

**Secaucus
Board of
Education**

Grade 3 Science Curriculum

Course Code: 4311

Curriculum and Instruction Department



Born on August, 2015
Aligned to the New Jersey Student Learning
Standards – Science (2016)
Approved by the Secaucus Board of Education
on August 27, 2015

District Equity Statement

The Board of Education directs that all students enrolled in the schools of this district shall be afforded equal educational opportunities in strict accordance with the law. No students shall be denied access to or benefit from any educational program or activity or from a co-curricular or athletic activity on the basis of the student's race, color, creed, religion, national origin, ancestry, age, marital status, affectional or sexual orientation, gender, gender identity or expression, socioeconomic status, or disability...The Board directs the Superintendent to allocate faculty, administrators, support staff members, curriculum materials, and instructional equipment supplies among and between the schools and classes of this district in a manner that ensures equivalency of educational opportunity throughout this district. The school district's curricula in the following areas will eliminate discrimination, promote mutual acceptance and respect among students, and enable students to interact effectively with others, regardless of race, color, creed, religion, national origin, ancestry, age, marital status, affectional or sexual orientation, gender, gender identity or expression, socioeconomic status, or disability:

1. School climate/learning environment
2. Courses of study, including Physical Education
3. Instructional materials and strategies
4. Library materials
5. Software and audio-visual materials
6. Guidance and counseling
7. Extra-curricular programs and activities
8. Testing and other assessments.

Excerpt from Secaucus Board of Education, Policy 5750, Edited September 2016

Third Grade Science Course Descriptions

The third grade Science Curriculum is taught using *New Jersey Center for Teaching and Learning Progressive Science Initiative* coursework. All components of these units present a balance of Biological, Physical, Earth/Space and Environmental Science topics. The units covered in this course include: Weather, Forces, Growth and Development, Inheritance of Traits, and Ecosystems. All courses are designed to prepare students for The New Jersey Assessment of Skills and Knowledge (NJASK4), their middle school science courses, and to solve scientific problems and issues in their everyday lives.

The material is presented at a moderate pace. Lessons are based on discussions and student- driven activities. Hands-on activities are meant to show connections to real-life science applications and to promote critical thinking and problem solving skills. Students who are placed in this course based on ESL placement will also receive accommodations that are suitable to their ESL level. Students receiving Special Education services will receive modifications and accommodations to information and assessments as indicated in their Individual Education Plan.

Course Modifications (ELLs, Special Education, Gifted and Talented)

The course instructor will determine, with the assistance of guidance counselors, teacher assistant/aides, and/or special education teachers, what modifications will be made for his/her students. Such examples of modifications can include, but not be limited to:

- Extended time as needed
- Modification of tests and quizzes
- Preferential seating
- Alternative/Formative assessment (projects)
- Effective teacher questioning (ranging from simple recall to higher order critical thinking questions)
- Supplemental materials
- Cooperative learning
- Teacher tutoring
- Peer tutoring

- Differentiated Instruction

Interdisciplinary Connections

The following Common Core Standards for ELA and Mathematics depict what standards align to the science standards taught in this 3rd Grade Science Course.

Common Core - ELA/Literacy:

- RI.3.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. (3-PS2-1),(3-PS2-3)
- RI.3.3 Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect. (3-PS2-3)
- RI.3.8 Describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence). (3-PS2-3)
- W.3.7 Conduct short research projects that build knowledge about a topic. (3-PS2-1),(3-PS2-2)
- W.3.8 Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories. (3-PS2- 1),(3-PS2-2)
- SL.3.3 Ask and answer questions about information from a speaker, offering appropriate elaboration and detail. (3-PS2-3)
- RI.3.7 Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur). (3-LS1-1)
- SL.3.5 Create engaging audio recordings of stories or poems that demonstrate fluid reading at an understandable pace; add visual displays when appropriate to emphasize or enhance certain facts or details. (3-LS1-1)

