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Selby Gardens Education Department

Teacher Resources

Native Florida Plants Curriculum

Kindergarten: Growing Plants & Plant Uses

First Grade: Plant Parts

Second Grade: Plant Needs & Weather

Teacher-created Curriculum resources sponsored by:



(The following units have been designed & prepared by Shonna Brady, 2014)

Title: A Kindergarten Study of Plants

Topic : 5 senses, plants, timelines

General Idea for Project:

An herb garden is easy to grow. Herbs can be sprouted indoors or out and can be grown in pots or in raised beds. Growing herbs gives children an experience with a variety of tasting opportunities soon after watching seeds sprout.

SS.K.A.1.1 Develop an understanding of how to use and create a timeline.

HE.K.P.7.1 Identify healthy practices and behaviors to maintain or improve personal health.

SC.K.N.1.1 Collaborate with a partner to collect information.

SC.K.N.1.2 Make observations of the natural world and know that they are descriptors collected using the five senses.

SC.K.N.1.3 Keep records as appropriate -- such as pictorial records -- of investigations conducted.

SC.K.N.1.4 Observe and create a visual representation of an object which includes its major features.

SC.K.N.1.5 Recognize that learning can come from careful observation.

21st Century Skills :

- Students will learn how to care for plants.
- Students will use writing and pictures to record the timeline of growing herbs.
- Students will create and eat healthy foods using herbs.

Product/Community Connection:

- Visit Selby Botanical Gardens.
- Create a time line showing the life cycle of various herbs. Share food created by students.

Driving Questions:

How can we show the stages of development of herbs?
What can we make with our herbs?

Plan for Assessment:

1. Peer and Self-Assessment: Students and teachers can use this themed, easy to use rubric to show his/her progress as part of a team during growing projects.
2. Teacher Observation (Running Record)
3. Create Project Time Line including anticipated sprouting dates and harvesting dates, visit to Selby Gardens, dates and times of volunteers, as well as the celebration date. Update the Time Line as the project goes on.

Pre-visit Activity:

Show students a variety of seed packets (student could bring seeds from home). Also share spices and herbs from the kitchen. Let students smell, taste and touch the various herbs. KWL with students to find out what they know and what they are interested in learning about herbs. Discuss how herbs can be grown, dried and packaged for families to use in cooking at home. (Full Explanation Below)

Opportunities for student voice and choice:

- Students will choose which group of herb seeds to use for planting.
- Students will decide what dishes to make with their herbs.
- Students will work with a partner or in groups to complete tasks of growing and cooking.

Resources:

- For cooking with kids (recipes and herb info): kidshealth.org and foodnetwork.com
- For her activities and crafts: <http://mamarosemary.com/herbs-for-kids/>
- For questions about quick sprouting seed activities:
<http://homeguides.sfgate.com/flower-seeds-sprout-one-week-60864.html>

The Carrot Seed by Ruth Krauss (also in Spanish)

From Seed to Plant by Gail Gibbons

The Spice Alphabet Book: Herbs, Spices, and Other Natural Flavors by Jerry Pallotta

Kid's Herb Book, A: For Children of All Ages by Lesley Tierra

The Enormous Turnip by Alexei Tolstoy

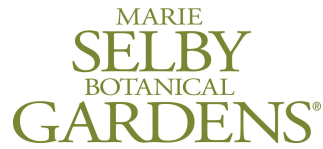
Pearl Barley and Charlie Parsley by Aaron Blabey

Good Enough to Eat by Lizzy Rockwell

Pre-visit Activity: Sprout Herb Seeds

Show students a variety of seed packets of different herbs. Talk about how herbs and spices come from plants. KWL with students to find out what they know and what they are interested in learning about herbs. Discuss how herbs can be grown, dried and packaged for families to use in cooking at home.

