Grade 1 Science Course Overview

Content Area: **Science**
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Cover

EAST BRUNSWICK PUBLIC SCHOOLS

East Brunswick New Jersey

Superintendent of Schools

Dr. Victor P. Valeski

Science

Grade 1 Science

Course Number: 4101

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Course Overview

The K-12 science curriculum in all schools in New Jersey must be aligned with the New Jersey Student Learning 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 first 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 / physical science unit is ***Weather (STC)*** which introduces students to the concept of weather and how it affects their lives. The life science units are ***Organisms (STC)*** which provides students with hands-on experiences that help students develop an understanding of and sensitivity to living things and New Plants (*FOSS*) which provides experiences that heighten young students' awareness of the diversity of life in the plant kingdom.

Textbooks and other resources

Carolina STC Organisms, 3rd Edition - Copyright 2013

Organisms Technology Package

Carolina STC Weather, 2nd Edition - Copyright 2004

Delta FOSS New Plants, 2nd Edition - Copyright 2005

Standards

CRP.K-12.CRP1	Act as a responsible and contributing citizen and employee.
CRP.K-12.CRP1.1	Career-ready individuals understand the obligations and responsibilities of being a member of a community, and they demonstrate this understanding every day through their interactions with others. They are conscientious of the impacts of their decisions on others and the environment around them. They think about the near-term and long-term consequences of their actions and seek to act in ways that contribute to the betterment of their teams, families, community and workplace. They are reliable and consistent in going beyond the minimum expectation and in participating in activities that serve the greater

	good.
SCI.1-ESS1-2	Make observations at different times of year to relate the amount of daylight to the time of year.
SCI.1-ESS1-1	Use observations of the sun, moon, and stars to describe patterns that can be predicted.
SCI.1-LS1-2	Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.
SCI.1-LS1-1	Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.
SCI.1-LS3-1	Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.
SCI.1-PS4-4	Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.
SCI.1-PS4-2	Make observations to construct an evidence-based account that objects can be seen only when illuminated.
SCI.1-PS4-3	Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light.
SCI.1-PS4-1	Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.
SCI.K-2-ETS1-3	Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.
SCI.K-2-ETS1-1	Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.
SCI.K-2-ETS1-2	Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.
TECH.8.1.2.C.CS4	Contribute to project teams to produce original works or solve problems.

Grading and Evaluation Guidelines

Common Assessments are utilized throughout the units of study.

Assessments include: Participation, Notebooks/Journals, Classwork

Grade 1 Science Planning guide

Grade 1 Science Planning Guide

Instructional Objectives	Instructional Activities/ Methods/ Assignments	Materials / Resc
Weather Lesson 1 Students will be able to observe and describe today's weather. Students will be able to discuss how they decide what to wear to school each day. Students will be able to organize information about their favorite types of weather on a class graph.	**Weather** **Lesson 1** • Read poem. • Compare today's weather with weather described in poem. • Discuss what the weather is like today with a partner. • Make chart, "What is the Weather Like Today?" • Discuss how they decide what to wear to school each day. United Streaming Video: A First Look: Weather (17:00)	**Weather** **Lesson 1** Post-It Notes Crayons Poem, "It's Hot" By Shel Silverstein Dress Sid the Science Kid appropriately for the weather http://pbskids.org/sid/wetherwheel.html

Weather Lesson 2 Students Will Be Able to use their senses to observe the weather. Students will be able to discuss and record data about observable weather features. Students will be able to read and discuss about how meteorologists study the weather.	**Weather** **Lesson 2** • Identify each of their senses and the information they get from each sense. • Stress the fact that the sense of taste is not used in science class. • Read poem, "Who Has Seen the Wind?" Brainpop Jr Video : Making Observations • Take students outside to observe the weather using senses. • Distribute copy of Record Sheet 2-A. Discuss and share. • Discuss various weather features (rain, sunshine, snow, etc.) • Brainstorm questions about weather. • Discuss that a meteorologist is a person who can answer many questions about weather. • Read story.	**Weather** **Lesson 2** Record Sheet 2-A "The Four Senses" Master Poem, "Who Has Seen the Wind?" Story, "Observing the Weather with a Meteorologist". Use your senses to identify objects with Sid the Science http://pbskids.org/sid/isense.html

Weather Lesson 3 Students will be able to observe and discuss cloud cover and precipitation. Students will be able to collect data about cloud cover and precipitation. Students will be able to record weather data on the calendar.	**Weather** **Lesson 3** • Discuss what the weather was like 2 weeks ago. • Introduce weather calendar as one way to keep track of the daily weather. • Discuss eleven weather stamps. • Discuss which stamp best illustrates today's weather. • Fill in weather calendar.	**Weather** **Lesson 3** weather calendar set of weather stamps date stamp stamp pad 100 post-it notes

Weather Lesson 4 Students will be able to describe how they know when the wind is blowing. Students will be able to observe and describe a flag moving in the wind. Students will be able to discuss and record the speed of the wind. Students will be able to apply a wind scale to the movement of the flag.	**Weather** **Lesson 4** • Ask students to describe the wind. • Talk about how meteorologists use observations of objects blowing in the wind to help describe how hard or fast it is blowing. • Introduce the idea of using a number to describe 3 wind conditions. • Take class outside to flagpole to observe the effect of the wind on the flag. • Discuss observations. • Distribute materials for wind flag along with student instructions.	**Weather** **Lesson 4** Student instructions for Making a Wind Flag Record Sheet 4-A Sing along to a WIND song sung to the tune of "The Fa out the ways wind is good and the ways wind is bad. https://docs.google.com/file/d/0B8bTZllX7s9pTlVzdHc

