

**Unit 3—Plant Diversity (FOSS® New Plants) Life Science****Essential Question: How are plants alike and different?**

**Major Understandings:** *Quoted from New York State Performance Indicators*

**(Note: Correlation is provided at the level of FOSS® “Investigation & Part.” All “Steps” of an investigation must be completed to meet the standard.)**

**LE 1.1 Describe the characteristics of and variations between living and nonliving things.**

1.1b Plants require air, water, nutrients, and light in order to live and thrive.

**LE 1.2 Describe the life processes common to all living things.**

1.2a Living things grow, take in nutrients, breathe (**exchange gases**), reproduce, eliminate waste, and die.

**LE 2.1 Recognize that traits of living things are both inherited and acquired or learned.**

2.1a Some traits of living things have been inherited (e.g., color of flowers and number of limbs of animals).

**LE 2.2 Recognize that for humans and other living things there is genetic continuity between generations.**

2.2a Plants and animals closely resemble their parents and other individuals in their species.

2.2b Plants and animals can transfer specific traits to their offspring when they reproduce.

**LE 3.1 Describe how the structures of plants and animals complement the environment of the plant or animal.**

3.1b Each plant has different structures that serve different functions in growth, survival, and reproduction.

- roots help support the plant and take in water and nutrients
- leaves help plants utilize sunlight to make food for the plant
- stems, stalks, trunks and other similar structures provide support for the plant
- some plants have flowers
- flowers are reproductive structures of plants that produce fruit which contains seeds
- seeds contain stored food that aids in germination and the growth of young plants

## Grade 2

**LE 4.1 Describe the major stages in the life cycles of selected plants and animals.**

- 4.1a Plants and animals have life cycles. These may include beginning of a life, development into an adult, reproduction as an adult and eventually death.
- 4.1b Each kind of plant goes through its own stages of growth and development that may include seed, young plant, and mature plant.
- 4.1c The length of time from the beginning of development to death of the plant is called its life span.
- 4.1d Life cycles of some plants include changes from seed to mature plant.

**LE 5.1 Describe basic life functions of common living specimens (e.g., guppies, mealworms, gerbils).**

- 5.1a All living things grow, take in nutrients, breathe (**exchange gases**), reproduce, and eliminate waste.

**LE 5.2 Describe some survival behaviors of common living specimens.**

- 5.2a Plants respond to changes in their environment. For example, the leaves of some green plants change position as the direction of light changes; the parts of some plants undergo seasonal changes that enable the plant to grow; seeds germinate and leaves form and grow.

**Consult the FOSS<sup>®</sup> Balance and Motion Teacher Guide:**

- Overview: Science Background, pp. 3-6. This module is about reproduction of plants—producing new plants from seeds, cuttings, stems and bulbs—and understanding the parts and life cycle of plants. Review the Science Background for a synopsis of content information on the plant kingdom.

The New Plants module is rich with opportunities for developing language concepts. This perspective is addressed in the Overview: Science for Young Children, and Organizing the Classroom sections.

- There are two student journal calendars (Growth of Brassica, Growing a Lawn) (see note, Overview, p. 9) that are kept for Investigations 1 and 2 where each student can record plant development of their individual plants. The class calendar can be used to model this recording and can be used for Investigations 3 and 4 where students share containers for their plants. It is usually helpful to have a Class Calendar to that can be correlated to student recording on either the Investigation Duplication Master sheets or in an autonomous student notebook.

**Timing the New Plants Module – Winter and Spring Break Considerations**

Refer to the chart on p. 16 of the Overview: Scheduling the New Plants Module. It takes approximately 5 weeks to complete Investigations 1 and 2; and another 5 weeks to complete Investigations 3 and 4. This guide is written for 12 weeks to allow more time for growth and student recording.

## Grade 2

**Consider beginning Investigations 1 and 2 so you will complete them before the Spring Break.**

In the last part of Investigation 1, the Brassica plants form seedpods that are allowed to dry for about 2 weeks so the pods can be picked and the seeds can be harvested. *When the pods are formed and the ends of the pods are changing from green to brown, it is time to stop watering and the plants can be left unattended over the Spring Break.*

Investigations 3 and 4 can be started when you return from break.

**Note that “Investigation 1: Brassica Seeds” uses a COOL (Fluorescent) PLANT LIGHT that must stay ON (24 hours per day, 7 days a week) for the duration of the experiment. Be sure to discuss this with your Principal and Custodial Staff so that the growth of the plants is not compromised by lighting interruptions.**

**Materials, Review “Materials Supplied by the Teacher” (items not included in your kit) and “Preparing the Kit for Your Classroom,” pp. 4-7.**

- **View the FOSS New Plants Module Introduction and Before You Begin segments of the FOSS Teacher Preparation Video / DVD (also available online at <http://www.fossweb.com/modulesK-2/NewPlants/index.html> .**
  - **Collect the “Materials Supplied by the Teacher” needed to prepare a new kit.** Many items will be gathered from your classroom.
    - ~ **POTTING SOIL – purchase inexpensive soil, (i.e., top soil), without added fertilizers or additives. Students will plant small seeds that may be difficult to recognize if the potting soil contains vermiculite, Perlite and/or fertilizer granules or additives. The amount of soil needed is:**
      - Investigation 1: 4 liters (4 quarts)**
      - Investigation 2: 4 liters (4 quarts)**
      - Investigation 3: 6 liters (6 quarts)**
      - (Investigation 4 uses vermiculite as the potting media. It is provided in the kit.)**

## NOTE:

1. You may purchase soil for Investigations 1 and 2 and reuse the soil for Investigation 3. (Purchase a bit extra.)
2. Suggestion: Purchase a container with lid to keep the soil for next year.

## Grade 2

- **Purchase POTATOES (8-10 small “white” (i.e., white *inside* – red skin, russet, Idaho, or “new” potatoes) per class. Make this purchase when you begin Investigation 1.** The potatoes must have “eyes” by the time you conduct Investigation 3, Part 3. (Red potatoes seem to sprout eyes a bit faster than other varieties.)
- **Plan to obtain plant CUTTINGS (Investigation 3).** See Investigation Duplication Masters Nos. 1 and 9
- **Plan to obtain garlic or onion bulbs (1 per student plus a few extra for the class) (Investigation 4, Part 1, Page 8).** See Investigation 4, Getting Ready, Step. 3.
- Plan to obtain 9-10 radishes and 9- 10 carrots WITH TOPS (Investigation 4, Part 2, Page 14). **See Investigation 4, Getting Ready, Step 3.**

### Consider Recording Observations:

Download the Science Notebook Folio on the Teacher Resources page at [www.fossweb.com/NYC](http://www.fossweb.com/NYC) for more information. Focus/Inquiry questions are found in the “At A Glance” Chart for each Investigation. Use of a student notebook will reinforce the standards addressed in Unit 3 which ask students to “DESCRIBE” their observations of living organisms (plants).

The Investigation Duplication Masters in this unit can be used to put “mini” notebooks together for each of the Investigations. This will help keep the sequence of each of the Investigations in order, rather than keeping chronological observations.

**If you choose to use a “Black Marble” notebook, consider sectioning it for the 4 Investigations before you begin the unit.**

Attention should be paid to having students use new content vocabulary to draw, label and describe their observations. Vocabulary summaries are provided at the end of the “Teaching Children About...” section of each investigation and at <http://www.fossweb.com/modulesK-2/NewPlants/index.html>. Follow the link to “Teacher/Parent Resources”, then “Vocabulary” to obtain pdf files for the New Plants Glossary and Glossary Terms.