- Invite students to bring herbs to school in the form of seeds or from their kitchen at home. Have students fill out Herb and Spice Information Sheet and share. Research missing information with The Spice Alphabet Book: Herbs, Spices, and Other Natural Flavors by Jerry Pallotta and Kid's Herb Book, A: For Children of All Ages by Lesley Tierra
- Explore the website and choose a few herb/spice activities to explore with children. This website provides multi-sensory experiences with common herbs and spices. Perfect for the introductory activity of exploring herbs and spices. For herb activities and crafts: <http://mamarosemary.com/herbs-for-kids/>
- Research recipes using different herbs. For cooking with kids (recipes and herb info): kidshealth.org and foodnetwork.com Ideas that require minimal cooking: tabouli (uses parsley), salsa (uses cilantro), pesto (uses basil). Make sure you grow the herbs you need for your cooking projects.
- Then, choose herbs seeds and sprout them. Transplant when they are ready. For questions about quick sprouting seed activities: <http://homeguides.sfgate.com/flower-seeds-sprout-one-week-60864.html> Also see seed sprouting instructions sheet.
- Students will record simple observations of their plants (see Plant Observation Sheet).
- Students will work individually on timelines. Timelines can take any format that includes writing (documenting change), pictures and/or photographs, depending on school's resources and student interest. Timelines should begin with the seed and end with the cooking project. Students will work in groups on their growing and cooking projects.
- Read books about seeds and food: The Carrot Seed by Ruth Krauss (also in Spanish), From Seed to Plant by Gail Gibbons



During Visit Activity: Small Group Scavenger Hunts:

- Altogether, talk about what characteristics make up living vs. non-living things.
- In small groups, explore the garden looking for items on the Small Group Scavenger Hunt (living vs. non-living, plant parts and/or 5 senses).
- In the Rainforest play area, set up a 5 Senses Guessing game where students sniff (herbs and spices) and guess. Have cuttings of different herbs that students may not have experienced in their studies to taste, look at and touch.
- Share student findings from the scavenger hunts.

Post-visit Activities: Tasting Potluck Celebration and Display Timelines

- Make invitations to a Tasting Potluck Celebration inviting families to make their favorite dishes and bring them to share on at Selby Gardens for a student exhibit night/day.
- Read books about seeds and friendship:
 1. The Enormous Turnip by Alexei Tolstoy
 2. Pearl Barley and Charlie Parsley by Aaron Blabey
- Continue to care for herbs.
- Harvest herbs and do cooking projects.
- Finish timelines and then use Critical Friends technique where peers look at each timeline and give one thing they like about the timeline and one suggestion for editing. Edit for final presentation.
- Have a volunteer type and print recipes for sharing at the Tasting Celebration.
- Share dishes at Selby Gardens and display timelines of herbs.
- Have students use the scavenger hunt sheets with their families as they tour around the garden.

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Scavenger Hunt Checklist

Look for plant parts. Record which plants have large parts and which plants have small parts.

Plant Part	Large	Small
stem		
roots		
leaves		
flowers		

Scavenger Hunt Checklist

Draw and write about how you used your senses in the garden.

Smell
Feel
See
Hear
Taste

Peer and Self-Assessment

Name: _____ Date: _____

I am



getting better



pretty good



completely awesome ...at not being silly.

I am



getting better
with my team.



pretty good



completely awesome ...at working cooperatively

I am



getting better



pretty good



completely awesome ...at being kind.

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I am



getting better



pretty good



completely awesome ... at talking with my team.

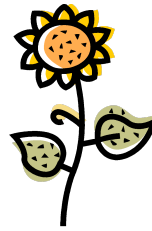
I am



getting better



pretty good



completely awesome ... at listening to my team.

Ways to Improve:

Seed Sprouting



Supplies:

Large tub, seed starting soil, pots of sprouting trays (could recycle yogurt cups with holes poked in the bottom), water, pencil, popsicle sticks, fine point markers, seeds

Instructions:

1. Moisten the soil lightly.
2. Fill sprouting trays or small pots with soil. Remind students not to mash down the soil.
3. Use a pencil to poke a hole in the soil.
4. Drop 1-2 seeds into each hole. Be careful with tiny herb seeds. Use magnifying glasses to see them more easily.
5. Water.
6. Label with popsicle stick (date, plant, team)
7. Place in a warm, sunny location.