	United Streaming Video (segment): A Look at Wind (1:26)	
Weather Lesson 5 Students will be able to observe and discuss thermometers as tools that measure temperature. Students will be able to read the numbers on the thermometer scale. Students will be able to relate the numbers on the scale to hotter or colder	**Weather** **Lesson 5** • Discuss what they know about thermometers. • Distribute Thermometers in Our World and discuss. • Brainstorm words that describe temperature in all seasons. • Distribute thermometers. • Distribute Record Sheet 5-A and	**Weather** **Lesson 5** Record Sheet 5-A Thermometers in Our World Master Thermometer Large Model Fahrenheit Thermometer

temperatures. Students will be able to observe and record cloud cover, precipitation, and wind on the Weather Calendar.	discuss. • Fill in calendar. United Streaming Video: Weather: Changes and Measurement (13:00)	
Weather Lesson 6 Students will be able to read temperatures on model thermometers. Students will be able to read and record the temperature shown on an illustration of a thermometer. Students will be able to relate a specific temperature to appropriate activities and clothing. Students will be able to observe, discuss, and record today's weather on the Weather Calendar.	**Weather** **Lesson 6** • Students share what they learned about thermometers. • Students practice stetting thermometers at certain temperatures. • Demonstrate on large model thermometer. • Students work in pairs. One student can set a temperature while the other reads it. • Distribute and discuss Record Sheet 6-A. • Fill in calendar.	**Weather** **Lesson 6** Record Sheet 6-A Large model thermometer from lesson 5
Weather Lesson 7 Students will be able to read the scale on a real thermometer.	**Weather** **Lesson 7** • Discuss the temperature inside and outside. • Distribute thermometers.	**Weather** **Lesson 7** Record Sheet 7-A and 7-B Weather Calendar

Students will be able to measure, record, and compare the temperatures in the classroom and outside. Students will be able to continue to collect weather data and record it on the Weather Calendar. Students will be able to compile temperature data on a graph.	• Discuss what the thermometer is measuring. • Distribute Record Sheet 7-A and share results. • Take class outside with their thermometers and Record Sheet 7-B. • Back in classroom, compare Record Sheets 7-A and 7-B. • Compile class temperature graph. • Fill in calendar. Brainpop Jr. Video Weather and Seasons	
Weather Lesson 8 Students will be able to measure the temperatures of hot and cold water. Students will be able to conduct an experiment and discuss the results. Students will be able to record data on graph.	**Weather** **Lesson 8** • Hold up 2 plastic cups of water one hot, one cold and discuss. • Students will measure temperatures of hot and cold water and will then conduct an experiment to investigate what happens to the water temperature when the hot and cold water are mixed. • Distribute water	**Weather** **Lesson 8** Record Sheet 8-A Water Place Mats Master 4 plastic cups pail of hot water pail of cold water paper towels Water Mixing Experiment Chart

	place mats, 3 thermometers, and red crayon to each group. • Teacher pours water (hot, cold, and mixed) into cups. • Have children put thermometers in cold water, hot water and record on place mats. • Have groups decide how many small cups of cold water and hot water they want to mix together. • Record choice on the Water Mixing Experiment Chart. • Complete Record Sheet 8-A to show the temperature of the cold water, hot water, and mixed water.	
Weather Lesson 9 Students will be able to set up a simple experiment with thermometers. Students will be able to record the temperature shown on thermometers	**Weather** **Lesson 9** • Discuss that the color of their clothes can affect how hot they feel when they are in direct sunlight. • One way to investigate this subject is to do an	**Weather** **Lesson 9** Record Sheet 9-A Thermometer White and Black construction paper made into covering Chart “Predicting Temperatures” Chart “Recording Temperatures”

placed in black and white coverings. Students will be able to interpret the data and apply the results of the experiment to draw practical conclusions.	experiment using black and white paper. • Distribute black or white covering. • Show students class chart "Predicting Temperatures" • Distribute Record Sheet 9-A • After 10 minutes ask students to take thermometers out of coverings and record temperature on Record Sheet 9-A. • Discuss data on chart.	See how the Cat in the Hat reacts in different weather co types of weather. http://pbskids.org/catinthehat/games/weather-transforme
Weather Lesson 10 Students will be able to construct rain gauges. Students will be able to measure and record the amount of rainfall in their rain gauges. Students will be able to record class results on chart.	**Weather** **Lesson 10** • Discuss the last time it rained. • Introduce idea of using a scale to measure rain. • Distribute "Student Instructions for Making Rain Gauge". • Distribute plastic cup, Unifix Cube Scale, and have students make rain gauges. • Take students outside to the rain collection spot you have chosen. • Teacher will act like a cloud and use either the watering can or plastic carton	**Weather** **Lesson 10** "Student Instructions for Making Rain Gauge" Rain gauge scale (1 copy for every 2 students) Record Sheet 10-A 2 large plastic cups Tape Watering can or plastic milk carton (if using a plastic ca water) Chart, "Record of Rainfall" "Our Rainfall Graph"

	to simulate rainfall. Vary the amount of "rain" in each gauge. • Remind students to walk carefully so they do not spill the "rain". • Compare tilted rain gauge with the leveled one and discuss why it is important for the rain gauges to be level when the rain is being measured. • Distribute Record Sheet 10-A. • Discuss the record of rainfall chart and turn data into a graph called "Our Rainfall Graph". • When appropriate, some students may use other forms of measurement to measure the amount of rain.	
Weather Lesson 11 Students will be able to observe the process of evaporation. Students will be able to record the changes in puddles that take place as water evaporates. Students will be able to read about and discuss the historical development of	**Weather** **Lesson 11** • Discuss where they see puddles when it rains and what happens to the puddles a day or two later. • Show and distribute the copy of "My Puddle Book" and tell them they are going to do an experiment with puddles so they can record the data. • Do experiment to	**Weather** **Lesson 11** "My Puddle Book" Master Aluminum pie plate for every 4 students 1 small plastic cup 2 pails of water food coloring (optional) Story "Inventing Umbrellas" The water cycle song! Sing along!

