



## **Summertime and the Garden is Busy!**



## **A Garden-Based Curriculum** **Developed by Southern Boone Learning Garden**



## ABOUT

Summer is the *perfect* time for teachers and students to get their feet wet in exploring all the educational opportunities the garden has to offer. The curriculum during summer school programs is often more flexible, allowing educators to make even more time for garden activities. Not to mention, with the garden at the peak of its season, there's never a dull moment—a gardener's work is never done!

During the summer school session in June 2013, Southern Boone Learning Garden collaborated with K-2<sup>nd</sup> and 5<sup>th</sup> grades to facilitate garden-based lessons that integrated with summer school topics. Every class had a designated time to come out to the garden each week. The three lessons provided in this unit were originally implemented with Kindergarten and 1<sup>st</sup> grades covering basic garden themes such as exploring soil and planting. Each one is designed to enhance student's learning in a real-world setting while soaking up the summer sun—and fun!

A special note: please refer to our units *Garden Habitats* and/or *Nature's Best: Starting & Maintaining a Student-Run Farmer's Market* for more detailed information about our 2<sup>nd</sup> and 5<sup>th</sup> grade summer school programming.

## HOW TO USE THIS UNIT

- We suggest you use the lessons consecutively—building on topics learned from the previous lesson. They can be done as stand-alone activities as well.
- The standards-based lessons are laid out in a template form with specific objectives and standards.
- The last section *Extension, Digging Deeper* offers modifications for different grade levels and/or additional activities to do after the lesson
- This is an example of what SBLG has done in the past. Modify and add what works best for your needs. We are constantly changing our units, so we encourage you to do the same!





## Welcome to the Garden!

Time & Description	30-45 min. Welcome students to the garden during the first week with this introductory lesson based on a “farm” theme. It can easily be adapted for older ages or other relevant themes being taught.
Objective	To introduce the school rules (safe, respectful, and responsible) within the garden and to complete a garden scavenger hunt.
Teaching Standards	<b>Next Generation Science</b> <ul style="list-style-type: none"> <li>• <b>K-PS3-1.</b> Scientists use different ways to study the world.</li> <li>• <b>K-ESS2-1.</b> Scientists look for patterns and order when making observations about the world.</li> </ul> <b>Common Core</b> <ul style="list-style-type: none"> <li>• <b>K.MD.B.3:</b> Classify objects into given categories; count the number of objects in each category and sort the categories by count. (K-ESS2-1)</li> <li>• <b>W.2.8:</b> Recall information from experiences or gather information from provided sources to answer a question. (2-PS1-1), (2-PS1-2), (2-PS1-3)</li> </ul>
Materials	<ul style="list-style-type: none"> <li>❖ Pictures of farm animals</li> <li>❖ Popsicle sticks</li> <li>❖ Glue/tape</li> <li>❖ Chart paper</li> <li>❖ Markers</li> <li>❖ Farm book(s) (e.g. <u>Serious Farm</u> by Tim Egan or <u>Look Who’s Talking! On the Farm</u> by Danny Tepper)</li> </ul>
Preparation	<ul style="list-style-type: none"> <li>○ Print and cut out various pictures of farm animals</li> <li>○ Glue/tape each picture to a popsicle stick and place them in raised beds</li> </ul>
Procedure	<ol style="list-style-type: none"> <li>1. Introduction of self and school rules within the garden</li> <li>2. Draw a “Safe, Respectful, and Responsible” chart using student ideas. This acts as their ‘contract’ for how to behave in the garden—since they’ll be coming out regularly.</li> <li>3. Explain and practice “I like veggies: I do too!” call and response used to get their attention</li> <li>4. Ask what they know about farms highlighting similarities between gardens and farms (e.g. grow food, animals, etc.)</li> <li>5. Split up into three groups</li> <li>6. Each adult leads one group around the garden looking for pictures of farm animals hiding in raised beds</li> <li>7. Point out what’s growing in each raised bed and taste test whatever is available</li> <li>8. Regroup: share animals they found and foods they tasted</li> <li>9. Read aloud</li> </ol>
Extension, Digging Deeper!	<ul style="list-style-type: none"> <li>❖ Create checklists for older students to mark off as they find the pictures</li> <li>❖ Go on a similar scavenger hunt looking for specific insects, signs of the season, vegetables, flowers, and/or fruits growing in the garden</li> <li>❖ Take a five senses walk to explore the garden</li> <li>❖ If you want to go more in depth comparing the work done on a farm vs. a garden, refer to our lesson: <i>Farm and Garden Comparisons</i></li> </ul>