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Living	Non-Living

Plant Observation Sheet

Team Members: _____

Label Information _____

Date:	Height (cm):	Number of leaves:	Observations:

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Title: "A Kindergarten Celebration of Dolls Through Time"

Topic : plants, history, character, literature

General Idea for Project:

Students will learn about the uses of plants by growing cotton to use as stuffing for making dolls. They will share their dolls at a family celebration at Selby Botanical Garden.

Significant Content/Standards

We need plants for many different things. People used plants long ago just like we use them today. Cotton is one of the plants we can grow here in Florida. Cotton is used for many things.

SCKL14.3 Observe plants and animals, describe how they are alike and how they are different in the way they look and in the things they do.

SSKA2.1 Compare children and families of today with those in the past.

SSKA2.4 Listen to and retell stories about people in the past who have shown character ideals and principles including honesty, courage, and responsibility.

SCKN1.4 Observe and create a visual representation of an object which includes its major features.

SCKN1.5 Recognize that learning can come from careful observation.

LAFSKL3.6 Use words and phrases acquired through conversations, reading and being read to, and responding to texts.

LAFSKRI1.3 With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text.

Big Understanding:

We can grow cotton and use it exactly as they did long ago. Our lives are both the same and different from the lives of people who lived long ago. Dolls can comfort us and help us cope.

21st Century Skills:

- Students will learn how to care for plants.
- Students will hand sew dolls.
- Students will research dolls in history through stories and technology.
- Students will respect each other and our use/possession of dolls.

Product/Community Connection:

Create dolls to be shared with community. Visit Selby Botanical Gardens.

Driving Question:

How can we grow cotton to be used as stuffing for making dolls?

Plan for Assessment:

4. Peer and Self Assessment-Students and teachers can use this themed, easy to use rubric to show his/her progress as part of a team during growing projects.
5. Teacher Observation (Running Record)
6. Create Project Time Line including anticipated sprouting dates and harvesting dates, visit to Selby Gardens, dates and times of volunteers, as well as the celebration date. Update the Time Line as the project goes on.

Pre-Visit Activity:

Plant a variety of seeds including cotton. Talk about what each seed will grow.

Opportunities for student voice and choice:

- Students will choose design for doll.
- Students will decide if his/her doll will be donated to a child in the community.
- Students will adorn dolls with beads, trinkets and treasures from the art closet and student donations.

Resources:

- For questions about quick sprouting seed activities:
<http://homeguides.sfgate.com/flower-seeds-sprout-one-week-60864.html>
- For questions about growing cotton: <http://www.cottonginmuseum.org/museum.htm>
- For the history and more growing information:
<http://www.cottonsjourney.com/Storyofcotton/print.asp>

Books:

- The Legend of the Bluebonnet by Tommie dePaulo
- William's Doll by Charlotte Zolotow
- Elizabeth's Doll by Stephanie A. Bodeen
- The Tub People by Pam Conrad
- Penny and Her Doll by Kevin Henkes
- The Doll People by Ann Matthews Martin (series)
- Molly's Pilgrim by Barbara Cohen
- From Plants to Blue Jeans by Arthur John L'Hommedieu

Pre-Visit Activities: Grow cotton and Plan Dolls

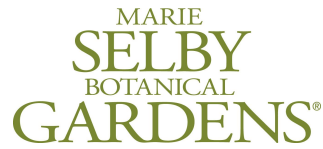
- Sprout a variety of seeds (see seed sprouting instructions).
- Observe and keep pictorial records of germination.
- Transplant cotton and other seedlings into pots or a school garden.
- Care for cotton and other plants.
- While the cotton is growing, read stories about dolls. Discuss, write and draw pictures about dolls from long ago and dolls today.
- Read about cotton on the computer (see websites).
- Have students share dolls from home and record their stories about them (dictation, audio or video).
- Design dolls. Recruit a helper to sew doll shapes on plain muslin fabric, leaving an opening for student's to stuff with cotton.