the umbrella.	complete “My Puddle Book”. • Students turn and talk about puddles and evaporation. Brainpop Jr Video: Weather and Water Cycle • Read and discuss “Inventing Umbrellas”.	http://havefunteaching.com/?s=the+water+cycle
Weather Lesson 12 Students will be able to conduct an experiment with fabrics and water. Students will be able to record their results and draw conclusions. Students will be able to read about and discuss the history of the mackintosh raincoat.	**Weather** **Lesson 12** • Discuss what would happen if everyone in the class when out in the rain today without an umbrella. • Tell students they will be doing an experiment to help them answer the questions. Discuss. • Distribute materials (rubber band, piece of fabric, and plastic cup) for each group. • Conduct an experiment testing fabrics. • As each fabric is tested, students should observe how much water goes through the fabric	**Weather** **Lesson 12** Story, “A Coat to Keep you Dry” Record Sheet 12-A Aluminum pie plate Small plastic cup 4 medium plastic cups 4 rubber bands 4 pieces of fabric 2 plastic pails of water Paper towels or sponges

	into the cup and how much spills over into the pie plate. • Distribute Record Sheet 12-A and have students complete. • Read “A Coat to Keep you Dry”.	
Weather Lesson 13 Students will be able to observe and discuss clouds. Students will be able to make 3-D pictures to record their observation of clouds.	**Weather** **Lesson 13** • Create a web of clouds and record. • Take class outside. Allow 5-10 minutes for students to observe clouds in the sky. • Return to classroom and have students share their ideas. • Distribute blue construction paper, glue, and cotton balls. • Students draw picture of one cloud they observed.	**Weather** **Lesson 13** Light blue construction paper Cotton balls Glue or paste

	United Streaming Video: Clouds, Weather, and Life (12:05)	
Weather Lesson 14 Students will be able to create their own classification schemes for sorting cloud photographs. Students will be able to sort cloud photographs using stratus, cumulus, and cirrus.	**Weather** **Lesson 14** • Give each group of students a set of nine cloud photographs and sort photographs into categories. • Give each set of cloud photographs a name based on what the clouds look like. • Students explain classifications.	**Weather** **Lesson 14** Cloud photographs "Cloud Classifications" master "Cloud Classification Chart" Watch a little clip about clouds. "I'm Gonna Be a Big R

Students will be able to organize information about clouds on the classification chart.	• Groups share with class. • Show "Cloud Classification Chart". • Students look at cloud photographs and organize the photographs according to the three categories. • Encourage students to write formal cloud names on weather calendar.	http://pbskids.org/sid/videoplayer.html
Weather Lesson 15	**Weather** **Lesson 15**	**Weather** **Lesson 15**
Students will be able to compare a weather forecast from the newspaper with the day's actual weather. Students will be able to discuss the fact that forecasts are predictions based on observed and recorded data. Students will be able to discuss ways that forecasts can help them make decisions about outdoor activities.	• Discuss meaning of "forecast". • Show students section of daily newspaper that contains the weather forecast and read it to them. • United Streaming Video Weather Forecasting (2:12) • Have students record data on chart. • Discuss any differences they see between the data and the forecast.	Weather Forecast from local newspaper Weather Calendar Temperature Graph Chart "The Forecast and the Weather"

	• Discuss importance of forecast in our daily lives. • Have students share their ideas of the importance of weather forecasts for other people.	
Weather Lesson 16 Students will be able to review and discuss the data from the weather calendar and temperature graph. Students will be able to tally collected weather data. Students will be able to use their data and summarize characteristics of the weather over a long period of time.	**Weather** **Lesson 16** • Using weather calendar describe the weather 2 weeks ago. • Create "Class Weather Tally" chart. • Using "Class Weather Tally" chart demonstrate how they will record the data from the Weather Calendar on their record sheets. • Summarize data from "Class Weather Tally chart. • Use Temperature Graph and discuss which temperatures were the most and least common. • To synthesize all of the data have students write summary statements. • Hand out "Super Meteorologist" Awards.	**Weather** **Lesson 16** Record Sheet 16-A "Super Meteorologist Award" Master 11 weather stamps Weather Calendar Temperature Graph

Weather Lesson 17 Students will be able to observe and describe today's weather. Students will be able to discuss how they decide what to wear to school each day. Students will be able to reflect upon what they have learned about weather and how it affects their lives.	**Weather** **Lesson 17** <u>Assessment</u> • Students share observations of today's weather and record responses on chart, "What is the Weather Like Today?" • Display chart, "What is the Weather Like Today?" from Lesson 1 and encourage students to share their earlier responses with the ones they record today. • Display chart, "How do you decide what to wear to school today?" from Lesson 1 and encourage students to compare those response with today's list. • Teacher should look for details in students' descriptions of weather and evidence that they consider the weather when deciding what to wear to school.	**Weather** **Lesson 17** Chart, "What is the Weather Like Today?" (new one an Chart, "How do you decide what to wear to school toda
Organisms Lesson 1	**Organisms** **Lesson 1** Day 1	**Organism** **Lesson 1** Record Sheet 1-A