- RI.3.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. (3-LS2-1) RI.3.3 Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect. (3-LS2-1)
- W.3.1 Write opinion pieces on topics or texts, supporting a point of view with reasons. (3-LS2-1)
- RI.3.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. (3-LS3-1),(3-LS3-2)
- RI.3.2 Determine the main idea of a text; recount the key details and explain how they support the main idea. (3-LS3-1),(3-LS3-2) RI.3.3 Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect. (3-LS3-1),(3-LS3-2)
- W.3.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly. (3-LS3-1),(3-LS3-2) SL.3.4 Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace. (3-LS3-1),(3-LS3-2)
- RI.3.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. (3-LS4-1),(3-LS4-2),(3-LS4-3) (3-LS4-4)
- RI.3.2 Determine the main idea of a text; recount the key details and explain how they support the main idea. (3-LS4-1),(3-LS4-2),(3-LS4-3),(3-LS4-4)
- RI.3.3 Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect. (3-LS4-1),(3-LS4-2),(3-LS4-3),(3-LS4-4)
- W.3.1 Write opinion pieces on topics or texts, supporting a point of view with reasons. (3-LS4-1),(3-LS4-3),(3-LS4-4)
- W.3.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly. (3-LS4-1),(3-LS4-2),(3-LS4-3),(3-LS4-4)

- W.3.8 Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories. (3-LS4-1) SL.3.4 Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace. (3-LS4- 2),(3-LS4-3),(3-LS4-4)
- RI.3.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. (3-ESS2-2)
- RI.3.9 Compare and contrast the most important points and key details presented in two texts on the same topic. (3-ESS2-2)
W.3.8 Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories. (3- ESS2-2)
- W.3.1 Write opinion pieces on topics or texts, supporting a point of view with reasons. (3-ESS3-1)
- W.3.7 Conduct short research projects that build knowledge about a topic. (3-ESS3-1)
- RI.5.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (3-5-ETS1-2)
- RI.5.7 Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (3-5- ETS1-2)
- RI.5.9 Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (3-5-ETS1-2)
- W.5.7 Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic. (3-5-ETS1-1),(3-5-ETS1-3)
- W.5.8 Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work, and provide a list of sources. (3-5-ETS1-1),(3-5-ETS1-3)

- W.5.9 Draw evidence from literary or informational texts to support analysis, reflection, and research. (3-5-ETS1-1),(3-5-ETS1-3)

Common Core - Mathematics:

- MP.2 Reason abstractly and quantitatively. (3-PS2-1) MP.5 Use appropriate tools strategically. (3-PS2-1)
- 3.MD.A.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. (3-PS2-1)
- MP.4 Model with mathematics. (3-LS1-1) 3.NBT Number and Operations in Base Ten (3-LS1-1)
- 3.NF Number and Operations—Fractions (3-LS1-1)
- MP.4 Model with mathematics. (3-LS2-1)
- 3.NBT Number and Operations in Base Ten (3-LS2-1)
- MP.2 Reason abstractly and quantitatively. (3-LS3-1),(3-LS3-2) MP.4 Model with mathematics. (3-LS3-1),(3-LS3-2)
- 3.MD.B.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters. (3-LS3-1),(3-LS3-2)
- MP.2 Reason abstractly and quantitatively. (3-LS4-1),(3-LS4-2),(3-LS4-3),(3-LS4-4)
- MP.4 Model with mathematics. (3-LS4-1),(3-LS4-2),(3-LS4-3),(3-LS4-4)
- MP.5 Use appropriate tools strategically. (3-LS4-1)