### Consider “Interdisciplinary Extensions” in Language Arts, Math, Art and Science to accompany this module.

Review suggestions for fiction and nonfiction student reading in the Resources section of the New Plants Teacher Guide including:

*The Little Red Hen* by Paul Galdone. Houghton Mifflin Co., New York, 1991. This is the suggested reading to follow “The Story of Wheat,” read at the end of Investigation 2.

**NOTE:**

**The ideal beginning teaching sequence for beginning the New Plants module is:**

**Preassessment: The week before starting the New Plants module.**

**Lesson 1, 2, 3: Mon., Tues., Thurs. or Mon., Wed., Fri.**

The objective is to plant Brassica seeds and observe their germination approximately 48 hours after planting. Planting on a Friday should be avoided if possible, so that students can (informally) observe plants every day until germination.

Other notes are suggested for sequencing the observations of the Brassica, Lawns and Wheat planted in Investigations 1 and 2. The rate of growth of the plants in your classroom may require some adjustment to this schedule.

## Grade 2

<p><b>Preassessment (45 min)</b>  <b>Objective(s):</b>          Pre-assessment.</p>	<p><b>Alignment with NYS Core Curriculum:</b>          LE 3.1b</p>	
<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Note: Administration of the Pre-Test should be a few days BEFORE the start of the unit.</li> <li>– Teacher Guide, Assessment Folio, pp. 1-12</li> <li>– Kit preparation: See Teacher Guide, Materials, pp. 1-7 and Teacher Preparation Video or DVD (or view at <a href="http://www.fossweb.com/NYC">www.fossweb.com/NYC</a>).</li> <li>– Note: See Teacher Guide, Materials, pp. 4-5 for Materials Supplied by the Teacher.</li> <li>– <b>Gather materials as noted above for Investigations 1-4.</b></li> <li>– Review the <b>Overview</b> folio of the Teacher Guide taking special note of pp. 3-6: Science Background:          pp. 8-9: Science for Young Children          pp. 10-11: Organizing the Classroom;  <b>p. 16 Scheduling the New Plants Module</b>          p. 17: Safety in the Classroom          p. 18: New Plants Module Matrix.</li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Module Preassessment            Investigation 1: Brassica Seeds, Part 1: Introducing Recording, Getting Ready, p. 9, Step 4            (Refer to End of Module Interview Assessment Duplication Master No. 4)</li> <li>– Letter to Parents, Teacher Sheet No. 1</li> </ul> <p><b>Note:</b> The Letter to Parents in your Teacher Guide informs parents and caregivers about upcoming experiences for students. Two resources found on Fossweb.com will help you connect parents and caregivers to student learning.</p> <p>Log on to <a href="http://www.fossweb.com/nyc">www.fossweb.com/nyc</a> : Go to Grade 2, click on Balance and Motion. Click on “Teacher/Parent Info”:</p> <ol style="list-style-type: none"> <li>1. Download the “FOSS® at Home” Folio.</li> <li>2. Download the “Home School Connection” pdf file.</li> </ol>	<p style="text-align: center;"><b>Homework/ Extra Practice</b></p> <p>Send Home Letter to Parents.</p>

## Grade 2

	<p><b>Lesson 1 Monday</b> (45 min) <b>Introduce Student Recording</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>Plants are alive.</li> <li>Scientists use journals to record their observations.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b> LE 1.1b; 3.1b</p>	
<b>WEEK 1</b>	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>Teacher Guide Inv. 1: Brassica Seeds, pp. 1-7</li> <li>Teacher Guide Inv. 1: Brassica Seeds, Part 1: Introducing Recording, Materials and Getting Ready, pp. 8-10</li> <li>Consider Science Notebooks: Download the FOSS Science Notebooks folio at <a href="http://www.fossweb.com/nyc">www.fossweb.com/nyc</a>.</li> <li><a href="http://www.fossweb.com/NYC">www.fossweb.com/NYC</a> – Check website for interactive simulations, Audio Stories, to write questions to a scientist, for teaching tips, and other websites to support teaching <b>New Plants</b>.</li> </ul>	<p><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>Investigation 1: Brassica Seeds Part 1: Introducing Recording, pp. 11-12, Steps 1-6</li> <li>Investigation Duplication Master: Student Sheets Nos. 2, 3</li> <li>Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul>	<p><b>Homework/ Extra Practice</b></p>

## Grade 2

<b>WEEK 1 (continued)</b>	<p><b>Lesson 2 Tuesday (45 min) Plant Brassica</b></p> <p><b>Objective(s):</b> Plants need water, air, nutrients, and light to grow.</p>	<p><b>Alignment with NYS Core Curriculum:</b> LE 1.1b; 1.2a</p>	
	<p><b>Advanced Planning/ Notes to Teacher</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 1: Brassica Seeds, pp. 1-7</li> <li>– Teacher Guide Inv. 1: Brassica Seeds, Part 2: Planting Brassica, Materials and Getting Ready, pp. 13-17</li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 1: Brassica Seeds Part 2: Planting Brassica, pp. 18-20, Steps 1-8</li> <li style="padding-left: 20px;"><b>IF you are pressed for time, collect student planter cups in the trays (check that they all are watered) and set them under the light source and clean up. Complete Steps 9-14 the next day.</b></li> <li style="padding-left: 20px;">IF you are not pressed for time, continue on to Steps 9-14, and make entries in student journals.</li> <li>– Investigation Duplication Master: Student Sheets Nos. 2, 3</li> <li>– Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question, “What do brassica plants need to live and grow?” may be used for student journal entries.</p>	<p style="text-align: center;"><b>Homework/ Extra Practice</b></p> <p>Investigation 1 Home/School Connection – Student Sheet No. 21</p>

Grade 2

<b>WEEK 1 (continued)</b>	<p><b>Lesson 3 Thursday or Friday (45 min) Review needs of brassica plants and plant care, wrap up</b></p> <p><b>Objective(s):</b> Plants need water, air, nutrients, and light to grow.</p>		<p><b>Alignment with NYS Core Curriculum:</b> LE 1.1b; 1.2a</p>
	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 1: Brassica Seeds, pp. 1-7</li> <li>– Teacher Guide Inv. 1: Brassica Seeds, Part 2: Planting Brassica, Materials and Getting Ready, pp. 13-17</li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 1: Brassica Seeds Part 2: Planting Brassica, pp. 18-20, Steps 9-14</li> <li>– Investigation Duplication Master: Student Sheets Nos. 2, 3</li> <li>– Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question, “What do brassica plants need to live and grow?” may be used for student journal entries.</p>	<p style="text-align: center;"><b>Homework/ Extra Practice</b></p>