Students will be able to draw a living thing and add the elements they think it needs to live and be healthy. Students will be able to share the ways they think all plants and animals are alike.	• Distribute Record Sheet 1-A. • Draw a living thing and the living things it needs to live and be healthy. • Brainstorm and record a list "Our list of living things" (be sure to include both plants and animals) Day 2 • Complete and discuss charts, "Ways we Think Plants and Animals are Alike" and "Ways we Think Plants and Animals are Different" • View United Streaming video "Living and Nonliving Things" (12 min.) • Turn and talk: Are you a living thing? How do you know?	Chart Paper Sort living and nonliving things. http://www.firstschoolyears.com/science/resources/gam **Day 1** Take an online quiz to find which things are living and http://utahscience.oremjr.alpine.k12.ut.us/sciber00/7th/c Circle if the thing is living or nonliving. http://havefunteaching.com/worksheets/science/living-a worksheet.pdf **Day 2** Differentiate between birds, mammals, insects, and plan http://www.sciencekids.co.nz/gamesactivities/plantsanir Write the living and nonliving things. http://havefunteaching.com/worksheets/science/living-a worksheet-1.pdf
Organisms Lesson 2 Students will be able to use their senses to observe a	**Organisms** **Lesson 2** Day 1	**Organism** **Lesson 2** Observing and Describing Seeds Worksheet

variety of seeds. Students will be able to draw and describe the seeds. Students will be able to create a class "Observing Table" to use throughout the unit.	• Make chart, "What We Think a Seed Is" and record ideas. • Identify five senses. • Introduce how to use a magnifying glass. • Distribute copy of "Describing and Observing Seeds". Students use senses to describe seeds. • Observe seeds using their senses (May go into second day) Day 2 • Continue to observe and describe seeds (as needed) • Create class chart: record student responses on board. • Students glue seeds onto chart. • View United Streaming video "Looking at two piles of seeds" (3:22 min.) • "Comparing two piles of seeds by counting (3:10 min.)	Seeds (kidney, pea, sunflower, pumpkin) Hand lens
Organisms	**Organisms**	**Organism**

Lesson 3	**Lesson 3**	**Lesson 3**
Students will be able to plant their seeds. Students will be able to predict what they think will happen to their seeds. Students will be able to begin to record their seeds growth and changes in drawings and words.	Day 1 • Discuss, have you ever planted seeds before, what did you do and need? Can our senses tell us what kind of plants these seeds will turn into? • Discuss planting process. • Each group will plant one of the four types of seeds. • Distribute Planting Card 1 and have students complete. Day 2 • Distribute and complete Planting Card 2. • Discuss how we will care for the plants. • Cover plants with plastic bag and place cups on tray. • United Streaming Video: Peep and the Big Wide World: Peep Plants a Seed/The Root Problem (22:02) Lesson 6 (Revisit plants) • Students complete "How My Plant Grew" chart.	Planting Cards 1-3 Plastic Bag Clear plastic planter cup 3 seeds of the same type Plastic Spoon Paper Towel Potting Soil Marker Mister "How My Plant Grew" Master

Organisms Lesson 4 Students will be able to observe, draw, and describe two woodland plants: moss and a tree seedling. Students will be able to discuss what they think the plants need to live. Students will be able to observe and draw the woodland home, add the plants, and begin a pictorial record of their terrarium. Students will be able to discuss similarities and differences between the two woodland plants.	**Organisms** **Lesson 4** Day 1 • Turn and talk: Have you ever gone for a walk in the woods? What did you see, smell, hear or feel? • View United Streaming video " Let's Explore In the Woods" (Watch segments 1 and 2, 2:52 min.) • Put students in terrarium teams and divide teams into pairs. • Discuss what they think should go in the tank in order for the plants to live. • Follow instructions to have students set up terrariums. Day 2 • Review layers of terrarium. • Distribute record sheet 4-B and have students draw the terrarium as they see it (no organisms) • Discuss and complete record sheet 4-A. • Distribute hand lenses, paper towels, and plants. • Teams discuss plants and record observations on 4-	**Organism** **Lesson 4** Record Sheet 4-A, 4-B (4-B must be saved for future les Moss mat tree seedling Woodland terrarium Hand lens Plastic spoon Paper towels Find living things outdoors. See how living things chan http://www.sciencekids.co.nz/gamesactivities/plantsanir

	A. Day 3 • View United Streaming video " Let's Explore In the Woods" (Watch segment 3, 1:12 min.) • Review names of woodland plants and record sheet 4-A. • Students retrieve terrariums. • Review steps of planting woodland plants. • Discuss how to maintain terrariums. Day 4 • Teams talk with each other about how plants are alike and different. • Discuss charts "Ways the Woodland Plants are Alike" and "Ways the Woodland Plants are Different" and record responses. • Introduce journal sheet and have students design a cover. Have students write about experience building a terrarium. • Weather permitting, take a nature walk.	

Organisms Lesson 5 Students will be able to observe, draw, and describe two freshwater plants. Students will be able to observe and draw a freshwater home, add 2 freshwater plants, and begin an ongoing pictorial record of the aquarium. Students will be able to discuss how the two freshwater plants are alike and different.	**Organisms** **Lesson 5** Day 1 • Turn and talk: Where do plants grow? Guide them to understand that plants also grow in water. • Put students in aquarium teams and divide teams into pairs. • Distribute record sheet 5-A. • Distribute plants, paper towels, and hand lenses. • Observe 2 plants that live in freshwater ponds and streams and record observations.	**Organism** **Lesson 5** Record Sheet 5-A and 5-B (5-B must be saved for future One Elodea Plant One Cabomba Plant Freshwater Aquarium Gravel Water

	• Discuss findings as a class. Day 2 • Show empty tank and ask what they think should go in it in order for the plants to live. • Set up class aquarium as per teacher guide. • Instruct students on how to put plants in aquarium as per teacher guide. Day 3 • Review names of aquarium plants. • Distribute and complete record sheet 5-B. • Watch brainpop jr. video "Freshwater habitats" (6:50 min) • Discuss how to take care of aquarium. Day 4 • Teams talk with each other about how plants are alike and different. • Create and discuss charts "Ways the Aquarium Plants are Alike" and "Ways the Aquarium Plants are Different" and	

	record responses. • Revisit journal. Have students write about aquarium.	
Organisms Lesson 6	**Organisms** **Lesson 6**	**Organism** **Lesson 6**