- 3.MD.B.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. (3-LS4-2),(3-LS4-3)
- 3.MD.B.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters. (3-LS4-1)
- MP.2 Reason abstractly and quantitatively. (3-ESS2-1),(3-ESS2-2)
- MP.4 Model with mathematics. (3-ESS2-1),(3-ESS2-2)
- MP.5 Use appropriate tools strategically. (3-ESS2-1)
- MP.2 Reason abstractly and quantitatively. (3-5-ETS1-1),(3-5-ETS1-2),(3-5-ETS1-3)
- MP.4 Model with mathematics. (3-5-ETS1-1),(3-5-ETS1-2),(3-5-ETS1-3)
- MP.5 Use appropriate tools strategically. (3-5-ETS1-1),(3-5-ETS1-2),(3-5-ETS1-3)
- 3-5.OA Operations and Algebraic Thinking (3-5-ETS1-1),(3-5-ETS1-2)
- 3.MD.A.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. (3-ESS2-1)
- 3.MD.B.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in bar graphs. (3-ESS2-1)
- MP.2 Reason abstractly and quantitatively. (3-ESS3-1)
- MP.4 Model with mathematics. (3-ESS3-1)

3rd Grade Science Curriculum

Unit 1: Weather and Climate	Unit 2: Forces and Interactions
<p>ESS2.D: Weather and Climate</p> <ul style="list-style-type: none"> ● Scientists record patterns of the weather across different times and areas so that they can make predictions about what kind of weather might happen next. (3-ESS2-1) ● Climate describes a range of an area's typical weather conditions and the extent to which those conditions vary over years. (3-ESS2-2) 	<p>PS2.A: Forces and Motion</p> <ul style="list-style-type: none"> ● Each force acts on one particular object and has both strength and a direction. An object at rest typically has multiple forces acting on it, but they add to give zero net force on the object. Forces that do not sum to zero can cause changes in the object's speed or direction of motion. (Boundary: Qualitative and conceptual, but not quantitative addition of forces are used at this level. (3-PS2-1) ● The patterns of an object's motion in various situations can be observed and measured; when that past motion exhibits a regular pattern, future motion can be predicted from it (Boundary: Technical terms, such as magnitude, velocity, momentum, and vector quantity, are not introduced at this level, but the concept that some quantities need both size and direction to be described is developed.) (3-PS2-2) <p>PS2.B: Types of Interactions</p> <ul style="list-style-type: none"> ● Objects in contact exert forces on each other. (3-PS2-1) ● Electric and magnetic forces between a pair of objects do not require that the objects be in contact. The sizes of the forces in each situation depend on the properties of the objects and their distances apart and, for forces between two magnets, on their orientation relative to each other. (3-PS2-3), (3-PS2-4)
Unit 3: Growth and Development of Organisms	Unit 4: Inheritance of Traits
LS1.B: Growth and Development of Organisms	LS3.A: Inheritance of Traits

<ul style="list-style-type: none"> ● Reproduction is essential to the continued existence of every kind of organism. Plants and animals have unique and diverse life cycles.(3-LS1-1) 	<ul style="list-style-type: none"> ● Many characteristics of organisms are inherited from their parents.(3-LS3-1) ● Other characteristics result from individuals’ interactions with the environment, which can range from diet to learning. Many characteristics involve both inheritance and environment.(3-LS3-2) <p>LS3.B: Variation of Traits</p> <ul style="list-style-type: none"> ● Different organisms vary in how they look and function because they have different inherited information.(3-LS3-1) ● The environment also affects the traits that an organism develops (3LS3-2)
<p>Unit 5: Ecosystems: Group Behavior</p>	
<p>LS2.D:Social Interactions and Group Behavior</p> <ul style="list-style-type: none"> ● Being part of a group helps animals obtain food, defend themselves, and cope with changes. Groups may serve different functions and vary dramatically in size (Note: Moved from K–2). (3-LS2-1) 	