During Visit Activity: Plant Uses Scavenger Hunt

- Make a list of all of the things plants can be used for.
- In small groups, look for specific plants and draw pictures of plants on the checklist (taking students to all the different parts of the garden) (*Wild Cotton grows at Selby Gardens along Tidal Lagoon Shoreline*)

OR

- Use attached general checklist.
- In the Rainforest play areas, set up a matching game where kids can match seeds with pictures or real items that the seed produces. Also, set up a sorting station where children can sort different kinds of seeds. Provide magnifying glasses for children to examine seeds and plants.



Post-Visit Activity: Paint and stuff dolls / Share dolls with the community.

- Harvest cotton for dolls.
- Collect trinkets and treasures for adorning dolls (donations and art closet).
- Paint student designs on fabric (with art teacher or volunteer helpers). Permanent markers can also be used.
- Stuff dolls (depending on amount of harvest, additional stuffing may be necessary-compare fiberfill with student-grown cotton).
- Attach trinkets and treasures.
- Research places dolls could be donated (hospital, youth shelters).
- Have a student exhibit at Selby Gardens during which families can visit the garden and see the students' dolls before they are donated.
- Continue to grow plants in garden or in pots.

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Kind of Plants	How We Use Them

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Name: _____

Plant Uses Checklist:

✓ Plants that make noise:

✓ Plants we can eat:

✓ Plants with sharp thorns:

✓ Plants that catch bugs:

✓ Plants that hold water:

✓ Plants that grow flowers:

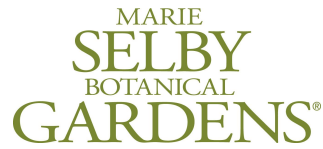
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Chaperones help students either photograph, draw pictures or write the name of the plants they see in the garden that are on the checklist.

Team Members: _____

Label Information _____

Date:	Height (cm):	Number of leaves:	Observations:



Selby Garden Curriculum

Title: A First Grade study of plants.

Topic : 5 senses, plants, timelines

General Idea for Project:

An herb garden is easy to grow. Herbs can be sprouted indoors or out and can be grown in pots or in raised beds. Growing herbs gives children an experience with a variety of tasting opportunities soon after watching seeds sprout.

SC.1.N.1.2 Using the five senses as tools, make careful observations, describe objects in terms of number, shape, texture, size, weight, color, and motion, and compare their observations with others.

SC.1.N.1.3 Keep records as appropriate - such as pictorial and written records - of investigations conducted.

SC.1.L.14.1 Make observations of living things and their environment using the five senses.

SS.1.A.3.2 Create a timeline based on the student's life or school events, using primary sources.

SC.1.E.5.4 Identify the beneficial and harmful properties of the Sun.

21st Century Skills to be incorporated:

1. Students will learn how to care for plants.
2. Students will use technology as well as writing and pictures to record the steps in sprouting and growing herbs
3. Students will protect their skin from the Sun during outdoor activities.

Product/Community Connection:

- Visit Selby Botanical Gardens
- Create a time line showing the life cycle of various herbs

Driving Question:

How can we show the stages of development of herbs?

Plan for Assessment - use your favorite rubrics, or:

- Peer and Self-Assessment: Students can use this themed, easy to use rubric to show his/her progress as part of a team during growing projects.
- Writing Rubric (<http://snippetsbysarah.blogspot.com/2011/01/writing-rubrics.html>) - This site contains excellent rubrics for writing.
- Teacher Observation (Running Record)
- Create Project Time Line including anticipated sprouting dates and harvesting dates, visit to Selby Gardens, dates and times of volunteers, as well as the celebration date. Update the Time Line as the project goes on.

Pre-visit Activity (Entry Event - at school)

Show students a variety of seed packets (student could bring seeds from home). Also share spices and herbs from the kitchen. Let students smell, taste and touch the various herbs. KWL with students to find out what they know and what they are interested in learning about herbs. Discuss how herbs can be grown, dried and packaged for families to use in cooking at home.

Opportunities for student voice and choice:

- Students will choose which group of herb seeds to use for planting.
- Students will decide what to use in showing the time line of their herb (including photos, drawings, writing, technology).