Grade 2

	<p><b>Lesson 4 Monday or Tuesday (45 min) Observe Brassica Sprout Growth</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>Plants are alive.</li> <li>Seeds are alive and grow into new plants.</li> <li>As plants grow, they develop roots, stems, leaves, buds, flowers, and seeds in a sequence called a life cycle.</li> <li>Bees and other insects help some plants by moving pollen from flower to flower.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b> LE 1.1b; 1.2a; 2.2a; 3.1b; 4.1a, b, c, d; 5.1a; 5.2a</p>	
<p><b>WEEK 2</b></p>	<p><b>Advanced Planning/ Notes to Teacher</b></p> <ul style="list-style-type: none"> <li>Teacher Guide Inv. 1: Brassica Seeds pp. 1-7</li> <li>Teacher Guide Inv. 1: Brassica Seeds, Part 3: Observing Brassica Growth, Materials and Getting Ready, pp. 23-24</li> <li>Teacher Guide Science Stories folio, pp. 1-3</li> <li><a href="http://www.fossweb.com/NYC">www.fossweb.com/NYC</a> – Check website for interactive simulations, Audio Stories, to write questions to a scientist, for teaching tips, and other websites to support teaching <b>New Plants</b>.</li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>Investigation 1: Brassica Seeds Part 3: Observing Brassica Growth, pp. 25-30, (Steps 1-18 over 4-5 weeks) Session 1: Observing Sprouts, Steps 1-5</li> <li>Investigation Duplication Master: Student Sheets Nos. 2, 3</li> <li>Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question, “What changes happen to brassica plants as they grow?” may be used for student journal entries.</p> <p>Read Science Stories: pp. 3-7, <i>What Do Plants Need?</i></p> <p>For link to the New Plants Science Stories Audio Stories log on to <a href="http://www.fossweb.com/nyc">www.fossweb.com/nyc</a>: go to Grade 2, click on New Plants. Click on “Media”; click on Audio Stories.</p>	<p style="text-align: center;"><b>Homework/ Extra Practice</b></p>

## Grade 2

<b>WEEK 2 (continued)</b>	<p><b>Lesson 5 Tuesday or Monday (45 min) Plant Lawns</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>• Seeds need water and light to develop into new plants.</li> <li>• Grasses and alfalfa are two different types of plants.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b> LE 1.1b; 2.2a</p>	
	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 2: Grass and Grain Seeds, pp. 1-7</li> <li>– Teacher Guide Inv. 2: Grass and Grain Seeds, Part 1: Lawns, Materials and Getting Ready, pp. 8-10</li> </ul>	<p><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 2: Grass and Grain Seeds Part 1: Lawns, pp. 11-14, Steps 1-16</li> <li>– Investigation Duplication Master: Student Sheets Nos. 3, 6</li> <li>– Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question, “What grows in a lawn?” may be used for student journal entries.</p>	<p><b>Homework/ Extra Practice</b></p>

## Grade 2

<p><b>Lesson 6 Friday (45 min) Record Lawn Growth at 3 Days</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>• Seeds need water and light to develop into new plants.</li> <li>• Grasses and alfalfa are two different types of plants.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b> LE 1.1b; 2.2a</p>	
<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 2: Grass and Grain Seeds, pp. 1-7</li> <li>– Teacher Guide Inv. 2: Grass and Grain Seeds, Part 1: Lawns, Materials and Getting Ready, pp. 8-10</li> </ul>	<p><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 2: Grass and Grain Seeds Part 1: Lawns, pp. 11-14, Steps 17-19</li> <li>– Investigation Duplication Master: Student Sheets Nos. 3, 6</li> <li>– Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question, “What grows in a lawn?” may be used for student journal entries.</p>	<p><b>Homework/ Extra Practice</b></p>

## Grade 2

	<p><b>Lesson 7 Monday</b> (45 min) <b>Observe Brassica Leaf Growth</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>Plants are alive.</li> <li>Seeds are alive and grow into new plants.</li> <li>As plants grow, they develop roots, stems, leaves, buds, flowers, and seeds in a sequence called a life cycle.</li> <li>Bees and other insects help some plants by moving pollen from flower to flower.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b></p> <p>LE 1.1b; 1.2a; 2.2a; 3.1b; 4.1a, b, c, d; 5.1a; 5.2a</p>	
<b>WEEK 3</b>	<p><b>Advanced Planning/Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>Teacher Guide Inv. 1: Brassica Seeds, pp. 1-7</li> <li>Teacher Guide Inv. 1: Brassica Seeds, Part 3: Observing Brassica Growth, Materials and Getting Ready, pp. 23-24</li> <li>Teacher Guide Science Stories folio, pp. 1-3</li> <li><a href="http://www.fossweb.com/NYC">www.fossweb.com/NYC</a> – Check website for interactive simulations, Audio Stories, to write questions to a scientist, for teaching tips, and other websites to support teaching <b>New Plants</b>.</li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>Investigation 1: Brassica Seeds Part 3: Observing Brassica Growth, pp. 25-30, (Steps 1-18 over 4-5 weeks) Session 2: Observing Leaf Growth, Steps 6-8</li> <li>Investigation Duplication Master: Student Sheets Nos. 2, 3</li> <li>Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question, “What changes happen to brassica plants as they grow?” may be used for student journal entries.</p>	<p style="text-align: center;"><b>Homework/Extra Practice</b></p> <p>Investigation 1: Math Extension A – Student Sheet No. 13</p>

## Grade 2

<b>WEEK 3 (continued)</b>	<b>Lesson 8 Tuesday (45 min) Mow the Lawn</b> <b>Objective(s):</b> <ul style="list-style-type: none"> <li>• Not all plants grow alike.</li> <li>• Some plants will die if they are cut near the ground, while others will continue to thrive.</li> </ul>		<b>Alignment with NYS Core Curriculum:</b> LE 4.1a, b; 5.1a
	<b>Advanced Planning/ Notes to Teachers</b> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 2: Grass and Grain Seeds, pp. 1-7</li> <li>– Teacher Guide Inv. 2: Grass and Grain Seeds, Part 2: Mowing the Lawn, Materials and Getting Ready, pp. 15-16</li> <li>– Teacher Guide Science Stories folio, pp. 4-5</li> </ul>	<b>Investigation/Activity</b> <ul style="list-style-type: none"> <li>– Investigation 2: Grass and Grain Seeds Part 2: Mowing the Lawn, pp. 17-19, Steps 1-7</li> <li>– Investigation Duplication Master: Student Sheet Nos. 3, 6</li> <li>– Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question, “Do all plants grow back after cutting them back?” may be used for student journal entries.</p>	<b>Homework/ Extra Practice</b>

## Grade 2

<p><b>Lesson 9 Thursday or Friday (45 min) Read Inv. 2 Science Stories; catch-up recording if needed</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>• Not all plants grow alike.</li> <li>• Some plants will die if they are cut near the ground, while others will continue to thrive.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b> LE 4.1a, b; 5.1a</p>	
<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 2: Grass and Grain Seeds, pp. 1-7</li> <li>– Teacher Guide Inv. 2: Grass and Grain Seeds, Part 2: Mowing the Lawn, Materials and Getting Ready, pp. 15-16</li> <li>– Teacher Guide Science Stories folio, pp. 4-5</li> </ul>	<p><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 2: Grass and Grain Seeds Part 2: Mowing the Lawn, pp. 17-19, Steps 8 and 12</li> <li>– Investigation Duplication Master: Student Sheets Nos. 3, 6</li> <li>– Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question, “Do all plants grow back after cutting them back?” may be used for student journal entries.</p> <p>Read Science Stories: pp. 8-11, <i>How Seeds Travel?</i></p> <p>For link to the New Plants Science Stories Audio Stories log on to <a href="http://www.fossweb.com/nyc">www.fossweb.com/nyc</a>: Go to Grade 2, click on New Plants. Click on “Media”; click on Audio Stories.</p>	<p><b>Homework/ Extra Practice</b></p>