Unit 1 – Earth’s Systems			
Teacher:	SBOE Faculty	Time Frame:	20 days
Grade:	3	School:	SBOE
Subject:	Science		
NJSLS - SCIENCE/DCI	<p>ESS2.D: (3-ESS2-1) Scientists record patterns of the weather across different times and areas so that they can make predictions about what kind of weather might happen next.</p> <p>(3-ESS2-2) Climate describes a range of an area’s typical weather conditions and the extent to which those conditions vary over years.</p>		
Instructional Objective: 3-ESS2-1	Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.		
Instructional Objective: 3-ESS2-2:	Obtain and combine information to describe climates in different regions of the world.		
Essential Questions			
(What questions will the student be able to answer as a result of the instruction?)			
<ol style="list-style-type: none"> 1. What factors affect daily weather? 2. What factors affect an area’s climate? 3. How can data be used to determine the climate of various regions? 			
Knowledge & Skills			
(What skills are needed to achieve the desired results?)			
By the end of this unit, students will know:		By the end of this unit, students will be able to:	
<ul style="list-style-type: none"> ● Weather includes temperature, precipitation, and wind on a day to day basis. ● Climate is the typical weather patterns over many years. 		<ul style="list-style-type: none"> ● Predict weather conditions based on information collected. ● Analyze and interpret data to understand what is the climate in different parts of the world ● Ask questions about what caused changes in weather patterns. 	

<ul style="list-style-type: none"> • How to use tools such as a thermometer, rain gauge, and wind vane to collect weather data. • Climates vary around the world due to different amounts of rain, varying temperatures, and wind patterns. 	<ul style="list-style-type: none"> • Collect data using tools such as thermometers, rain gauge, and a wind vane.
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Assessment

Acceptable evidence to show desired results

During the Smart Notebook lesson designed to introduce concepts, students will be continually questioned on these concepts using a combination of class work/homework questions and the SMART Response system. Classwork and Homework questions will be discussed as a class and misconceptions will be addressed by the teacher prior to the formal evaluations listed below.

Activity: Collecting Weather Data

Activity: Thermometer

Demo: Water Cycle in a Jar

Demo: Cloud in a Jar

Quiz 1: Temperature and Precipitation

Demo: Toasty Wind

Demo: Convection

Analyzing Weather Data

Quiz 2: Wind and Weather Prediction

Climate Zone Project			
Unit Test			
PBA			
Suggested Sequence of Topic and Daily Activities			
Day	Topic	Classwork	Homework
1	Intro to Weather & Climate	Slide 5; Activity: Collecting Weather Data	N/A
2	Intro to Weather & Climate	Slides 6-12; Weather & Climate Classwork	Weather & Climate Homework
3	Temperature	Slides 13-21; Temperature Classwork	Temperature Homework
4	Temperature	Slides 22-23; Activity: Thermometer	Finish Activity Questions
5	Precipitation	Slides 24-27; Demo: Water Cycle in a Jar	N/A

6	Precipitation	Slides 28-35	N/A
7	Precipitation	Slides 36-47; Demo: Cloud in a Jar	N/A
8	Precipitation	Slides 48-49; Precipitation Classwork	Precipitation Homework
9	Wind	Slides 50-56; Demo: Toasty Wind	Study for quiz
10	Temp, Precipitation; Wind	Quiz 1; Slide 57; Demo: Convection	Finish Convection Analysis questions
11	Wind	Slides 58-66; Wind Classwork	Wind Homework
12	Weather Prediction	Slides 67-84	N/A
13	Weather Prediction	Slides 85-90; Weather Prediction Classwork	Weather Prediction Homework
14-15	Weather Prediction	Slide 91; Activity: Analyzing Weather Data	N/A
16	Climate	Slides 92-102	Study for quiz

17	Wind, Weather Prediction	Quiz 2; Climate Classwork	Climate Homework
18	Climate	Climate Zone Project	Finish Climate Zone Project
19	Unit Review	Study Guide; Unit Review	Study for test
20	Unit Test	Unit Test	N/A

*While there are many slides for each topic, several slides are interrelated and support each topic.