Students will be able to observe and discuss the similarities and differences amongst their plants. Students will be able to discuss observation of changes in seeds they planted. Students will be able to create a class story to record their seed planting experiences. Students will be able to create a "Seed Book" that illustrates the beginning life stages of a plant.	Day 1 • Turn and talk: Have your seeds changed? How? • Turn and talk: Do you think the soil helped the seed grow? How? • Watch brainpop video "Soil" (4:34 min.) • Distribute hand lenses and planting card 2. Have students complete their drawing. • Pair students with someone who grew a different seed. Discuss similarities and differences. • Share ideas with class and list on smart board. Day 2 • Distribute and complete planting card 3. • Share ideas with class. • Create and display "Needs of Plants" and ask what students think their plants need to live and grow (save chart for use in future lessons). • Watch brain pop video "Plant Life Cycle" (4:14 min.) • Display chart "What we think a seed is" (lesson 2). Identify statements that they now know are true. Revise	Hand lens Student plant from lesson 3 Planting card 2 from lesson 3 Planting card 3 from lesson 3 "Taking My Plant Home" Master

	chart as needed.	
Organisms Lesson 7 Students will be able to observe, draw and describe a freshwater snail. Students will be able to share their observations in class discussions. Students will be able to discuss what a pond snail needs to live.	**Organisms** **Lesson 7** Day 1 • Turn and talk: What animals do you think might live in freshwater ponds, streams, and lakes? • Distribute and discuss record sheet 7-A. • Discuss senses they will use to observe snails. • Distribute 2 observing cups with snails to each team. • Use hand lens to observe snail in cup. • Students describe the snail and teacher records class observations on Venn Diagram. • Watch United Streaming video "All About Mollusks" (3:38 min.) • "Mollusks facts and fun" (3:46 min.) • Where will snails live in our classroom?	**Organism** **Lesson 7** Record Sheet 7-A Freshwater aquarium 2 Observing cups containing water and freshwater snail

Organisms Lesson 8 Students will be able to observe, draw, share, and describe a male and female guppy. Students will be able to use a Venn Diagram to identify and discuss similarities and differences between the guppy and snail. Students will be able to discuss what guppies need to live.	**Organisms** **Lesson 8** Day 1 • Have students take out record sheet 7-A. • Children observe guppy using hand lenses. • Students observe, draw, and describe guppies. • Pairs of students will switch guppies within their teams. • Students draw second guppy and add any new observations. Day 2 • Students share observations and teacher records on the right side of the circle on the guppy Venn Diagram. • Discuss ways guppies are different from each other and complete the other side of Venn Diagram. • Discuss similarities between guppies and snails and add to Venn Diagram. • Add guppies and snails to aquariums.	**Organism** **Lesson 8** Record Sheet 7-A Hand lens Crayons Freshwater aquarium Cup containing water and male guppy Cup containing water and female guppy

Organisms Lesson 9 Students will be able to observe, draw, and describe a land animal: the pill bug. Students will be able to discuss what a pill bug needs to live.	**Organisms** **Lesson 9** Day 1 • Turn and talk: What animals live in the woods? • Observe an animal that can live in the woods with the tree seedling and moss: a pill bug. • Distribute and review record sheet 9-A. • Distribute 2 observing cups to each team, pairing partners as you go. • Observe the pill bug using hand lens. • Interested students can touch pill bug while it is in the cup. Ask what happens when they touch the pill bug. • Have students gently tip the observing cups to put the pill bugs in the terraria and observe. Day 2 • Share their pill bug observations and record on Venn Diagram. • Write about pill	**Organism** **Lesson 9** Record Sheet 9-A Hand lens 2 observing cups, each containing soil, a leaf, and a pill 2 lids for plastic cups

	bugs in journal.	
Organisms Lesson 10 Students will be able to observe, draw, and describe Bess beetles or millipedes. Students will be able to share observations. Students will be able to use a Venn Diagram to discuss the ways the pill bug and Bess beetle or millipedes are similar and different.	**Organisms** **Lesson 10** Day 1 <u>If you are using the Bess beetle:</u> • Explain and observe Bess beetle. • Distribute, observe, describe, and draw Bess beetle. • Help students take Bess beetle out of observing cup. • Put each team's terrarium at its work area. Give each team a wood chunk to place in tank. • Place beetle on side with wood chunk. <u>If you are using the millipedes:</u> • Explain and observe	**Organism** **Lesson 10** Record Sheet 9-A Hand lens Plastic gloves for use with millipedes only plastic cup containing leaf litter and a Bess Beetle or mi wood chunk for use with Bess beetles only Pill Bug Venn Diagram from Lesson 9

	millipedes. • Distribute, observe, describe, and draw millipedes using record sheet 9-A. • Help students take millipedes out of observing cup. • Put each team's terrarium at its work area. Day 2 <u>If you are using the Bess beetle</u> • Share Bess beetle observations and record on right side of Venn Diagram. <u>If you are using the millipedes</u> • Share millipedes observations and record on right side	

	of Venn Diagram. • Complete ways pill bugs and bess beetle/millipedes are similar on Venn diagram. • Time allowing view enlarged image of millipede on United Streaming. • Listen to millipede and centipede song on United Streaming.	

Organisms Lesson 11	**Organisms** **Lesson 11** Day 1	**Organism** **Lesson 11**
Students will be able to complete their pictorial record of the aquarium. Students will be able to observe, discuss, and record any changes in the aquarium and its organisms. Students will be able to write about one or more organisms in the aquarium.	• Turn and talk: What changes will you look for as you observe the aquarium organisms? • Discuss organisms and how many of each was put in each aquarium. • Students should add the animals to the picture on record sheet 5-A. • Discuss changes as a class.	Record Sheet 5-B Hand lens Freshwater aquarium
Organisms Lesson 12	**Organisms** **Lesson 12** Day 1	**Organism** **Lesson 12**
Students will be able to	• Observe terrarium	

complete their pictorial record of the terrarium. Students will be able to discuss and record any changes in the terrarium and its organisms. Students will be able to write about one or more organisms in the terrarium.	closely. • Discuss organisms and how many of each was put in each terrarium. • Students should add the animals to the picture on record sheet 4-B. • Discuss changes. • Discuss why organisms in terrarium are harder to see than those in the aquarium. • Revisit questions and see what students know now. Day 2 • Review names of organisms in the terrarium. • Write about 1 or more of the organisms in the terrarium and share with a partner.	Record Sheet 4-B Woodland terrarium Class questions about the pill bug from lesson 9 Class questions about the beetles or millipedes from less Hand lens