Resources:

For herb activities and crafts: <http://mamarosemary.com/herbs-for-kids/>

For questions about quick sprouting seed activities:

<http://homeguides.sfgate.com/flower-seeds-sprout-one-week-60864.html>

The Carrot Seed by Ruth Krauss (also in Spanish)

From Seed to Plant by Gail Gibbons

The Spice Alphabet Book: Herbs, Spices, and Other Natural Flavors by Jerry Pallotta

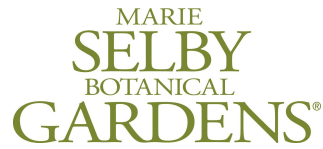
Kid's Herb Book, A: For Children of All Ages by Lesley Tierra

The Enormous Turnip by Alexei Tolstoy

Pearl Barley and Charlie Parsley by Aaron Blabey

Pre-Visit Activities: Sprout herb seeds

- Entry Event: Show students a variety of seed packets of different herbs. Also share spices and herbs from the kitchen. Let students smell, taste and touch the various herbs. KWL with students to find out what they know and what they are interested in learning about herbs. Discuss how herbs can be grown, dried and packaged for families to use in cooking at home.
- Invite students to bring herbs to school in the form of seeds or from their kitchen at home. Have students fill out Herb and Spice Information Sheet and share. Research missing information with The Spice Alphabet Book: Herbs, Spices, and Other Natural Flavors by Jerry Pallotta and Kid's Herb Book, A: For Children of All Ages by Lesley Tierra
- Explore the website and choose a few herb/spice activities to explore with children. This website provides multi-sensory experiences with common herbs and spices. Perfect for the introductory activity of exploring herbs and spices. For herb activities and crafts: <http://mamarosemary.com/herbs-for-kids/>
- Choose herbs and sprout them. Transplant when they are ready. For questions about quick sprouting seed activities: <http://homeguides.sfgate.com/flower-seeds-sprout-one-week-60864.html> Also see seed sprouting instructions sheet.
- Students can work individually or in small groups to create the timeline for their herbs. Timelines can take any format that includes writing (documenting change), pictures and/or photographs, depending on school's resources and student interest. Timelines should begin with the seed and end with the harvest.
- Review Sun safety (hats, sunglasses and sunscreen) during outdoor activities. Create a poster or collage of ways to be safe in the Sun as a reminder.
- Read books about seeds: The Carrot Seed by Ruth Krauss (also in Spanish), From Seed to Plant by Gail Gibbons

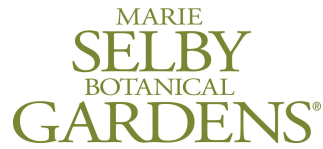


During Visit Activity: Small Group Scavenger Hunts

- Altogether, talk about what characteristics make up living vs. non-living things.
- In small groups, explore the garden looking for items on the Small Group Scavenger Hunt checklists.
- In the Rainforest play area, have a plant parts sorting game set up. Include different sizes of each plant parts. Provide magnifying glasses for students to use in observing plant parts closely. Do plant parts activity.
- Share student findings from the scavenger hunts.

Back to Class Activities: Family Celebration and display timelines

- Share student findings from the scavenger hunts.
- Read books about seeds and friendship: The Enormous Turnip by Alexei Tolstoy and Pearl Barley and Charlie Parsley by Aaron Blabey
- Continue to care for herbs.
- Harvest and taste herbs (Save one plant of each type of herb for making seeds. Do not harvest from these plants and watch them go to seed).
- After herb plants go to seed, harvest seeds. Package seeds for sharing at the seed celebration.
- Finish timelines and then use Critical Friends technique where peers look at each timeline and give one thing they like about the timeline and one suggestion for editing. Edit for final presentation.
- Invite families to come to Selby Gardens for a Seed Celebration.
- Share timelines and give away seed packets at Seed Celebration.
- Have students use their completed scavenger hunt checklist from their school visit to show their families around the garden.



Selby Garden Curriculum

Title: A First Grade study of plants.

Topic : plants, literature

General Idea for Project:

Students will learn about the parts of plants by growing cotton to use as stuffing for making dolls. They will share their dolls at a family celebration at Selby Botanical Garden.

SC.1.E.5.3 Investigate how magnifiers make things appear bigger and help people see things they could not see without them.