**HW Problems are currently not scaffolded from least to most difficult, but are instead listed in order of topic.

***Lessons are based on 40 minute periods and may need to be adjusted to fit the schedule of your school.

Unit 2 – Motion and Stability

Teacher:	SBOE Faculty	Time Frame:	24 days
Grade:	3	School:	SBOE
Subject:	Science		
NJSLS - SCIENCE/DCI PS2.A: Forces and Motion	<p>Each force acts on one particular object and has both strength and a direction. An object at rest typically has multiple forces acting on it, but they add to give zero net force on the object. Forces that do not sum to zero can cause changes the object’s speed or direction of motion.(3-PS2-1)</p> <p>The patterns of an object’s motion in various situations can be observed and measured; when that past motion exhibits a regular pattern, future motion can be predicted from it.(3-PS2-2)</p>		
PS2.B: Types of Interactions	<p>Objects in contact exert forces on each other. (3-PS2-1)</p> <p>Electric, and magnetic forces between a pair of objects do not require that the objects being contact. The sizes of the forces in each situation depend on the properties of the objects and their distances apart and, for forces between two magnets, on their orientation relative to each other. (3-PS2-3),(3-PS2-4)</p> <p>http://www.nextgenscience.org/3ps2-motion-stability-forces-interactions</p>		
Instructional Objective: 3-PS2-1	Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.		
Instructional Objective: 3-PS2-2	Make observations and/or measurements of an object’s motion to provide evidence that a pattern can be used to predict future motion.		
Instructional Objective: 3-PS3-3	Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other.		
Instructional Objective: 3-PS3-4	Define a simple design problem that can be solved by applying scientific ideas about magnets.		

Essential Questions	
(What questions will the student be able to answer as a result of the instruction?)	
4. How and why do objects move?	
Knowledge & Skills	
(What skills are needed to achieve the desired results?)	
<p>By the end of this unit, students will know:</p> <ul style="list-style-type: none"> ● Forces are pushes and pulls ● Motion occurs in predictable patterns ● The cause and effect relationships of electric interactions ● The cause and effect relationships of magnetic interactions ● Magnets can be used to solve design problems 	<p>By the end of this unit, students will be able to:</p> <ul style="list-style-type: none"> ● Plan and conduct investigations about forces ● Make observations and measurements of motion ● Ask questions about electric and magnetic interactions ● Define a problem that can be solved with magnets
Assessment	
Acceptable evidence to show desired results	
<p>During the Smart Notebook lesson designed to introduce concepts, students will be continually questioned on these concepts using a combination of class work/homework questions and the SMART Response system. Classwork and Homework questions will be discussed as a class and misconceptions will be addressed by the teacher prior to the formal evaluations listed below.</p> <p>Lab 1: Distance, Time Speed</p> <p>Quiz #1</p> <p>Lab 2: Balanced & Unbalanced Forces</p> <p>Quiz #2</p>	

Lab 3: Predicting Motion

Quiz #3

Lab 4: Magnetic Interactions

Lab 5: Magnetic Racing Lab

Quiz #4

Lab 6: Electricity

Lab 7: Building with Magnets Lab

Unit Test

Performance Based Assessment

Suggested Sequence of Topic and Daily Activities			
Day	Topic	Classwork	Homework
1	Forces and Motion Review	Slides 1-28	
2	Forces and Motion Review	Lab: Distance, Time and Speed Slide 29 Student Lab Sheet	Finish Student Lab Sheet

4	Forces and Motion Review	Slides 30-43 Classwork #1	Homework #1
5	Forces and Motion Review	Quiz #1	
6	Balanced and Unbalanced Forces	Slides 44-64 Classwork #2	Homework #2
7	Balanced and Unbalanced Forces	Balanced and Unbalanced Forces Lab Slide 65-66 Student Lab Sheet	
8	Balanced and Unbalanced Forces	Quiz #2	
9	Motion Prediction From Patterns	Predicting Motion Lab Slide 68-69 Student Lab Sheet	Finish Student Lab Sheet
10	Motion Prediction From Patterns	Slides 70-77 Classwork #3	Homework #3
11	Motion Prediction From Patterns	Quiz #3	