## Grade 2

<b>WEEK 4</b>	<p><b>Lesson 10 Monday (45 min) Observe Brassica Flower Growth</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>Plants are alive.</li> <li>Seeds are alive and grow into new plants.</li> <li>As plants grow, they develop roots, stems, leaves, buds, flowers, and seeds in a sequence called a life cycle.</li> <li>Bees and other insects help some plants by moving pollen from flower to flower.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b> LE 1.1b; 1.2a; 2.2a; 3.1b; 4.1a, b, c, d; 5.1a; 5.2a</p>	
	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>Teacher Guide Inv. 1: Brassica Seeds, pp. 1-7</li> <li>Teacher Guide Inv. 1: Brassica Seeds, Part 3: Observing Brassica Growth, Materials and Getting Ready, pp. 23-24</li> <li>Teacher Guide Science Stories folio, pp. 1-3</li> <li><a href="http://www.fossweb.com/NYC">www.fossweb.com/NYC</a> – Check website for interactive simulations, Audio Stories, to write questions to a scientist, for teaching tips, and other websites to support teaching <b>New Plants</b>.</li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>Investigation 1: Brassica Seeds Part 3: Observing Brassica Growth, pp. 25-30, (Steps 1-18 over 4-5 weeks) Session 3: Observing Flower Growth, Steps 9-11</li> <li>Investigation Duplication Master: Student Sheets Nos. 2, 3</li> <li>Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question, “What changes happen to brassica plants as they grow?” may be used for student journal entries.</p>	<p style="text-align: center;"><b>Homework/ Extra Practice</b></p>

## Grade 2

<p><b>Lesson 11 Tuesday</b> (45 min) <b>Lawn growth observations and re-mowing; content and assessment</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>• Not all plants grow alike.</li> <li>• Some plants will die if they are cut near the ground, while others will continue to thrive.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b> LE 4.1a, b; 5.1a</p>	
<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 2: Grass and Grain Seeds, pp. 1-7</li> <li>– Teacher Guide Inv. 2: Grass and Grain Seeds, Part 2: Mowing the Lawn, Materials and Getting Ready, pp. 15-16</li> <li>– Teacher Guide Science Stories folio, pp. 4-5</li> </ul>	<p><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 2: Grass and Grain Seeds Part 2: Mowing the Lawn, pp. 17-19, Steps 8-11</li> <li>– Investigation Duplication Master: Student Sheets Nos. 3, 6, 7</li> <li>– Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question, “Do all plants grow back after cutting them back?” may be used for student journal entries.</p>	<p><b>Homework/Extra Practice</b></p>

## Grade 2

<b>WEEK 4 (continued)</b>	<p><b>Lesson 12 Thursday (45 min) Plant wheat seeds</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>• Wheat and other cereals we eat come from seeds called grains.</li> <li>• Seeds are alive and grow into new plants.</li> <li>• Plants have different structures that function in growth and survival.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b></p> <p>LE 1.2a; 3.1b; 4.1a; 5.1a; 5.2a</p>	
	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 2: Grass and Grain Seeds, pp. 1-7</li> <li>– Teacher Guide Inv. 2: Grass and Grain Seeds, Part 3: Wheat, Materials and Getting Ready, pp. 20-23</li> <li>– Teacher Guide Science Stories folio, pp. 6-9</li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 2: Grass and Grain Seeds Part 3: Wheat, pp. 24-28, Steps 1-11, note Step 12</li> <li>– Investigation Duplication Master: Student Sheet No. 8 and Class Calendar</li> <li>– Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question, “How does a seed grow?” may be used for student journal entries.</p>	<p style="text-align: center;"><b>Homework/Extra Practice</b></p> <p>Science Extensions, p. 30</p> <p>Oat seeds are provided to make another “straw planter.” This can be sent home and students can observe their straw over the Spring Break.</p>

## Grade 2

	<p><b>Lesson 13 Monday (45 min) Brassica Cross Pollination</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>Plants are alive.</li> <li>Seeds are alive and grow into new plants.</li> <li>As plants grow, they develop roots, stems, leaves, buds, flowers, and seeds in a sequence called a life cycle.</li> <li>Bees and other insects help some plants by moving pollen from flower to flower.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b></p> <p>LE 1.1b; 1.2a; 2.2a; 3.1b; 4.1a, b, c, d; 5.1a; 5.2a</p>	
<b>WEEK 5</b>	<p><b>Advanced Planning/Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>Teacher Guide Inv. 1: Brassica Seeds, pp. 1-7</li> <li>Teacher Guide Inv. 1: Brassica Seeds, Part 3: Observing Brassica Growth, Materials and Getting Ready, pp. 23-24</li> <li>Teacher Guide Science Stories folio, pp. 1-3</li> <li><a href="http://www.fossweb.com/NYC">www.fossweb.com/NYC</a> – Check website for interactive simulations, Audio Stories, to write questions to a scientist, for teaching tips, and other websites to support teaching <b>New Plants</b>.</li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>Investigation 1: Brassica Seeds Part 3: Observing Brassica Growth, pp. 25-30, (Steps 1-18 over 4-5 weeks) Session 4: Bees, Butterflies, and Flowers, Step 12</li> <li>Investigation Duplication Master: Student Sheets Nos. 2, 3</li> <li>Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question, “What changes happen to brassica plants as they grow?” may be used for student journal entries.</p>	<p style="text-align: center;"><b>Homework/Extra Practice</b></p>

## Grade 2

<b>WEEK 5 (continued)</b>	<p><b>Lesson 14 Wednesday</b> (45 min) <b>Wheat straw – 1<sup>st</sup> formal observation</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>• Wheat and other cereals we eat come from seeds called grains.</li> <li>• Seeds are alive and grow into new plants.</li> <li>• Plants have different structures that function in growth and survival.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b> LE 1.2a; 3.1b; 4.1a; 5.1a; 5.2a</p>	
	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 2: Grass and Grain Seeds, pp. 1-7</li> <li>– Teacher Guide Inv. 2: Grass and Grain Seeds, Part 3: Wheat, Materials and Getting Ready, pp. 20-23</li> <li>– Teacher Guide Science Stories folio, pp. 6-9</li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 2: Grass and Grain Seeds Part 3: Wheat, pp. 24-28, Steps 11, 12, and 13, 14 as suggested</li> <li>– Investigation Duplication Master: Student Sheet No. 8 and Class Calendar</li> <li>– Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question, “How does a seed grow?” may be used for student journal entries.</p>	<p style="text-align: center;"><b>Homework/ Extra Practice</b></p>

## Grade 2

<b>WEEK 5 (continued)</b>	<b>Lesson 15 Thursday or Friday (45 min) Final Lawn Observations</b>		<b>Alignment with NYS Core Curriculum:</b> LE 4.1a, b; 5.1a
	<b>Objective(s):</b> <ul style="list-style-type: none"> <li>• Not all plants grow alike.</li> <li>• Some plants will die if they are cut near the ground, while others will continue to thrive.</li> </ul>		
	<b>Advanced Planning/ Notes to Teachers</b> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 2: Grass and Grain Seeds, pp. 1-7</li> <li>– Teacher Guide Inv. 2: Grass and Grain Seeds, Part 2: Mowing the Lawn, Materials and Getting Ready, pp. 15-16</li> <li>– Teacher Guide Science Stories folio, pp. 4-5</li> </ul>	<b>Investigation/Activity</b> <ul style="list-style-type: none"> <li>– Investigation 2: Grass and Grain Seeds Part 2: Mowing the Lawn, pp. 17-19, Step 13</li> <li>– Investigation Duplication Master: Student Sheets Nos. 3, 6</li> <li>– Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question, “How can air start an object spinning?” may be used for student journal entries.</p> <p><b>NOTE: Transfer the lawns to a paper cup or bag if the students wish to take them home. The planter cups are permanent equipment and should be washed and returned to the kit.</b></p> <p><b>Send Teacher Sheet No. 9: “Wanted: Plants or Stems” home with students.</b></p>	<b>Homework/Extra Practice</b> Investigation 2: Math Extension A – Student Sheet No. 15

### Spring Break Notes

**Brassica:** If seed pods are developed, do not water. Allow the plants to dry out over the Spring Break. If the pods are not yet swollen with seeds (“bumpy”) add some extra water to the watering tray to keep them moist as long as possible. Remember that if the plants are still growing you will need to keep the grow light ON for the entire week.