## Soil Investigators

Time & Description	30-45 min. Often times less is more, especially when teaching younger students. In this lesson, they will simply explore soil by feeling and describing it.
Objective	To discuss the importance of soil while investigating the different types. They'll also have the opportunity to purely dig around and get their hands dirty!
Teaching Standards	<b>Next Generation Science</b> <ul style="list-style-type: none"> <li>• <b>ESS3.A:</b> Living things need water, air, and resources from the land, and they live in places that have the things they need. Humans use natural resources for everything they do. (K-ESS3-1)</li> <li>• <b>LS2.A:</b> Some organisms, such as fungi and bacteria, break down dead organisms (both plants or plant parts and animals) and therefore operate as “decomposers.” Decomposition eventually restores (recycles) some materials back to the soil. (5-LS2-1)</li> <li>• <b>LS2.B:</b> Matter cycles between the air and soil among plants, animals, and microbes as these organisms live and die. Organisms obtain gases, and water, from the environment, and release waste matter (gas, liquid, or solid) back into the environment. (5-LS2-1)</li> </ul>
Materials	<ul style="list-style-type: none"> <li>❖ Hand tools</li> <li>❖ Watering cans</li> <li>❖ Containers—big enough for 5-6 students to gather around at once</li> <li>❖ Soil types (clay, sand, and silt)</li> </ul>
Preparation	<ul style="list-style-type: none"> <li>○ Put samples of soil in three different containers</li> <li>○ Spread them out in the garden as stations</li> <li>○ Place tools and watering cans in an accessible spot</li> <li>○ Fill up one watering can</li> </ul>
Procedure	<ol style="list-style-type: none"> <li>1. Remind students of garden rules and expectations</li> <li>2. Ask: why do plants need soil in order to grow successfully? (e.g. has nutrients, holds water, place for roots to grow)</li> <li>3. Split into three groups (sand, silt, clay) and have at least one adult per station <ul style="list-style-type: none"> <li>• Touch, smell, and describe soil</li> <li>• Rotate through all three stations</li> </ul> </li> <li>4. Regroup: share observations</li> <li>5. Split into three groups with at least one adult per group <ul style="list-style-type: none"> <li>• Pass out hand tools</li> <li>• Lead to an open spot in the garden and dig in soil!</li> <li>• Discuss soil components, insects, etc.</li> </ul> </li> <li>6. <i>If time</i>, demonstrate how to water plants (e.g. pour slowly and close to roots)</li> <li>7. In the same groups, walk around the garden taking turns watering</li> </ol>
Extension, Digging Deeper!	<ul style="list-style-type: none"> <li>❖ Try combining all three soil types together to make loam—the ideal soil type</li> <li>❖ Prepare raised beds for planting by filling them with new soil and compost</li> <li>❖ Have students hold a small sample of soil in the palm of their hand. Add a little bit of water, and then feel &amp; discuss the components. If their sample can easily be made into a ball—there's a lot of clay. If not, see if they can feel the individual sand particles rubbing against the palm of their hands.</li> </ul>