SC.1.L.14.3 Differentiate between living and nonliving things.

SC.1.N.1.3 Keep records as appropriate - such as pictorial and written records - of investigations conducted.

SC.1.E.5.4 Identify the beneficial and harmful properties of the [Sun](#).

SC.1.E.6.2 Describe the need for water and how to be safe around water.

SC.1.E.6.3 Recognize that some things in the world around us happen fast and some happen slowly.

SC.1.L.14.1 Make observations of living things and their environment using the five senses.

SC.1.L.14.2 Identify the major parts of plants, including stem, roots, leaves, and flowers.

LAFS.1.L.1.1 Demonstrate command of the conventions of standard English grammar and usage when writing and speaking.

LAFS.1.RL.1.3 Describe characters, settings, and major events in a story, using key details.

21st Century Skills:

- Students will learn how to care for plants.
- Students will hand sew dolls.
- Students will protect their skin from the Sun during outdoor activities.

Product/Community Connection:

- Visit Selby Botanical Gardens.
- Create dolls to be shared with community.

Driving Question:

What do plants need to survive? How do I stay safe while caring for plants?

Plan for Assessment-use your favorite rubrics or:

- Peer and Self-Assessment-Students can use this themed, easy to use rubric to show his/her progress as part of a team during growing projects.
- Writing Rubric (<http://snippetsbysarah.blogspot.com/2011/01/writing-rubrics.html>) - This site contains excellent rubrics for writing.
- Teacher Observation (Running Record)
- Create Project Time Line including anticipated sprouting dates and harvesting dates, visit to Selby Gardens, dates and times of volunteers, as well as the celebration date. Update the Time Line as the project goes on.

Entry Event (at school)

Plant a variety of seeds including fast sprouting (flowers and herbs) and slower sprouting seeds. Talk about what each seed will grow.

Opportunities for student voice and choice:

- Students will choose which group of seeds to observe.
- Students will choose design for doll.
- Students will decide if his/her doll will be donated to a child in the community.
- Students will adorn dolls with beads, trinkets and treasures from the art closet and student donations.

Resources:

- For questions about quick sprouting seed activities:
<http://homeguides.sfgate.com/flower-seeds-sprout-one-week-60864.html>
- For questions about growing cotton: <http://www.cottonginmuseum.org/museum.htm>
- For the history and more growing information:
<http://www.cottonsjourney.com/Storyofcotton/print.asp>

Books:

The Legend of the Bluebonnet by Tommie dePaulo

William's Doll by Charlotte Zoltow

Elizabeth's Doll by Stephanie A. Bodeen

The Tub People by Pam Conrad

Penny and Her Doll by Kevin Henkes

The Doll People by Ann Matthews Martin (series)

Molly's Pilgrim by Barbara Cohen

From Plants to Blue Jeans by Arthur John L'Hommedieu

Pre-Visit Activities: Grow cotton and plan dolls.

- Sprout a variety of seeds (see seed sprouting instructions).
- Observe and keep records of germination. Use magnifying glasses to look closely at the plants as they grow.
- Transplant cotton and other seedlings into pots or a school garden.
- Continue to keep records of each seed, flower and height of stem as plants grow.
- Care for plants including cotton.
- While the cotton is growing, read stories about dolls. Compare, discuss, write and draw about dolls in the stories.
- Read about cotton on the computer (see websites For questions about growing cotton: <http://www.cottonginmuseum.org/museum.htm> and for the history and more growing information: <http://www.cottonsjourney.com/Storyofcotton/print.asp>).
- Have students share dolls from home. Students can write and draw pictures about their doll.
- Design dolls. Recruit a helper to sew doll shapes on plain muslin fabric, leaving an opening for

student's to stuff with cotton.

During Visit Activity: Small Group Scavenger Hunts

- Altogether, talk about what characteristics make up living vs. non-living things.
- In small groups, explore the garden looking for items on the Small Group Scavenger Hunt checklists.
- In the Rainforest play area, have a plant parts sorting game set up. Include different sizes of each plant parts. Provide magnifying glasses for students to use in observing plant parts closely. Set up a game where students put a plant back together (either paint plant parts on blocks or use actual parts).
- Share student findings from the scavenger hunts.