**Wheat:** Add a little extra water to each group’s cup. Loosely wrap the rim of the cup with foil or plastic wrap to help slow evaporation of water. Do not cover the tips of the straws.

## Grade 2

**Collect Stem Cuttings for Investigation 3: Stems**

See Teacher Sheet No. 9: “Wanted: Plants or Stems” and Inv. 3: Stems, Part 1: Rooting Stem Cuttings, Getting Ready, Step 4 for details.

Pothos is a common houseplant that can usually be found at any time of the year as a hanging basket.

English ivy is very common in outdoor gardens in the city and suburbs. “Flats” of English ivy are also available in early Spring with other “ground cover” plants at garden centers.

Pot these plants and keep them for next year.

**Purchase garlic or onions for Investigation 4: Bulbs and Roots**

See Teacher Guide, Inv. 4: Bulbs and Roots, Part 1: Bulbs, p. 8, Getting Ready, Step 3 for details. Garlic is the less expensive option.

	<p><b>Lesson 16 Monday</b> (45 min) <b>Wheat straw – 2nd formal observation</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>• Wheat and other cereals we eat come from seeds called grains.</li> <li>• Seeds are alive and grow into new plants.</li> <li>• Plants have different structures that function in growth and survival.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b> LE 1.2a; 3.1b; 4.1a; 5.1a; 5.2a</p>	
<b>WEEK 6</b>	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 2: Grass and Grain Seeds, pp. 1-7</li> <li>– Teacher Guide Inv. 2: Grass and Grain Seeds, Part 3: Wheat, Materials and Getting Ready, pp. 20-23</li> <li>– Teacher Guide Science Stories folio, pp. 6-9</li> <li>– <a href="http://www.fossweb.com/NYC">www.fossweb.com/NYC</a> – Check website for interactive simulations, Audio Stories, to write questions to a scientist, for teaching tips, and other websites to support teaching <b>New Plants.</b></li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 2: Grass and Grain Seeds Part 3: Wheat, pp. 24-28, Steps 11, 12, and 13, 14 as suggested</li> <li>– Investigation Duplication Master: Student Sheet No. 8 and Class Calendar</li> <li>– Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question, “How does a seed grow?” may be used for student journal entries.</p>	<p style="text-align: center;"><b>Homework/ Extra Practice</b></p>

## Grade 2

**Note: Lessons 17 & 18 can be moved to a later date if you wish to start Inv. 3, Part 1: Rooting Stem Cuttings (Lesson 20)**

<b>WEEK 6 (continued)</b>	<p><b>Lesson 17 Wednesday (45 min) Brassica Seed Harvesting</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>Plants are alive.</li> <li>Seeds are alive and grow into new plants.</li> <li>As plants grow, they develop roots, stems, leaves, buds, flowers, and seeds in a sequence called a life cycle.</li> <li>Bees and other insects help some plants by moving pollen from flower to flower.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b> LE 1.1b; 1.2a; 2.2a; 3.1b; 4.1a, b, c, d; 5.1a; 5.2a</p>
	<p><b>Advanced Planning/Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>Teacher Guide Inv. 1: Brassica Seeds, pp. 1-7</li> <li>Teacher Guide Inv. 1: Brassica Seeds, Part 3: Observing Brassica Growth, Materials and Getting Ready, pp. 23-24</li> <li>Teacher Guide Science Stories folio, pp. 1-3</li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>Investigation 1: Brassica Seeds Part 3: Observing Brassica Growth, pp. 25-30, (Steps 1-18 over 4-5 weeks) Session 5: Harvesting Seeds, Steps 13-15</li> <li>Investigation Duplication Master: Student Sheets Nos. 2, 3</li> <li>Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question, “What changes happen to brassica plants as they grow?” may be used for student journal entries.</p>

## Grade 2

<b>WEEK 6 (continued)</b>	<p><b>Lesson 18 Thursday or Friday (45 min) Brassica Wrap Up</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>Plants are alive.</li> <li>Seeds are alive and grow into new plants.</li> <li>As plants grow, they develop roots, stems, leaves, buds, flowers, and seeds in a sequence called a life cycle.</li> <li>Bees and other insects help some plants by moving pollen from flower to flower.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b></p> <p>LE 1.1b; 1.2a; 2.2a; 3.1b; 4.1a, b, c, d; 5.1a; 5.2a</p>	
	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>Teacher Guide Inv. 1: Brassica Seeds, pp. 1-7</li> <li>Teacher Guide Inv. 1: Brassica Seeds, Part 3: Observing Brassica Growth, Materials and Getting Ready, pp. 23-24</li> <li>Teacher Guide Science Stories folio, pp. 1-3</li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>Investigation 1: Brassica Seeds Part 3: Observing Brassica Growth, pp. 25-30, (Steps 1-18 over 4-5 weeks) Wrapping Up, Steps 16-18</li> <li>Investigation Duplication Masters: Student Sheets Nos. 2, 3</li> <li>Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question, “What changes happen to brassica plants as they grow?” may be used for student journal entries.</p>	<p style="text-align: center;"><b>Homework/ Extra Practice</b></p> <p>Investigation 1: Math Extension B – Student Sheet No. 14</p>

## Grade 2

<b>WEEK 7</b>	<b>Lesson 19 Monday (45 min) Wheat straw – 3rd formal observation</b> <b>Objective(s):</b> <ul style="list-style-type: none"> <li>• Wheat and other cereals we eat come from seeds called grains.</li> <li>• Seeds are alive and grow into new plants.</li> <li>• Plants have different structures that function in growth and survival.</li> </ul>		<b>Alignment with NYS Core Curriculum:</b> LE 1.2a; 3.1b; 4.1a; 5.1a; 5.2a
	<b>Advanced Planning/ Notes to Teachers</b> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 2: Grass and Grain Seeds, pp. 1-7</li> <li>– Teacher Guide Inv. 2: Grass and Grain Seeds, Part 3: Wheat, Materials and Getting Ready, pp. 20-23</li> <li>– Teacher Guide Science Stories folio, pp. 6-9</li> <li>– <a href="http://www.fossweb.com/NYC">www.fossweb.com/NYC</a> – Check website for interactive simulations, Audio Stories, to write questions to a scientist, for teaching tips, and other websites to support teaching <b>New Plants</b>.</li> </ul>	<b>Investigation/Activity</b> <ul style="list-style-type: none"> <li>– Investigation 2: Grass and Grain Seeds Part 3: Wheat, pp. 24-28, Steps 11, 12-17 as suggested</li> <li>– Investigation Duplication Master: Student Sheet No. 8 and Class Calendar</li> <li>– Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question, “How does a seed grow?” may be used for student journal entries.</p>	<b>Homework/Extra Practice</b> Investigation 2: Math Extension B – Student Sheet No. 16