Organisms Lesson 13 Students will be able to observe the freshwater and woodland plants. Students will be able to use Venn Diagram to discuss ways the freshwater and woodland plants are alike and different.	**Organisms** **Lesson 13** Day 1 • Give each group a terrarium, aquarium, post-it notes, and hand lenses. • Observe the plants in terrarium and aquarium. Start thinking about ways they are alike. • Using Venn Diagram describe how they will use the circle to compare the freshwater and woodland plants and how they are alike. • Observe freshwater plants in tank. • Groups share ideas with class and use post-its to add to the Venn Diagram. • Next, focus on observations that the plants do not have in common and discuss. Day 2 • Review Venn Diagram from day before. • Discuss what the plants in each habitat need to stay healthy and what we did to care for our plants(Revise list as needed)	**Organism** **Lesson 13** Hand lens Copy of “Four Amazing Plants” master Freshwater aquarium Woodland terrarium Post-it notes

	• Discuss "Four Amazing Plants" with class. • Have students add to illustrations.	
Organisms Lesson 14 Students will be able to observe the freshwater and woodland animals. Students will be able to use a Venn Diagram to discuss ways in which freshwater and woodland animals are alike and different. Students will be able to make a chart showing different ways animals move.	**Organisms** **Lesson 14** Day 1 • Give each group a terrarium, aquarium, post-its, and hand lenses. • Use Venn Diagram representing two kinds of animals. On one side list ways Woodland animals are the same. On other side list ways Freshwater animals are the same. • Examine Venn Diagram and cross out things that are common to animals in both habitats. Add these things to middle of Venn Diagram. Day 2 • Focus on different ways animals move. • Watch united streaming video "Animals in Action" (20:00 min) • Time allowing play follow the leader to move like various animals.	**Organism** **Lesson 14** Hand lens Freshwater aquarium Woodland terrarium Post-it notes "Needs of Animals" chart Compare and contrast land animals and sea animals. http://www.havefunteaching.com/worksheets/graphic-o and-contrast-land-sea-animals.pdf

	Day 3 • Have students draw an animal and make a graph listing different ways animals move. Have students add picture to correct place on graph. • Create chart labeled "What We Think Animals Need." • Save the animal Venn Diagram and class "Needs of Animals" list to use in lesson 15.	
Organisms Lesson 15 Students will be able to discuss the ways in which all organisms they have observed are alike and different. Students will be able to use the Venn Diagram to discuss the similarities and differences. Students will be able to generate a list of the needs of plants and animals. Students will be able to read about how a zoo keeper meets the needs of a crocodile.	**Organisms** **Lesson 15** Day 1 • Discuss plants and animals they have observed. Focus on Venn Diagram, comparing plants and animals. • Distribute a copy of comparing plants and animals to each group. • Have each group work together or complete as a whole class. Day 2 • Review what animals need from Day 1. • Turn and talk: What do you need to do to care for a new pet.	**Organism** **Lesson 15** Hand lenses Plant Venn Diagram from, lesson 13 "Needs of Plants" list from lesson 13 "Needs of Animals" list from lesson 14 Animal Venn Diagram from lesson 14

	• View United Streaming video " Caring for a new puppy" (3:38 min) View second segment. • Read "A Crocodile Comes to the Zoo". • Have students color, cut out and glue the sun, plants, rat, and crocodile from duplicated cut out page onto the story.	
Organisms Lesson 16 Students will be able to observe and describe humans. Students will be able to compare humans to other animals and plants. Students will be able to express ways in which they think humans are like other animals and plants.	**Organisms** **Lesson 16** Day 1 • Discuss one more organism in classroom: humans. • Pass out hand lens and have students observe themselves and each other carefully. • Discuss ways they think humans are alike. Encourage students to think beyond looks to what humans do or need. • Next, discuss ways humans are different. Day 2 • Turn and talk: What is one way that you are like other animals or plants. • Create a Venn	**Organism** **Lesson 16** "Ways Animals are Alike" master "Comparing Humans with Other Animals and Plants" M post-it notes Venn Diagram from lesson 15 "Needs of Plants and Animals" from lesson 15 Watch "The Difference Between Humans and Animals. http://pbskids.org/sid/videoplayer.html

	Diagram comparing plants/animals and humans. (refer to teacher guide) • Students choose from these two sentence starters and fill in the blank with one or more reasons. *I am like other animals because* _____. *I am like a plant because* _____. Students illustrate.	
Organisms Lesson 17 Students will be able to draw a living thing and add the elements they think it needs to live and be healthy.	**Organisms** **Lesson 17** <u>Assessment</u> • Students draw a living thing and what they think it would need to live and be healthy.	**Organism** **Lesson 17** Drawing Paper **Enhancement/Enrichment for EG students:** Distinguish between living and nonliving things. Label afterwards! http://www.bbc.co.uk/schools/scienceclips/ages/5_6/ou

		Science Curriculum- Grade One
Instructional Objectives	**Instructional Activities/ Methods/ Assignments**	Materials / Resources
New Plants	**New Plants**	**New Plants**

Investigation 1 **Part 1** Students will be able to identify the materials used for recording plant growth.	**Investigation 1** **Part 1** Introducing Recording • Discuss plants • Introduce the class calendar • Show the student journals • Distribute the journals • Start a word bank (plant, calendar, journal) United Streaming Video: A First Look: Plants (17:00) OPTIONAL: Go on Plant/Nature Walk and record observations with drawings or words	**Investigation 1** **Part 1** Student sheet no. 1, 2, 3 Class calendar **Investigation 1 Part 1** Make predictions and infer if you think the plant will gr CONNECTION TO ILA) http://www.havefunteaching.com/worksheets/reading/in predictions-plants.pdf