12	Non Contact Forces	Slides 78-84 Magnetic Interactions Lab Slide 85-87	
13	Magnetism	Slides 89-94	
14	Magnetism	Magnetic Racing Lab Slide 95	
15	Electric Force	Slides 96-103 Classwork #4	Homework #4
16	Non Contact Forces	Quiz #4	
17	Electric Force	Electricity Lab Slide 104-105	
18	Building with Magnets	Building with Magnets Lab Slide 106	
19	Unit Test Review	Test Study Guide	Finish Study Guide
20-21	Unit Test	Unit Test and Performance Based Assessment	N/A

*While there are many slides for each topic, several slides within the notebook are hidden and won't be used during instructional time.

**HW Problems are currently not scaffolded from least to most difficult, but are instead listed in order of topic.

***Lessons are based on 40 minute periods and may need to be adjusted to fit the schedule of your school.

Unit 3 – Growth and Development of Organisms

Teacher:	SBOE Faculty	Time Frame:	18 days
Grade:	3	School:	SBOE
Subject:	Science		
NJSLS - SCIENCE DCI LS1.B: Growth and Development of Organisms	Reproduction Is essential to the continued existence every kind of organism. Plants and animals have unique and diverse lifecycles.(3-LS1-1) http://www.nextgenscience.org/3ls1-molecules-organisms-structures-processes		
Instructional Objective: 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.		
Essential Questions			
(What questions will the student be able to answer as a result of the instruction?)			
5. What is a life cycle? 6. What changes do organisms go through during their life cycle? 7. How is a plant life cycle similar to an animal’s life cycle? How is it different? 8. Why do organisms reproduce?			
Knowledge & Skills			
(What skills are needed to achieve the desired results?)			
By the end of this unit, students will know: <ul style="list-style-type: none"> ● The pattern of life cycles include birth, growth, reproduction, and death ● Plant life cycles start with a seed ● Some animal life cycles start with an egg ● Plants develop different parts as they grow ● Animals change as they grow ● Plants and animals reproduce to create more 		By the end of this unit, students will be able to: <ul style="list-style-type: none"> ● Create a model of flowering plant life cycle ● Create a model of an animal life cycle ● Distinguish the similarities and differences between the life cycles of plants and animals 	

plants and animals ● Plants and animals die			
Assessment			
Acceptable evidence to show desired results			
<p>During the Smart Notebook lesson designed to introduce concepts, students will be continually questioned on these concepts using a combination of class work/homework questions and the SMART Response system. Classwork and Homework questions will be discussed as a class and misconceptions will be addressed by the teacher prior to the formal evaluations listed below.</p> <p>Lab 1: Seed Lab Part 1</p> <p>Quiz #1</p> <p>Lab 2: Seed Lab Part 2</p> <p>Lab 3: Seed Lab Part 3</p> <p>Quiz #2</p> <p>Lab 4: Animal Life Cycle Activity</p> <p>Quiz #3</p>			
Suggested Sequence of Topic and Daily Activity			
Day	Topic	Classwork	Homework
1	Plant Life	Seed Lab 1 Slide 4	

2	Living and Nonliving Things	Slides 5-12 Seed Observation Classwork #1	Homework #1
3	Life Cycles	Slides 13-19 Seed Observation	N/A
4	Plant Life	Slides 20-36 Seed Observation Review for quiz	Study for quiz
5	Living and Nonliving / Life Cycles	Quiz #1 Seed Observation Classwork #2	Homework #2
6	Plant Life	Seed Lab 2 Slide 37 Seed Observation	N/A
7	Flowers	Slides 38-54 Seed Observation Classwork #3	Homework #3
8	Plant Life	Seed Lab 3 Slide 55 Seed Observation	Study for quiz
9	Plant Life	Quiz 2 Seed Observations	Finish Seed Lab 3 questions

10	Animal Life	Slides 56-69 Seed Observations Classwork #4	Homework #4
11	Animal Life	Animal Life Cycle Activity Slide 70 Discuss Seed Lab 1	Study Guide
12	Animal Life	Quiz #3	
13	Unit Test Review	Review Study Guide Discuss Seed Lab 3	Study for Test
14-15	Unit Test	Unit Test & Performance Based Assessment	

*While there are many slides for each topic, several slides within the notebook are hidden and won't be used during instructional time.