## Grade 2

<b>WEEK 7 (continued)</b>	<p><b>Lesson 20 Tuesday or Wednesday (45 min)</b>  <b>Rooting Stem Cuttings</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>• Leaves, twigs, and roots develop on stems at the nodes.</li> <li>• Plants need water and light to grow.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b>          LE 1.1b; 3.1b</p>	
	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 3: Stems, pp. 1-7</li> <li>– Teacher Guide Inv. 3: Stems, Part 1: Rooting Stem Cuttings, Materials and Getting Ready, pp. 8-10</li> </ul>	<p><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 3: Stems              Part 1: Rooting Stem Cuttings, pp. 11-13, Steps 1-10</li> <li>– Investigation Duplication Master: Student Sheet No. 10 and Class Calendar</li> <li>– Assessment Duplication Masters Nos. 1, 2, 3:              Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question, “How can we make a new plant from an old one?” may be used for student journal entries.</p>	<p><b>Homework/ Extra Practice</b></p>

## Grade 2

<p><b>Lesson 21 Thursday or Friday (45 min) Inv. 2: Science Stories</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>• Wheat and other cereals we eat come from seeds called grains.</li> <li>• Seeds are alive and grow into new plants.</li> <li>• Plants have different structures that function in growth and survival.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b> LE 1.2a; 3.1b; 4.1a; 5.1a; 5.2a</p>	
<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 2: Grass and Grain Seeds, pp. 1-7</li> <li>– Teacher Guide Inv. 2: Grass and Grain Seeds, Part 3: Wheat, Materials and Getting Ready, pp. 20-23</li> <li>– Teacher Guide Science Stories folio, pp. 6-9</li> </ul>	<p><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 2: Grass and Grain Seeds Part 3: Wheat, pp. 24-28, Step 18</li> <li>– Investigation Duplication Master: Student Sheet No. 8 and Class Calendar</li> <li>– Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question, “How does a seed grow?” may be used for student journal entries.</p> <p>Read Science Stories: pp. 12-15, <i>Flowers and Seeds</i> pp. 16-21, <i>The Story of Wheat</i></p> <p>For link to the New Plants Science Stories Audio Stories log on to <a href="http://www.fossweb.com/nyc">www.fossweb.com/nyc</a>: go to Grade 2, click on New Plants. Click on “Media”; click on Audio Stories.</p>	<p><b>Homework/Extra Practice</b></p> <p>Investigation 2 Home/School Connection – Student Sheet No. 22</p> <p>Visit: <a href="http://www.fossweb.com/modulesK-2/NewPlants/index.html">www.fossweb.com/modulesK-2/NewPlants/index.html</a></p> <p>Follow the “Media” link to “Images” and Gallery 1: Seeds</p>

## Grade 2

<b>WEEK 8</b>	<p><b>Lesson 22 Monday (45 min) Bulbs</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>• Bulbs are alive.</li> <li>• Bulbs need water to start growing.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b></p> <p>LE 1.1b; 1.2a; 3.1b</p>	
	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 4: Bulbs and Roots, pp. 1-6</li> <li>– Teacher Guide Inv. 4: Bulbs and Roots, Part 1: Bulbs, Materials and Getting Ready, pp. 7-8</li> <li>– Teacher Guide Science Stories folio, pp. 10-12</li> <li>– <a href="http://www.fossweb.com/NYC">www.fossweb.com/NYC</a> – Check website for interactive simulations, Audio Stories, to write questions to a scientist, for teaching tips, and other websites to support teaching <b>New Plants</b>.</li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 4: Bulbs and Roots Part 1: Bulbs, pp. 9-12, Steps 1-9</li> <li>– Investigation Duplication Master: Student Sheet No. 11 and Class Calendar</li> <li>– Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question, “What are bulbs?” may be used for student journal entries.</p> <p><b>NOTE: If using garlic <u>cloves</u> instead of onion bulbs, be sure to show the ‘head’ of garlic to the students before you split it into cloves. You may also wish to modify the drawing on Student Sheet No. 11</b></p>	<p style="text-align: center;"><b>Homework/ Extra Practice</b></p> <p>Investigation 4: Math Extension A – Student Sheet No. 19</p>

## Grade 2

<b>WEEK 8 (continued)</b>	<p><b>Lesson 23 Tuesday or Wednesday (45 min) Spuds</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>• New plants can grow from stems of mature plants.</li> <li>• Potatoes are underground stems.</li> <li>• Potato eyes are nodes where buds grow.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b></p> <p>LE 1.1b; 1.2a; 2.2a; 2.2b; 3.1b; 4.1b; 5.2a</p>	
	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 3: Stems, pp. 1-7</li> <li>– Teacher Guide Inv. 3: Stems, Part 3: Spuds, Materials and Getting Ready, pp. 19-21.</li> <li>– Consider Science Notebooks: Download the FOSS Science Notebooks folio at <a href="http://www.fossweb.com/nyc">www.fossweb.com/nyc</a>.</li> </ul>	<p><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 3: Stems Part 3: Spuds, pp. 22-26, Steps 1-13</li> <li>– Investigation Duplication Master: Student Notebooks and Class Calendar</li> <li>– Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question, “Why do potatoes have eyes?” may be used for student journal entries.</p> <p><b>NOTE: Potato sprouts are toxic, so it is important that students do not eat them.</b></p> <p><b>REINFORCE</b> the safety practices from your FOSS Safety Poster that discuss not putting things in your mouth in science class and not tasting things unless your teacher tells you to.</p>	<p><b>Homework/ Extra Practice</b></p>

## Grade 2

	<p><b>Lesson 24 Friday (45 min) Rooting Stem Cuttings, Day 10 and Bulbs, Day 4</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>• Leaves, twigs, and roots develop on stems at the nodes.</li> <li>• Plants need water and light to grow.</li> <li>• Bulbs are alive</li> <li>• Bulbs need water to start growing.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b></p> <p>LE 1.1b; 3.1b LE 1.1b; 1.2a; 3.1b</p>	
WEEK 8 (continued)	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 3: Stems, pp. 1-7</li> <li>– Teacher Guide Inv. 3: Stems, Part 1: Rooting Stem Cuttings, Materials and Getting Ready, pp. 8-10</li> <li>– Teacher Guide Inv. 4: Bulbs and Roots, pp. 1-6</li> <li>– Teacher Guide Inv. 4: Bulbs and Roots, Part 1: Bulbs, Materials and Getting Ready, pp. 7-8</li> <li>– Teacher Guide Science Stories folio, pp. 10-12</li> </ul>	<p><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 3: Stems Part 1: Rooting Stem Cuttings, pp. 11-13, Steps 11-12</li> <li>– Investigation Duplication Master: Student Sheet No. 10 and Class Calendar</li> <li>– Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question: “How can we make a new plant from an old one?” may be used for student journal entries.</p> <ul style="list-style-type: none"> <li>– Investigation 4: Bulbs and Roots Part 1: Bulbs, pp. 9-12, Steps 10-11</li> <li>– Investigation Duplication Master: Student Sheet No. 11 and Class Calendar</li> <li>– Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question, “What are bulbs?” may be used for student journal entries.</p> <p><b>NOTE: If using garlic <u>cloves</u> instead of onion bulbs, modify the drawing on Student Sheet No. 11</b></p>	<p><b>Homework/ Extra Practice</b></p>

## Grade 2

Purchase 9-10 radishes and 9-10 carrots WITH TOPS. See Investigation 4, Part 2, p. 14, Getting Ready, Step 3.

