



# Garden Safari

## Grade Kindergarten

### Standards

GPS SKL1c; SKL2b  
NGSS K.LS1.C, K.ESS3.A,  
1.LS3.A, 1.LS1.D, 1.LS3.B

### Time

60 minutes

### Supplies

(per class)

- 6 – 8 empty tissue boxes
- Objects from garden, schoolyard
- Tape (optional) to reduce hole
- **Plant Secrets** by Emily Goodman

(per pair of students)

- Paper lunch sack
- Safari checklists glued to sack  
OR checklists and glue sticks and  
sacks for children to make
- Pencil

### Garden Connection

Students will visit the garden to observe whatever is growing and collect specimens.

### Overview

Students will expand their powers of observation by investigating mystery boxes and exploring similarities and differences among plants through a field investigation in the garden. They will go on safari in the schoolyard to look for examples of specific plant structures, make qualitative observations about physical attributes of each specimen, and articulate the similarities and differences among items of the same type (such as leaves or flowers).

### Essential Questions

What can I discover in the garden, using all my senses?

### Engaging Students

Students will investigate unseen objects in mystery boxes using the senses of touch, smell, and hearing, and will expand their vocabulary of descriptive words by thinking in terms of all the senses they can use to characterize the objects.

### Exploration

Students will explore the garden and look for items on a Garden Safari checklist in order to gain experience observing and describing similarities and differences, using all their senses. Then the class will listen to a book comparing plant parts and growth cycles exhibited by four different plants.

### Explanation

Students will describe plant characteristics, similarities, differences, common structures and parts, and point out probable relationships between mature plants and seedlings.

### Environmental Stewardship

Students will create and care for a garden, tending to plant needs.

### Evaluation

Students will identify similarities and differences among plants as they use all their senses to describe characteristics.

### Extension

Items collected during the Garden Safari can be combined for sorting activities. Mature plants in the garden can be used for taste testing, in a whole class activity.

## Standards

### Georgia Performance Standards in Science

**SKL1. Students will sort living organisms and non-living materials into groups by observable physical attributes.**

c. Group plants according to their observable features such as appearance, size, etc.

**SKL2. Students will compare the similarities and differences in groups of organisms.**

b. Explain the similarities and differences in plants (color, size, appearance, etc.)

c. Recognize the similarities and differences between a parent and a baby.

**SKP1. Students will describe objects in terms of the materials they are made of and their physical properties.**

a. Compare and sort materials of different composition (common materials include clay, cloth, paper, plastic, etc.).

b. Use senses to classify common materials, such as buttons or swatches of cloth, according to their physical attributes (color, size, shape, weight, texture, buoyancy, flexibility).

### Next Generation Science Standards

K.LS1.C: Organization for Matter and Energy Flow in Organisms

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)

K.ESS3.A: Natural Resources

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)

1.LS3.A: Inheritance of Traits

Young animals are very much, but not exactly like, their parents. Plants also are very much, but not exactly, like their parents. (1-LS3-1)

1.LS1.D: Information Processing

Animals have body parts that capture and convey different kinds of information needed for growth and survival.

Animals respond to these inputs with behaviors that help them survive. Plants also respond to some external inputs.

(1-LS1-1)

1.LS3.B: Variation of Traits

Individuals of the same kind of plant or animal are recognizable as similar but can also vary in many ways. (1-LS3-1)

## Teacher Background Information

Reading [Plant Secrets](#) in advance will provide valuable background information and point out analogous structures with similar functions among different species of plants, as well as various versions of the plant growth cycle.

## Teacher Preparation

In advance of the lesson, ask parents to send in empty tissue boxes. Fill each one with a mystery item that students can investigate using senses other than sight. Tape the hole smaller if necessary to keep items from falling out or being seen. Leave a large enough hole for each student to reach a hand inside.

Before the Garden Safari, make copies of the Safari Checklist; cut them in half vertically, and have each student (or pair of students) glue one list on the front of a paper lunch sack and the other list on the back. Recruit parents or volunteers to assist with classroom management outdoors.

## PROCEDURES FOR LESSON ACTIVITIES

### Engagement (15 minutes)

Make mystery boxes from empty tissue boxes; fill each box with a plant-based item collected from the schoolyard such as a pine cone, flower, fruit, leaf, bark, or nut. Give each child a turn to reach in the box, feel the item and describe it. Encourage students to use three words to describe the item without guessing what it is. When all students have had a chance to describe the item in the box, ask the class to guess the item. Then open the box to reveal the contents. The point is to introduce students to ways of observing, and to encourage use of adjectives to describe physical attributes.

### Exploration (45 minutes)

Before beginning the Garden Safari, divide the class into buddy pairs or teams of four to go outside.

