investigation to determine how much water the seeds are holding. ● Confirm that students will need to compare the weights of dry and soaked seeds. ● Devise a standard technique for weighing seeds using a balance and weigh dry seeds ONLY and share results. Record the mass on The Sprouting Seed.	See materials list (page 28) FOSS Science Stories "Barbara McClintock"	**U** **Structu** **Investigation 1 cont'd.** Ongoing Assess (optional) (F) The Sprouting S
Unit 3: **Structures of Life** **Investigation 1: Origin of Seeds, cont'd.**	**Unit 3:** **Structures of Life**	**Unit 3:** **Structures of Life** **Investigation 1: Origin of Seeds, cont'd.**	
3. Identify properties of seeds, and changes that seeds undergo. 4. Recognize that seeds store food and provide protection for the young plant	**Investigation 1: Origin of Seeds, cont'd.** **Part 3, cont'd.** ● Add water and store for next session.	See materials list (page 28) FOSS Science Stories	**U** **Structu**

	Day 2 ● Drain seeds and discuss changes. ● Weigh soaked seeds and share results. ● Open the Lima Bean and identify the seed parts (*seed coat, embryo, codyledons)*. ●Read "Barbara McClintock" **Investigation 2: Growing Further**	"Barbara McClintock **Investigation 2: Growing Further** See materials list (page 8) Comparing Germinating Seeds	**Investigation 1 cont'd.** Ongoing Assess (optional) (F) Investigation 1 questions from **Assessment #9** **Investigation 2 Further**
Unit 3: **Structures of Life** **Investigation 1: Origin of Seeds, cont'd.** 3. Identify properties of seeds, and changes that seeds undergo. 4. Recognize that seeds store food and provide protection for the young plant	**<u>Part 1</u>** ● Observe and compare bean seedlings to dry seeds. ● Introduce *germination* and record the properties of germinated seeds on Comparing Germinating Seeds. ● Select one structure and compare that structure in the various germinated seeds.		

Investigation 2: Growing Further The students will be able to: 1. Understand that germination is the onset of a seed's growth. 2. Recognize that plants need water, light, and nutrients to grow.	**Investigation 2: Growing Further, cont'd.** **Part 2** ● Discuss *hydroponics* as a method of growing plants without soil. ● Add nutrients and place seedlings into holders. ● Complete Response Sheet – Growing Further ● Read "Hydro-growing."	**Investigation 2: Growing Further, cont'd.** See materials list (page 14) Response Sheet – Growing Further <u>FOSS Science Stories</u> "Hydro-growing."	Ongoing Assess (optional) (F) Comparing Ger **Investigation 2 Further, cont'**
Investigation 2: Growing Further, cont'd.			Ongoing Assess (optional) (F) Response Sheet

			(F) Exit Card: Sele Content/Inquiry
3. Identify hydroponics as a technique of growing plants in water. 4. Understand that the life cycle is the process of a seed growing into a mature plant, which in turn produces seeds.	**Investigation 2: Growing Further, cont'd.** - - **<u>Part 3</u>** **Ongoing observations** ● Introduce the plant life cycle, and Bean Life Cycle Worksheet. ● Establish care routine for hydroponic plants, observe growth and record. ● Read "Seeding Space."	**Investigation 2: Growing Further, cont'd.** See materials list (page 18) <u>FOSS Science Stories</u> "Seeding Space."	**Investigation 2 Further, cont'**
Investigation 2: Growing Further, cont'd.		**Investigation 3: Meet The**	Ongoing Assess (optional) (F) Investigation 2 **End of Module** (S)

		Crayfish	
3. Identify hydroponics as a technique of growing plants in water.	**Investigation 3: Meet The Crayfish**		
4. Understand that the life cycle is the process of a seed growing into a mature plant, which in turn produces seeds.	**<u>Part 1</u>** **-** ● Introduce the crayfish and demonstrate proper handling. *(organisms, structures, crustaceans)* ● Observe crayfish structures and ask questions to focus observations. Label crayfish diagram (*antenna, pincer, eye mouth walking leg carapace, swimmeret, egg pore*) ● Discuss observations, and find differences among crayfish.	See materials list (page 8) Crayfish Structures Crayfish Diagram	**Investigation 3 Crayfish**
Investigation 3: Meet The Crayfish		**Investigation 3: Meet The Crayfish, cont'd.**	Ongoing Assess (optional) (F) Crayfish Structu
The students will be able to:	**Investigation 3: Meet The Crayfish, cont'd.** **-**	See materials list (page 16)	Crayfish Diagra