# Planting from Seed



Time & Description	30-45 min. Planting is <i>always</i> a favorite activity among students. They will learn how to plant through hands-on experience and discuss what their seeds will need to grow successfully.
Objective	To plant seeds in the garden.
Teaching Standards	<b>Next Generation Science</b> <ul style="list-style-type: none"> <li>• <b>LS1.C.</b> All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow. (K-LS1-1)</li> <li>• <b>ESS3.A:</b> Living things need water, air, and resources from the land, and they live in places that have the things they need. (K-ESS3-1)</li> <li>• <b>LS2.A:</b> Organisms can survive only in environments in which their particular needs are met. (5-LS2-1)</li> </ul> <b>Common Core</b> <ul style="list-style-type: none"> <li>• <b>MP.5:</b> Use appropriate tools strategically. (1-LS3-1)</li> </ul>
Materials	<ul style="list-style-type: none"> <li>❖ Hand tools</li> <li>❖ Seeds (sunflower, cantaloupe, watermelon, etc.)</li> </ul>
Preparation	<ul style="list-style-type: none"> <li>○ Obtain seeds</li> <li>○ Prep garden space (weed, till soil, fertilize, etc.)</li> <li>○ Place hand tools in an accessible spot</li> </ul>
Procedure	<ol style="list-style-type: none"> <li>1. Remind students of garden rules and expectations</li> <li>2. Explain how to plant and what will be planted: <ul style="list-style-type: none"> <li>• Need to be evenly spaced</li> <li>• Loosen up the soil with hand tool, place aside</li> <li>• With a finger, poke a small hole in the soil</li> <li>• Place seed in hole</li> <li>• Lightly cover with soil</li> </ul> </li> <li>3. Plant and supervise</li> <li>4. Regroup: what will these seeds need to grow successfully?</li> <li>5. <i>If time, free garden exploration and taste test any produce available!</i></li> </ol>
Extension, Digging Deeper!	<ul style="list-style-type: none"> <li>❖ Place a seed on a wet paper towel in a plastic bag. Hang it in the window recording observations. Explain how this same process is happening to the seeds they planted outside</li> <li>❖ Visit seeds in the garden every week or so to measure, record, and discuss their growth</li> <li>❖ Care for seeds: water, weed, and mulch!</li> </ul>



## Eating and Exploring the Parts of a Plant

Time & Description	30-45 min There's no better way to celebrate the last day than with a harvest party! Students will harvest, wash, and enjoy a salad they make themselves.
Objective	To identify different parts of a plant, harvest, and eat them!
Teaching Standards	<b>Next Generation Science</b> <ul style="list-style-type: none"> <li>• <b>LS1.C:</b> All animals need food in order to live and grow. They obtain their food from plants or from other animals. (K-LS1-1)</li> <li>• <b>LS1.A:</b> Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow. (1-LS1-1)</li> <li>• <b>LS1.A:</b> Plants and animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction. (4-LS1-1)</li> <li>• <b>LS1.C:</b> Food provides animals with the materials they need for body repair and growth and the energy they need to maintain body warmth and for motion. (5-PS3-1)</li> </ul>
Materials	<ul style="list-style-type: none"> <li>❖ Salad spinner</li> <li>❖ Plates and knives</li> <li>❖ Produce bags</li> <li>❖ Salad dressing (balsamic vinaigrette or ranch)</li> <li>❖ <u>Tales for Very Picky Eaters</u> by Josh Schneider or <u>Tops and Bottoms</u> by Janet Stevens</li> </ul>
Preparation	<ul style="list-style-type: none"> <li>○ Check out book</li> <li>○ Buy dressing</li> </ul>
Procedure	<ol style="list-style-type: none"> <li>1. Remind students of the garden rules</li> <li>2. Ask: what does it mean to harvest?</li> <li>3. Divide into three harvesting groups with at least one adult per group: <ul style="list-style-type: none"> <li>• Turnips and radishes</li> <li>• Pea pods and broccoli</li> <li>• Lettuce and kale</li> </ul> <p><i>Note: produce will vary depending on season!</i></p> </li> <li>4. Each student harvests about one of each and places in bag</li> <li>5. Wash and remove inedible parts</li> <li>6. Regroup: hold up examples of either a root part, leaf part, or stem part from harvest <ul style="list-style-type: none"> <li>• Ask: what part of the plant are we eating?</li> </ul> </li> <li>7. In the meantime, another adult combines all the salad ingredients</li> <li>8. Pass out plates, salad, and dressing</li> <li>9. Read aloud while eating</li> <li>10. Students throw uneaten scraps in compost</li> <li>11. Rinse off dishes</li> <li>12. Reflection: students share either their favorite thing they did during summer school, or something they would like to do in the future</li> </ol>
Extension, Digging Deeper!	<ul style="list-style-type: none"> <li>❖ Make salad dressing (buttermilk or balsamic vinaigrette)</li> <li>❖ Harvest different vegetables to make another salad. Be sure to highlight why different plants grow during different seasons</li> <li>❖ With older students, include "fruit" (pea pod, squash) and "seed" (pea) in plant part discussion</li> </ul>