New Plants **Investigation 1** **Part 2**	**New Plants** **Investigation 1** **Part 2**	**New Plants** **Investigation 1** **Part 2**
Students will be able to plant rapid-cycling Brassica seeds in soil and observe changes over time.	Planting Brassica • Introduce Brassica • Brain Pop Jr.: Plant Life Cycle (4:14) • Demonstrate the planting procedure • Label cups • Prepare soil in cups • Distribute seeds • Cover the seeds • Water the seeds • Put cups in the tray • Discuss light requirements • Describe the future watering procedure • Make a calendar entry • Prepare reserves • Make word bank entries (brassica, soil, light, water, fertilizer, nutrient)	Planter cup with holes 2 Brassica seeds labels paper towels (supplied by teacher) basin planter tray plastic cup potting soil (supplied by teacher) liquid plant fertilizer planter cups lamp with 2 white cool bulbs lamp frame **Investigation 1 Part 2** Make plants grow to its full and healthy height. Give it warmth. http://www.bbc.co.uk/schools/scienceclips/ages/7_8/pla

New Plants **Investigation 1** **Part 3**	**New Plants** **Investigation 1** **Part 3**	**New Plants** **Investigation 1** **Part 3**
Students will be able to record observations using the techniques of drawing, labeling, and captioning. Students will be able to observe the sequence of changes in the life cycle of Brassica.	Observing Brassica Growth Look for growth Session 1: Observing Sprouts • Discuss plant growth • Model recording in journals • Record in student journals • Read science stories, "What Do Plants Need?" Session 2: Observing Leaf Growth • Discuss plant growth • Model recording in journals • Record in student journals Brain Pop Jr.: Parts of a Plant (4:49) Session 3:Observing Flower Growth • Discuss plant growth • Model recording in journals • Record in student journals Session 4: Bees,	Brassica Plant Class Calendar Cotton swabs (optional) Plastic cup 2 Basins Lamp system Planter tray Container Bottle of liquid plant fertilizer FOSS Science stories, "What do Plants Need?" **Investigation 1 Part 3** Read how flowers bloom. How do bees help pollinate fl http://www.treetures.com/Blossombook/Blossompage1.

	Butterflies, and Flowers • Cross-pollinate the Brassica plants • Allow the plants to dry • Harvest the seeds • Recycle the soil • Chart the growth of the plants • Make word bank entries (sprout, seedling, stem, leaves/leaf, bud, flower, pollen, seedpod, seed, root) United Streaming Video: The Magic School Bus: Goes to Seed (29:27)	
New Plants Investigation 2 **Part 1** Students will be able to compare the growth of two plants over time. Students will be able to find out what happens when rye grass and alfalfa plants are grown, then mowed close the soil surface, and then allowed to grow again.	**New Plants** **Investigation 2** **Part 1** Lawns • Discuss lawns • United Streaming Video: Grasslands (3:33) • Introduce grass seeds • Introduce the alfalfa seeds • Demonstrate planting procedure • Start by labeling cups • Prepare soil in cups • Distribute grass seeds • Distribute alfalfa seeds • Cover the seeds	**New Plants** **Investigation 2** **Part 1** Planter cup with holes Student sheet no. 6 “Growing a Lawn” Student sheet no. 3 Plastic cups Spoon Container Alfalfa seeds Rye grass seeds Planter tray 2 basins class calendar

	• Water the seeds • Put cups in tray • Prepare some reserves • Discuss light requirements • Discuss watering procedure • Make a class calendar entry • Show the "Growing a Lawn" journal • Record growth at 3 days • Add word bank entries (rye grass, alfalfa, lawn)	bottle of liquid plant fertilizer potting soil (supplied by teacher)
New Plants **Investigation 2** **Part 2** Students will be able to observe what happens to the two kinds plants.	**New Plants** **Investigation 2** **Part 2** <u>Mowing the Lawn</u> • Discuss student observations • Record lawn growth and propose mowing the lawn • Describe the mowing procedure • Mow the lawns • Keep one lawn unmowed • Record after mowing • Speculate on what might happen to the lawn	**New Plants** **Investigation 2** **Part 2** Planter cup with a growing lawn Student sheet no. 7 FOSS science stories, "How Seeds Travel" (read during **Investigation 2 Part 2** Shows an animation of how seeds disperse through wind seeds out of their pods. http://www.mbgnet.net/bioplants/seed.html

	• Observe over time • Add word bank entries (mow, leaves, stem)	
New Plants **Investigation 2** **Part 3**	**New Plants** **Investigation 2** **Part 3**	**New Plants** **Investigation 2** **Part 3**
Students will be able to sprout wheat seeds in soda straws and monitor growth.	<u>Wheat</u> • Discuss grain • Introduce grain seeds • Propose growing wheat • Demonstrate seed-in-a straw method • Prepare straws • Observe wheat seeds • Position the seeds	2 straws marked at 3in. 2 pieces of paper towel wheat seeds 1 removable label Master no.8 Plastic cup Container

	in the straws • Store the straws • Introduce the growing wheat sheet • Add water • Complete class calendar • Record growth and label straws • Assess progress: Teacher observation • Discuss wheat growth • Add word bank entries (grains, wheat, roots) United Streaming Video: Wheat (1:00)	White glue Straight edge (supplied by teacher) Metric ruler (supplied by teacher) Water Class calendar FOSS science stories, "The Story of Wheat" and "Flowe (read after Part 3)
New Plants Investigation 3 **Part 1** Students will be able to cut plant stems, place them in water, and observe changes over time. Students will be able to	**New Plants** **Investigation 3** **Part 1** Rooting Stem Cuttings • Discuss plants • Show cups and lids • Form groups and assign getters • Distribute stems for observation	**New Plants** **Investigation 3** **Part 1** Plants for cuttings (supplied by teacher) Flat box or tray (optional) Pitcher or 2-liter soda bottle (supplied by teacher) Water