**HW Problems are currently not scaffolded from least to most difficult, but are instead listed in order of topic. Teacher should pay special attention at the end of each class period when assigning HW so that only problems related to the topic that was taught are being assigned.

***Pacing guides are based on 40 minute periods, you may need to adjust based on your school's schedule.

Unit 4 – Inheritance of Traits			
Teacher:	SBOE Faculty	Time Frame:	15 days
Grade:	3	School:	SBOE
Subject:	Science		
NJSLS - SCIENCE DCI: LS3.A:Inheritance of Traits	<p>Many Characteristics of organisms are inherited from the parents.(3-LS3-1)</p> <p>Other characteristics result from individuals’ interactions with the environment, which can range from diet to learning. Many characteristics involve both inheritance and environment.(3-LS3-2)</p>		
LS3.B:Variation of Traits	<p>Different organisms vary in how they look and function because they have different inherited information.(3-LS3-1)</p> <p>The environment also affects the traits that an organism develops. (3-LS3-2)</p> <p>http://www.nextgenscience.org/3ls3-heredity-inheritance-variation-traits</p>		
Instructional Objective: 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.		
Instructional Objective: 3-LS3-2	Use evidence to support the explanation that traits can be influenced by the environment.		
Essential Questions			
(What questions will the student be able to answer as a result of the instruction?)			
9. Why do organisms look similar and different among generations?			
10. How does the environment affect genetic inheritance?			
Knowledge & Skills			
(What skills are needed to achieve the desired results?)			

<p>By the end of this unit, students will know:</p> <ul style="list-style-type: none"> ● Predatory defense, foraging, raising young and other tasks can be shared in a group to help the species survive. ● Solitary organisms have to collect resources and benefit particular organisms. ● Reproduction is necessary for all organisms. ● Variations in grouping affect the survival of organisms. 	<p>By the end of this unit, students will be able to:</p> <ul style="list-style-type: none"> ● Analyze an organism and determine how their social behavior helps their survival ● Ask questions about organisms and why they choose the social behavior they do.
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Assessment

Acceptable evidence to show desired results

During the Smart Notebook lesson designed to introduce concepts, students will be continually questioned on these concepts using a combination of class work/homework questions and the SMART Response system. Classwork and Homework questions will be discussed as a class and misconceptions will be addressed by the teacher prior to the formal evaluations listed below.

Lab 1: Mustard Seed Lab

Quiz 1: Inheritance of Traits

Lab 2: What Kind of SlythyTove?

Lab 3: Virtual Field Lab

Quiz 2: Environmental Effects on Traits

Unit Test: Inheritance of Traits

Suggested Sequence of Topic and Daily Activities

Day	Topic	Classwork	Homework
1	Traits	Slides 4-13 Offspring Matching Classwork	Traits Homework
2	Environmental Effects on Traits	Slide 14 Mustard Seed Lab setup	N/A
3	Inheritance of Traits	Slides 15-21 For the Love of Cows Classwork	Finish Cow Classwork
4	Variation of Traits	Slide 22-29	N/A
5	Variation of Traits	Slide 30 What Kind of SlythyTove Lab	Complete Lab Study for quiz
6	Inheritance of Traits	Inheritance of Traits Quiz Create Mustard Seed Experiment Conditions	N/A
7	Environmental Effects on Traits	Slide 31-43 Mustard Seed Observation	N/A

8	Environmental Effects on Traits	Slide 44 Virtual Field Lab Mustard Seed Observation	Complete lab questions
9	Environmental Effects on Traits	Mustard Seed Observations & Conclusion	Study for quiz
10	Environmental Effects on Traits	Environmental Effects on Traits Quiz; Study Guide	Finish Study Guide
11	Unit Review	Slides 45-48, Review Study Guide	Study for Test
12-13	Unit Test	Unit Test & Performance Based Assessment	

*While there are many slides for each topic, several slides are interrelated and support each topic.