- Distribute a collecting bag (paper lunch sack with Garden Safari Checklists glued to each side) along with a clipboard and pencil to each team. Alternatively – instead of preparing the collecting bags in advance, copy the lists, cut them apart vertically, give each team both lists, and have students glue a different list to each side.
- Establish boundaries by placing soccer cones or other highly visible markers at the perimeter of the area student teams will be allowed to explore. Avoid (or point out) any hazards such as poison ivy or fire ants. Limiting students to the school garden will limit the hazards they may encounter. Establish a signal to call students back from their explorations, and practice reassembling the group in record time (keeping teams or buddy pairs together).
- Give students 5- 10 minutes to collect items on their list.
- Reassemble the group and ask teams to hold up the specimens they have collected for each item listed. If tasting food was forbidden while students were collecting, allow them to taste and describe a plant from the garden with supervision. Take turns asking each student to use words to describe a favorite item collected. When students run out of descriptive words, prompt them to use all their senses (except taste) to think of characteristics to describe.
- In debriefing the activity, highlight items that appear to be similar and items of the same type that appear to be different (for instance, a leaf with an entire (smooth) edge compared to a leaf with a toothed edge; a leaf that is fragrant when crushed compared to one that does not smell).
- Challenge students to find common structures that look different among various types of plants: for instance, ask each student to show any seeds or nuts they collected and discuss commonalities (every plant has seeds or nuts, in some form or another), functions (all seeds and nuts contain what is needed to grow baby plants) and appearances (find similarities and differences among seeds and nuts); as well as common needs (light, water, etc.)
- Ask students to point out seedlings and parent/mature plants of the same type (for instance, a volunteer pine seedling in the garden and a mature pine tree growing near the garden) noticing commonalities and differences.

Read the book **Plant Secrets** by Emily Goodman, which compares the parts of four different plant species (rose, oak, pea and tomato) and highlights similarities and differences among analogous structures. In addition, this book shows the growth cycle and compares seedlings to mature plants of the same species. Encourage student discussion.

### Explanation

Students will be able to argue from evidence that most plants have the same basic parts, even though they may look very different from one plant to the next. Students will also be able to rely on all their senses to describe and compare similarities and differences among plants, and will make the connection between baby plants and mature specimens.

### Environmental Stewardship

After the lesson, students will design, plant and tend a sensory garden in a container or raised bed. Sensory gardens can reduce stress, frustration and anxiety for all students, including those with sensory processing issues.

### Extension

For more information on designing and building sensory gardens: <http://www.planetnatural.com/sensory-gardens/>

### Evaluation

A rubric is provided to assist with assessing student performance on these tasks.



## Assessment for Garden Safari

Student Name(s): \_\_\_\_\_ Date: \_\_\_\_\_

<p style="text-align: center;"><b>Level of Mastery</b></p> <p style="text-align: center;"><b>Benchmark or Performance Measure</b></p>	<p style="text-align: center;"><b>EMERGING</b> Not yet proficient <b>1 point</b></p>	<p style="text-align: center;"><b>COMPETENT</b> Partially proficient <b>4 points</b></p>	<p style="text-align: center;"><b>PROFICIENT</b> Mastered task <b>5 points</b></p>	<p style="text-align: center;"><b>TOTAL POINTS</b></p>
<p><b>Student relies on his or her senses to describe things found in the garden (especially plant parts).</b></p>	<p>Student describes plant appearance using less than three descriptive words or phrases.</p>	<p>Student described plant appearance using at least three descriptive words or phrases and one other sense.</p>	<p>Student can describe plants or plant parts in terms of appearance, smell, texture, and sound (as when shaken inside a mystery box). Taste is optional, based on directions teacher gave students.</p>	
<p><b>Student compares similarities and differences among plants of different species.</b></p>	<p>Student points out one or fewer plant parts with similar functions in two different species of plants (i.e. identifying and explaining the roots of each plant)</p>	<p>Student points out two or three plant parts with similar functions in two different plant species.</p>	<p>Student points out four or more plant parts with similar functions in two different plant species.</p>	
<p><b>Student compares similarities and differences among older and younger plants of the same species (such as seedling and mature plant)</b></p>	<p>Students will be unable to make the connection between immature and mature versions of the same plants.</p>	<p>Students will either recognize the similarities among baby and parent plants of the same species OR will explain how plants change as they progress from seed to mature plant.</p>	<p>Students will recognize the similarities among baby and parent plants of the same species, AND will explain how plants change as they progress from seed to mature plant.</p>	



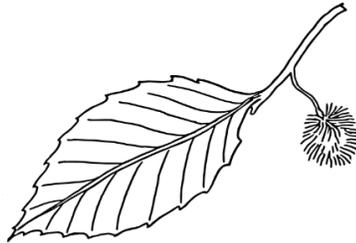
# Garden Safari Checklist

(Option: cut and paste these items on a paper gathering bag)

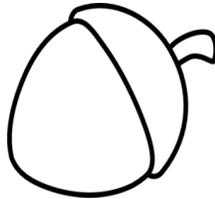
Names of Team Members:

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Leaf



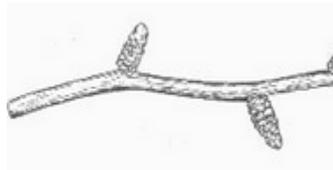
Nut or Acorn



Bark



Twig



Flower