	<p><b>Lesson 25 Monday</b> (45 min) <b>Planting Roots</b></p> <p><b>Objective(s):</b> Some parts of roots will grow into new plants. Other parts will not.</p>	<p><b>Alignment with NYS Core Curriculum:</b> LE 1.1b; 1.2a; 2.1a; 2.2b; 3.1b; 5.1a; 5.2a</p>	
<b>WEEK 9</b>	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 4: Bulbs and Roots, pp. 1-6</li> <li>– Teacher Guide Inv. 4: Bulbs and Roots, Part 2: Planting Roots, Materials and Getting Ready, pp. 13-15</li> <li>– Teacher Guide Science Stories folio, pp. 13-14</li> <li>– <a href="http://www.fossweb.com/NYC">www.fossweb.com/NYC</a> – Check website for interactive simulations, Audio Stories, to write questions to a scientist, for teaching tips, and other websites to support teaching <b>New Plants</b>.</li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 4: Bulbs and Roots Part 2: Planting Roots, pp. 16-21, Steps 1-13</li> <li>– Investigation Duplication Master: Student Sheet No. 12 and Class Calendar</li> <li>– Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question: “What other plant parts can grow new plants?” may be used for student journal entries.</p>	<p style="text-align: center;"><b>Homework/ Extra Practice</b></p>

## Grade 2

<b>WEEK 9 (continued)</b>	<p><b>Lesson 26 Tuesday or Wednesday (45 min) Spuds, Day 7</b></p> <p><b>Objective(s):</b>          New plants can grow from stems of mature plants.          Potatoes are underground stems.          Potato eyes are nodes where buds grow.</p>	<p><b>Alignment with NYS Core Curriculum:</b>          LE 1.1b; 1.2a; 2.2a; 2.2b; 3.1b; 4.1b; 5.2a</p>
	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 3: Stems, pp. 1-7</li> <li>– Teacher Guide Inv. 3: Stems, Part 3: Spuds, Materials and Getting Ready, pp. 19-21</li> </ul>	<p><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 3: Stems Part 3: Spuds, pp. 22-26, Steps 14-16</li> <li>– Investigation Duplication Master: Student Notebooks and Class Calendar</li> <li>– Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question:          “Why do potatoes have eyes?”          may be used for student journal entries.</p>

## Grade 2

<b>WEEK 9 (continued)</b>	<p><b>Lesson 27 Friday (45 min) Rooting Stem Cuttings, Day 17</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>• Leaves, twigs, and roots develop on stems at the nodes.</li> <li>• Plants need water and light to grow.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b> LE 1.1b; 3.1b</p>	
	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 3: Stems, pp. 1-7</li> <li>– Teacher Guide Inv. 3: Stems, Part 1: Rooting Stem Cuttings, Materials and Getting Ready, pp. 8-10</li> </ul>	<p><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 3: Stems Part 1: Rooting Stem Cuttings, pp. 11-13, Steps 11-14</li> <li>– Investigation Duplication Master: Student Sheet No. 10 and Class Calendar</li> <li>– Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question: “How can we make a new plant from an old one?” may be used for student journal entries.</p> <p><b>Teacher Resource:</b> Visit: <a href="http://plants.usda.gov/">http://plants.usda.gov/</a> (also linked via the fossweb “Media” link) This comprehensive database will help you identify plants in your area.</p>	<p><b>Homework/ Extra Practice</b></p>

## Grade 2

	<p><b>Lesson 28 Monday</b> (45 min) <b>Planting Roots, Day 7</b></p> <p><b>Objective(s):</b> Some parts of roots will grow into new plants. Other parts will not.</p>	<p><b>Alignment with NYS Core Curriculum:</b> LE 1.1b; 1.2a; 2.1a; 2.2b; 3.1b; 5.1a; 5.2a</p>	
<b>WEEK 10</b>	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 4: Bulbs and Roots, pp. 1-6</li> <li>– Teacher Guide Inv. 4: Bulbs and Roots, Part 2: Planting Roots, Materials and Getting Ready, pp. 13-15</li> <li>– Teacher Guide Science Stories folio, pp. 13-14</li> <li>– <a href="http://www.fossweb.com/NYC">www.fossweb.com/NYC</a> – Check website for interactive simulations, Audio Stories, to write questions to a scientist, for teaching tips, and other websites to support teaching <b>New Plants</b>.</li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 4: Bulbs and Roots Part 2: Planting Roots, pp. 16-21, Steps 14-15</li> <li>– Investigation Duplication Master: Student Notebook and Class Calendar</li> <li>– Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question: “What other plant parts can grow new plants?” may be used for student journal entries.</p>	<p style="text-align: center;"><b>Homework/ Extra Practice</b></p>

## Grade 2

<b>WEEK 10 (continued)</b>	<p><b>Lesson 29 Tuesday or Wednesday (45 min) Spuds, Day 14</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>• New plants can grow from stems of mature plants.</li> <li>• Potatoes are underground stems.</li> <li>• Potato eyes are nodes where buds grow.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b> LE 1.1b; 1.2a; 2.2a; 2.2b; 3.1b; 4.1b; 5.2a</p>	
	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 3: Stems, pp. 1-7</li> <li>– Teacher Guide Inv. 3: Stems, Part 3: Spuds, Materials and Getting Ready, pp. 19-21</li> </ul>	<p><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 3: Stems Part 3: Spuds, pp. 22-26, Steps 14-16, 18-19</li> <li>– Investigation Duplication Master: Student Notebooks and Class Calendar</li> <li>– Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question, “Why do potatoes have eyes?” may be used for student journal entries.</p>	<p><b>Homework/ Extra Practice</b></p> <p>Investigation 3: Math Extension B – Student Sheet No. 18</p>

Grade 2

<b>WEEK 10 (continued)</b>	<p><b>Lesson 30 Friday (45 min) New Plants from Cuttings</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>• New plants can grow from the stems of mature plants.</li> <li>• Plants make food from light, water, air, and nutrients from soil.</li> </ul>		<p><b>Alignment with NYS Core Curriculum:</b></p> <p>LE 1.1b; 3.1b</p>
	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 3: Stems, pp. 1-7</li> <li>– Teacher Guide Inv. 3: Stems, Part 2: New Plants From Cuttings, Materials and Getting Ready, pp. 14-15</li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 3: Stems Part 2: New Plants From Cuttings, pp. 16-18, Steps 1-9</li> <li>– Investigation Duplication Master: Student Notebooks and Class Calendar</li> <li>– Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question, “How do we keep our cuttings alive?” may be used for student journal entries.</p> <p><b>NOTE:</b> Visit <a href="http://urbanext.illinois.edu/houseplants/default.cfm">http://urbanext.illinois.edu/houseplants/default.cfm</a> for pictures of houseplants that can be compared to classroom plants. This site may also be viewed in Spanish.</p>	<p style="text-align: center;"><b>Homework/ Extra Practice</b></p> <p>Visit: <a href="http://www.fossweb.com/modulesK-2/NewPlants/index.html">www.fossweb.com/modulesK-2/NewPlants/index.html</a> and do the “Watch It Grow” student activity as a class or on individual computers.</p>