**HW Problems are currently not scaffolded from least to most difficult, but are instead listed in order of topic.

***Lessons are based on 40 minute class periods, you may need to be adjusted based on your school's schedule.

Unit 5 – Ecosystems: Group Behavior

Teacher:	SBOE Faculty	Time Frame:	12 Days
Grade:	3	School:	SBOE
Subject:	Science		
NJSLS - SCIENCE/DCI LS2.D: Social Interactions and Group Behavior	<p>Being part of a group helps animals obtain food, defend themselves, and cope with changes. Groups may serve different functions and vary dramatically in size (<i>Note: Moved from K-2</i>). (3-LS2-1)</p> <p>http://www.nextgenscience.org/3ire-interdependent-relationships-ecosystems</p>		
Instructional Objective: 3-LS2-1	Construct an argument that some animals form groups that help members survive.		
Essential Questions			
(What questions will the student be able to answer as a result of the instruction?)			
<ul style="list-style-type: none"> 11. What are the advantages of group living? 12. What are the disadvantages of group living? 13. How do animal groups differ from one another? 			

Knowledge & Skills	
(What skills are needed to achieve the desired results?)	
<p>By the end of this unit, students will know:</p> <ul style="list-style-type: none"> ● Animals either are either solitary or live in groups. ● Animals cannot spend their entire lives alone; they need each other in order to breed. ● Living in a group has advantages. ● Living in a group has disadvantages. ● Animal groups form for different reasons. ● Animal groups vary widely in size, even among the same species. 	<p>By the end of this unit, students will be able to:</p> <ul style="list-style-type: none"> ● Understand advantages of group living through experience working in a group. ● Understand disadvantages of group living through experience working in a group or observing others work in a group. ● Explain some animal behavior in relation to group or solitary living.
Assessment	
Acceptable evidence to show desired results	
<p>During the Smart Notebook lesson designed to introduce concepts, students will be continually questioned on these concepts using a combination of classwork/homework questions and the SMART Response system. Classwork and Homework questions will be discussed as a class.</p> <p>Lab 1: Solitary Versus Group</p> <p>Quiz 1: Advantages of Group Living</p> <p>Lab 2: Who has the Advantage?</p>	

Quiz 2: Disadvantages of Group Living and Group Differences

Performance Based Assessment

Unit Test

Suggested Sequence of Topic and Daily Activities

Day	Topic	Classwork	Homework
1	How do Animals Live?	Slides 1-12	
2	How do Animals Live?	Slides 13 - 29; Classwork #1	Homework #1
3	Lab 1: Solitary Versus Group	Slide 30; Lab Questions	Conclusion Questions
4	Advantages of Group Living	Slides 31-50; Classwork #2	Homework #2
5	Lab 2: Who has the Advantage?	Slide 51; Lab Questions	Conclusion Questions Study for Quiz
6	Quiz: Advantages of Group Living; Disadvantages of Group Living	Quiz#1: Slides 52-56	
7	Disadvantages of Group Living	Quiz#1: Slides 57-68; Classwork #3	Homework #3

8	Group Differences	Slides 69-78; Classwork #4	Homework #4; Study for Quiz
9	Quiz: Disadvantages of Group Living and Group Differences; Performance Based Assessment	Quiz #2; Study Guide	Study Guide
10	Unit Test Review	Review Game	Study for Test
11-12	Unit Test	Test & Performance Based Assessment	

*While there are many slides for each topic, several slides are interrelated and support each topic.

**HW Problems are currently not scaffolded from least to most difficult, but are instead listed in order of topic.

***Lessons are based on 40 minute periods and may need to be adjusted to fit the schedule of your school.