1. Understand crayfish have observable structures and require clean, cool water, food, and space. 2. Define and describe animal behaviors. 3. Investigate the territoriality of crayfish. **Investigation 3: Meet The Crayfish, cont'd.** The students will be able to: 1. Understand crayfish have observable structures and require clean, cool water, food, and space. 2. Define and describe	**<u>Part 2</u>** ● Plan for crayfish housing, and discuss organism's survival needs. ● Introduce crayfish habitat and discuss crayfish care including feeding. (*elodea)* ● Introduce crayfish observation log and create home trays. **Investigation 3: Meet The Crayfish, cont'd.** **<u>Part 3</u>** ● Define *behavior*. Observe crayfish behavior and record on Crayfish Behavior Sheet. Discuss.	<u>FOSS Science Stories</u> "Answering Kids' Questions: Crayfish, Crawfish, Crawdaddy." Observation Log **Investigation 3: Meet The Crayfish, cont'd.** See materials list (page 20) Crayfish Behavior Sheet.	**Investigation 3 Crayfish, cont** Ongoing Asses (optional) (F) Response Journ of the crayfish l it. (S)

animal behaviors. 3. Investigate the territoriality of crayfish. **Investigation 3: Meet The Crayfish, cont'd.** The students will be able to: 1. Understand crayfish have observable structures and require clean, cool water, food, and space. 2. Define and describe animal behaviors. 3. Investigate the territoriality of crayfish.	**Investigation 3: Meet The Crayfish, cont'd.** **<u>Part 4</u>** - ● Design a crayfish housing investigation and introduce Crayfish Habitat sheet. ● Secure crayfish housing in trays. ● Propose techniques for identifying crayfish, their houses, and movements. **After 4 days…..** ● Define *territory* and discuss data. ● Continue on-going observation and record keeping.	**Investigation 3: Meet The Crayfish, cont'd.** See materials list (page 24) Crayfish Habitat Sheet (4 copies for each student) **Investigation 5: Bess Beetles**	**Investigation 3 Crayfish, cont'** Ongoing Assess (optional) (F) Crayfish Behav Response Sheet Crayfish (S) Investigation 3 **End of Module** (S) with Additional Que 11 **Investigation 3 Crayfish, cont'**

Investigation 3: Meet The Crayfish, cont'd. The students will be able to: 1. Understand crayfish have observable structures and require clean, cool water, food, and space. 2. Define and describe animal behaviors. 3. Investigate the territoriality of crayfish. **Investigation 5: Bess Beetles**	***<u>Do not complete investigation 4!</u>*** **Investigation 5: Bess Beetles** - - **<u>Part 1</u>** - ● Introduce the Bess beetles and discuss the care and respect of the organism. ● Observe and explore with bess beetles and record parts (*6 legs, antennae, thorax, abdomen)* ● Introduce bess beetles' habitat. ● Read "The Life of the Bess Beetle." (p. 30 investigation 5) **Investigation 5: Bess Beetles, cont'd.** **<u>Part 2</u>**	See materials list (page 8) Bess Beetle Logs "The Life of the Bess Beetle." **Investigation 5: Bess Beetles, cont'd.** See materials list (page 13) Bess Beetle Observations (copies for each student)	Ongoing Assess (optional) (F) Crayfish Habita **Investigation 5** Ongoing Assess (optional) (F) Exit Card: Wha know about bes

	-		keep them in ou
	● Review bess beetle structures and record on Bess Beetle Observations.	FOSS Science Stories	
The students will be able to:		"Crayfish, Snails, and Kids," and The Food Web.	
	● Identify additional structures and behaviors and record.		
1. Understand bess beetles are insects with six legs, three body parts, antennae, and a variety of other structures.	● Compare and contrast the bess beetle to the crayfish using a Venn diagram.		
	● Discuss crayfish structures and functions, and record.	**Investigation 5: Bess Beetles, cont'd.**	
2. Recognize that bess beetles need water, food, air, and space.			
	● Read "Crayfish, Snails, and Kids," and The Food Web.		**Investigation 5 cont'd.**
		See materials list (page 19)	
	Investigation 5: Bess Beetles, cont'd.		
		FOSS Science Stories	Bess Beetle Ob
Investigation 5: Bess Beetles, cont'd.	**Part 3**	"Chance Encounter," and "Life in Los Angeles."	
	-		T-chart compar and crayfish (S)
	● Discuss the observable strength of the bess beetle.		
3. Identify the structure similarities and differences between organisms.	● Introduce the beetle harness and conduct beetle pull.		
	● Report beetle pull results and create additional investigations.		
4. Understand that an organism's structure has functions that help it survive in its habitat,			

and all organisms need care. **Investigation 5: Bess Beetles, cont'd.** 3. Identify the structure similarities and differences between organisms. 4. Understand that an organism's structure has functions that help it survive in its habitat, and all organisms need care.	● Read "Chance Encounter," and "Life in Los Angeles." **Optional: Investigation 5 part 4 – Choosing your own investigation.**		**Investigation 5 cont'd.** **End of Module**

Grading and Evaluation Guidelines

Grade level common assessments are used throughout the unit.

Other Details

SCED

53233 Science (grade 3)
Science (grade 3) courses involve observation, measurement, and description of simple systems. Course content may include the scientific process; life and environmental science; and physical, earth, and space science. Specific content depends upon state standards for grade 3.