## Grade 2

<b>WEEK 11 (continued)</b>	<b>Lesson 31 Monday (45 min) Planting Roots, Day 14</b> <b>Objective(s):</b> Some parts of roots will grow into new plants. Other parts will not.		<b>Alignment with NYS Core Curriculum:</b> LE 1.1b; 1.2a; 2.1a; 2.2b; 3.1b; 5.1a; 5.2a
	<b>Advanced Planning/ Notes to Teachers</b> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 4: Bulbs and Roots, pp. 1-6</li> <li>– Teacher Guide Inv. 4: Bulbs and Roots, Part 2: Planting Roots, Materials and Getting Ready, pp. 13-15.</li> <li>– Teacher Guide Science Stories folio, pp. 13-14</li> <li>– <a href="http://www.fossweb.com/NYC">www.fossweb.com/NYC</a> – Check website for interactive simulations, Audio Stories, to write questions to a scientist, for teaching tips, and other websites to support teaching <b>New Plants</b>.</li> </ul>	<b>Investigation/Activity</b> <ul style="list-style-type: none"> <li>– Investigation 4: Bulbs and Roots Part 2: Planting Roots, pp. 16-21, Steps 14-15</li> <li>– Investigation Duplication Master: Student Notebooks and Class Calendar</li> <li>– Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question, “What other plant parts can grow new plants?” may be used for student journal entries.</p>	<b>Homework/ Extra Practice</b>

## Grade 2

<b>WEEK 11 (continued)</b>	<p><b>Lesson 32 Tuesday or Wednesday (45 min) Spuds, Day 21</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>• New plants can grow from stems of mature plants.</li> <li>• Potatoes are underground stems.</li> <li>• Potato eyes are nodes where buds grow.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b> LE 1.1b; 1.2a; 2.2a; 2.2b; 3.1b; 4.1b; 5.2a</p>	
	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 3: Stems, pp. 1-7</li> <li>– Teacher Guide Inv. 3: Stems, Part 3: Spuds, Materials and Getting Ready, pp. 19-21</li> </ul>	<p><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 3: Stems Part 3: Spuds, pp. 22-26, Steps 14-16, 17-19</li> <li>– Investigation Duplication Master: Student Notebooks and Class Calendar</li> <li>– Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question, “Why do potatoes have eyes?” may be used for student journal entries.</p>	<p><b>Homework/ Extra Practice</b></p> <p>Investigation 3 Home/School Connection – Student Sheet No. 23</p>

## Grade 2

<b>WEEK 11 (continued)</b>	<p><b>Lesson 33 Thursday or Friday (45 min) Bulbs, Day 25</b></p> <p><b>Objective(s):</b></p> <ul style="list-style-type: none"> <li>• Bulbs are alive.</li> <li>• Bulbs need water to start growing.</li> </ul>	<p><b>Alignment with NYS Core Curriculum:</b> LE 1.1b; 1.2a; 3.1b</p>	
	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 4: Bulbs and Roots, pp. 1-6</li> <li>– Teacher Guide Inv. 4: Bulbs and Roots, Part 1: Bulbs, Materials and Getting Ready, pp. 7-8</li> <li>– Teacher Guide Science Stories folio, pp. 10-12</li> </ul>	<p><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 4: Bulbs and Roots Part 1: Bulbs, pp. 9-12, Steps 12-17</li> <li>– Investigation Duplication Master: Student Sheet No. 11 and Class Calendar</li> <li>– Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question, “What are bulbs?” may be used for student journal entries.</p> <p><b>NOTE: If using garlic <u>cloves</u> instead of onion bulbs, modify the drawing on Student Sheet No. 11</b></p> <p>Read Science Stories: pp. 22-39, <i>Plants and Animals Around the World</i></p> <p>For link to the New Plants Science Stories Audio Stories log on to <a href="http://www.fossweb.com/nyc">www.fossweb.com/nyc</a>: go to Grade 2, click on New Plants. Click on “Media”; click on Audio Stories.</p>	<p><b>Homework/ Extra Practice</b></p> <p>Investigation 4: Math Extension B – Student Sheet No. 20</p>

## Grade 2

<b>WEEK 12</b>	<p><b>Lesson 34 Monday (45 min) Planting Roots, Day 21</b></p> <p><b>Objective(s):</b> Some parts of roots will grow into new plants. Other parts will not.</p>	<p><b>Alignment with NYS Core Curriculum:</b> LE 1.1b; 1.2a; 2.1a; 2.2b; 3.1b; 5.1a; 5.2a</p>	
	<p><b>Advanced Planning/ Notes to Teachers</b></p> <ul style="list-style-type: none"> <li>– Teacher Guide Inv. 4: Bulbs and Roots, pp. 1-6</li> <li>– Teacher Guide Inv. 4: Bulbs and Roots, Part 2: Planting Roots, Materials and Getting Ready, pp. 13-15</li> <li>– Teacher Guide Science Stories folio, pp. 13-14</li> <li>– <a href="http://www.fossweb.com/NYC">www.fossweb.com/NYC</a> – Check website for interactive simulations, Audio Stories, to write questions to a scientist, for teaching tips, and other websites to support teaching <b>New Plants</b>.</li> </ul>	<p style="text-align: center;"><b>Investigation/Activity</b></p> <ul style="list-style-type: none"> <li>– Investigation 4: Bulbs and Roots Part 2: Planting Roots, pp. 16-21, Steps 16-21</li> <li>– Investigation Duplication Master: Student Notebooks and Class Calendar</li> <li>– Assessment Duplication Masters Nos. 1, 2, 3: Anecdotal Notes and Assessment Checklist</li> </ul> <p><b>Note:</b> The Focus Question, “What other plant parts can grow new plants?” may be used for student journal entries.</p> <p>Read Science Stories: pp. 40-43, <i>Animal Teeth</i></p> <p>For link to the New Plants Science Stories Audio Stories log on to <a href="http://www.fossweb.com/nyc">www.fossweb.com/nyc</a>: go to Grade 2, click on New Plants. Click on “Media”; click on Audio Stories.</p>	<p style="text-align: center;"><b>Homework/ Extra Practice</b></p>

## Grade 2

<b>WEEK 12</b>	<b>Lesson 35</b> (45 min) <b>Objective(s):</b> Interview Assessment	<b>Alignment with NYS Core Curriculum:</b>	
	<b>Advanced Planning/ Notes to Teachers</b> Teacher Guide, Assessment Folio, pp. 6-11	<b>Investigation/Activity</b> <ul style="list-style-type: none"> <li>– Administer the End-of-Module Assessment – Performance Assessment.</li> <li>– Assessment Duplication Master No. 4</li> <li>– Assessment Duplication Master No. 7, Portfolio Assessment Checklist</li> <li>– Anecdotal Notes and Assessment Checklist</li> </ul>	<b>Homework/ Extra Practice</b>  Investigation 4 Home/School Connection – Student Sheet No. 24
	<b>Lesson 36</b> (45 min) <b>Objective(s):</b> End of Module Assessment	<b>Alignment with NYS Core Curriculum:</b>	
	<b>Advanced Planning/ Notes to Teachers</b> Teacher Guide, Assessment Folio, pp. 6-11	<b>Investigation/Activity</b> <ul style="list-style-type: none"> <li>– Administer the End-of-Module Assessment – Written Assessment.</li> <li>– Assessment Duplication Masters Nos. 5-6</li> <li>– Assessment Duplication Master No. 7, Portfolio Assessment Checklist</li> <li>– Anecdotal Notes and Assessment Checklist</li> </ul>	<b>Homework/ Extra Practice</b>  Have more fun unlocking the mystery of plant life with Detective Leplant!  Visit: <a href="http://www.fossweb.com/modulesK-2/NewPlants/index.html">www.fossweb.com/modulesK-2/NewPlants/index.html</a>  Go to “Media,” then “Websites,” then “The Great Plant Escape.”