discover the parts of the stem that can be induced to produce new plants.	• Introduce "Node" • Distribute cups, lids, and labels • Prepare cuttings • Add water to the cups • Store the cuttings • Make a calendar entry • Assess progress: student sheet • Discuss the cuttings • Add word bank entries (node, cutting)	Class calendar Scissors Plastic cup Lid with holes Stem Teacher sheet no. 9 Student sheet no. 10
New Plants **Investigation 3** **Part 2**	**New Plants** **Investigation 3** **Part 2**	**New Plants** **Investigation 3** **Part 2**
Students will be able to plant rooted shoots to produce new plants from	<u>New Plants from Cuttings</u> • Review the success of the cuttings	Liquid plant fertilizer Plastic flower pots (supplied by teacher)

old. Students will be able to discover the conditions that induce root growth on plants.	• Discuss soil • Show the flowerpots • Prepare to plant the cuttings • Remove the cuttings from the cup • Plant the cuttings • Clean up • Decide where to put the new plants • Make a calendar entry • Observe growth United Streaming Video: Bulbs and Cuttings (1:16)	Coasters for flower pots (supplied by teacher) Potting soil (supplied by teacher) Plastic cup with cuttings Pitcher or 2-liter soda bottle (supplied by teacher) Water Scissors Pencil Class calendar Camera and film (optional)
New Plants **Investigation 3** **Part 3**	**New Plants** **Investigation 3** **Part 3**	**New Plants** **Investigation 3** **Part 3**

Students will be able to record observations using the techniques of drawing and labeling.	Spuds • Discuss potatoes • Introduce the potato as a stem • Form groups and assign getters • Distribute potatoes for observation • Discuss observations • Propose planting potato eyes • Distribute containers and labels • Put out soil • Distribute potato pieces • Plant the potatoes • Water the spuds • Find a place for the spuds • Make a class calendar entry • Observe over time • Assess progress: teacher observation • Discuss the potatoes • Conclude the investigation • Make word bank entries (potato eyes) United Streaming Video: Potato Pixie (7:24)	Vial Removable label Containers Potato, small white (supplied by teacher) Basins Paring knife Potting soil (supplied by teacher) Large plastic bag (supplied by teacher) Newspaper Water (supplied by teacher) Scissors (supplied by teacher) Large flower pot (optional) Class calendar Camera and film (optional) Small plastic bags (optional) **Investigation 3 Part 3** Help grow different vegetables. Be able to tell when the not enough water, food, and air. http://www.scholastic.com/play/root.htm Plant different vegetables and watch them grow. http://www.fossweb.com/modulesK-2/NewPlants/activities/watchitgrow.html
New Plants Investigation 4	**New Plants** **Investigation 4**	**New Plants** **Investigation 4**

Part 1	Part 1	Part 1
Students will be able to initiate the growth of a new plant from a bulb.	Bulbs • Discuss bulbs • Show cups, lids, and cotton • Distribute onion or garlic bulbs • Distribute cotton balls • Plant and water onion or garlic bulbs • Label and cover the cups • Show a bisected onion or garlic bulb • Place the bulbs in a safe place • Make a calendar entry • Plan to observe growth • Distribute student sheet no. 11 • Assess progress: Student sheet • Discuss the bulbs • Add word bank entries (bulb, onion, garlic) • Read science stories, "Plants and Animals Around the World" • Continue to grow bulbs United Streaming Video: Bulbs (00:40)	Student Sheet no. 11 Paper towel (supplied by teacher) Small plastic bag (supplied by teacher) Plastic cup Lid with holes Cotton balls Container Vial Removable label Onion or garlic bulbs (supplied by teacher) Class Calendar FOSS science story, "Plants and Animals Around the W part 1) Paring knife (supplied by teacher) Water Scissors

New Plants **Investigation 4** **Part 2**	**New Plants** **Investigation 4** **Part 2**	**New Plants** **Investigation 4** **Part 2**
Students will be able to initiate the growth of a new plant from a root or part of a root. Students will be able to record observations using the techniques of drawing and labeling.	<u>Planting Roots</u> • Discuss roots • Introduce the roots • Propose making new plants from old • Form groups and assign getters • Assign plants • Distribute roots fro observation • Distribute cups and labels • Review how to cut the roots • Cut the roots • Plant the parts • Water the plant parts • Find a place for the plants • Make a class calendar entry • Observe and discuss • Discuss root growth • Conclude the investigation • Assess progress: teacher observation • Clean up • Make word bank entries (radish and carrot) • Read Science story, “Animal Teeth”	Plastic cup Removable label Carrot or radish (supplied by teacher) Student sheet no. 12 Container Vial Pencil Vermiculite, 4 liters FOSS Science story, “Animal Teeth” (read after part 2) Paring knives (supplied by teacher) Camera and film (optional) Plastic bags (optional)

New Plants Unit Assessment	New Plants **Unit Assessment**	New Plants **Unit Assessment**
Students will be able to draw a picture of a plant and label its parts.	Assessment • End of Unit Assessment Master	End of Unit Assessment Master
Students will be able to identify the elements a plant needs to grow.		**Enhancement/Enrichment for EG students**: Read about chlorophyll and how it helps plants grow. http://www.treetures.com/Chlors/Chlorspage1.html
Students will be able to order pictures to show a seed grows.		
Students will be able to show an understanding of the key vocabulary for the unit.		

Other Details

SCED

53231 Science
Science (Grade 1) courses allow students to identify interactions and patterns in objects and events and to record observations in written or visual form. Typically, students investigate systems of living organisms and the environment.