After-visit Activities: Create Dolls Paint and stuff dolls.

- Harvest wild cotton for dolls.
- Collect trinkets and treasures for adorning dolls (donations and art closet).
- Paint student designs on fabric (with art teacher or volunteer helpers).
- Stuff dolls (depending on amount of harvest, additional stuffing may be necessary-compare fiberfill with student-grown cotton).
- Attach trinkets and treasures.
- Research places dolls could be donated (hospital, youth shelters).
- Donate dolls and have a student exhibit at Selby Gardens during which families can visit the garden and see the students' dolls.
- Give families the Five Senses Scavenger Hunt checklist to use during their visit with the garden.

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Team Members: _____

Label Information _____

Date:	Height (cm):	Number of leaves:	Observations:

Scavenger Hunt Checklist

Draw and write about how you used your senses in the garden.

Smell
Feel
See
Hear
Taste

Title: A Second Grade study of plants.

Topic : plants, literature

General Idea for Project:

Students will learn about the importance of soil and water when growing Florida native plant, wild cotton to use as stuffing for making dolls. They will share their dolls at a family celebration at Selby Botanical Garden.

SC.2.E.6.1 Recognize that Earth is made up of rocks. Rocks come in many sizes and shapes.

SC.2.E.6.2 Describe how small pieces of rock and dead plant and animal parts can be the basis of soil and explain the process by which soil is formed

SC.2.E.6.3 Classify soil types based on color, texture (size of particles), the ability to retain water, and the ability to support the growth of plants

SC.2.E.8.5 Measure and compare temperatures taken every day at the same time.

SC.2.E.8.6 Measure and compare the volume of liquids using containers of various shapes and sizes.

LAFS.2.RL.1.3 Describe how characters in a story respond to major events and challenges.

LAFS.2.RL.3.8 Describe how an author uses reasons to support specific points in a text.

21st Century Skills to be incorporated:

- Students will learn how to care for plants.
- Students will hand sew dolls.
- Students will protect their skin from the Sun during outdoor activities.

Product/Community Connection:

- Visit Selby Botanical Gardens.
- Create dolls to be shared with community.

Driving Question:

What do plants need to survive? How do I stay safe while caring for plants?

Plan for Assessment:

- Peer and Self-Assessment: Students can use this themed, easy to use rubric to show his/her progress as part of a team during growing projects.
- Writing Rubric (<http://www.surfinthroughsecond.com/2013/10/common-core-writing-rubrics.html>) - This site contains excellent rubrics for second grade writing.
- Teacher Observation (Running Record)
- Create Project Time Line including anticipated sprouting dates and harvesting dates, visit to Selby Gardens, dates and times of volunteers, as well as the celebration date. Update the Time Line as the project goes on.

Entry Event (at school)

Plant a variety of seeds including cotton seeds. Talk about what each seed will need to grow. Consider setting up some experiments including using different temperature water for watering, using different quantities of water for sprouting.

Opportunities for student voice and choice:

- Students will choose which group of seeds to observe.
- Students will choose design for doll.
- Students will decide if his/her doll will be donated to a child in the community.
- Students will adorn dolls with beads, trinkets and treasures from the art closet and student donations.

Resources:

For soil diagram: <http://www.saburchill.com/chapters/chap0058.html>

For soil experiment worksheet and activity: <http://waterlandlife.org/assets/BeneathYourFeet.pdf>

For questions about quick sprouting seed activities:

<http://homeguides.sfgate.com/flower-seeds-sprout-one-week-60864.html>

For questions about growing cotton: <http://www.cottonginmuseum.org/museum.htm>

For the history and more growing information: <http://www.cottonsjourney.com/Storyofcotton/print.asp>

For information about the scientific method and project steps:

http://www.sciencebuddies.org/science-fairprojects/project_scientific_method.shtml?gclid=CJrJr_GIsECFRIS7AodBgoA1g#overviewofthescientificmethod

Books:

William's Doll by Charlotte Zolotow

Penny and Her Doll by Kevin Henkes

The Legend of the Bluebonnet by Tommie dePaulo

Elizabeth's Doll by Stephanie A. Bodeen

The Tub People by Pam Conrad

The Doll People by Ann Matthews Martin (series)

Molly's Pilgrim by Barbara Cohen

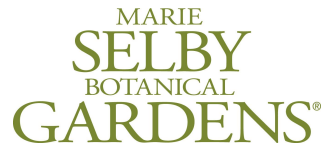
From Plants to Blue Jeans by Arthur John L'Hommedieu

Pre-Visit Activities: Grow cotton and plan dolls

- Do soil investigations and learn about what soil is made of. (For soil experiment worksheet and activity: <http://waterlandlife.org/assets/BeneathYourFeet.pdf>)
- Sprout a variety of seeds. (See seed sprouting instructions sheet.) Have each group control different variables during sprouting in order to compare optimal needs of seedlings. Use the scientific method for experiments. For information about the scientific method and project steps: http://www.sciencebuddies.org/science-fairprojects/project_scientific_method.shtml?gclid=CJrJr_GlsE_CFRIS7AodBgoA1g#overviewofthescientificmethod
- Research needs of cotton plants (air temperature and water tolerance). For questions about growing cotton: <http://www.cottonginmuseum.org/museum.htm>
- Transplant cotton and other seedlings into pots or a school garden.
- Continue to measure water (volume and temperature) as you water plants. Keep records. See example of record sheet.
- Care for cotton plants.
- While the cotton is growing, read stories about dolls. Discuss the characters Penny and William and how their experience with dolls is both different and the same.
- Read Doll People series for reading logs.
- Design dolls. Recruit a helper to sew doll shapes on plain muslin fabric, leaving an opening for student's to stuff with cotton.

During Visit Activity: Small Group Scavenger Hunts

- All together, talk about what students have learned about plant needs. Explain that students will now discover the rule-breakers among plants. Also discuss what "full sun", "partial sun" and "shade" means to plants.
- In small groups, explore the garden looking for plants that grow in soil and plants that do not grow in soil. Look for plants growing in full sun, partial sun and shade.
- In the Rainforest play area, have soil dissection activity ready. Provide tweezers and cups for sorting out large parts of soil from smaller parts. Have a variety of epiphytes for students to handle and look at under magnifying glasses.
- Share student findings from the scavenger hunts.



Back to Class Activities: Create & Share Dolls

- Harvest cotton for dolls.
- Collect trinkets and treasures for adorning dolls (donations and art closet).
- Paint student designs on fabric (with art teacher or volunteer helpers).
- Stuff dolls (depending on amount of harvest, additional stuffing may be necessary-compare fiberfill with student-grown cotton).
- Attach trinkets and treasures.
- Research places dolls could be donated (hospital, youth shelters).
- Donate dolls and have a student exhibit at Selby Gardens during which families can visit the garden and see the students' dolls.
- Give families the Five Senses Scavenger Hunt checklist to use during their visit with the garden.

Title: A Second Grade study of Plants, Weather and Soil.

Topic : weather, plants, writing

General Idea for Project:

When planting with students, they often want to press down (compact) the soil when planting. This makes it difficult to sprout the seeds. Through this project, students will learn about the importance of soil (and compaction) when growing herbs. They will also do some process writing, giving the sequence of events for accomplishing a task.

SC.2.E.6.1 Recognize that Earth is made up of rocks. Rocks come in many sizes and shapes.

SC.2.E.6.2 Describe how small pieces of rock and dead plant and animal parts can be the basis of soil and explain the process by which soil is formed

SC.2.E.6.3 Classify soil types based on color, texture (size of particles), the ability to retain water, and the ability to support the growth of plants

LAFS.2.W.3.8 Recall information from experiences or gather information from provided sources to answer a question.

LAFS.2.W.2.5 With guidance and support from adults and peers, focus on a topic and strengthen writing as needed by revising and editing.

LAFS.2.W.1.3 Write narratives in which they recount a well-elaborated event or short sequence of events, include details to describe actions, thoughts, and feelings, use temporal words to signal event order, and provide a sense of closure.

21st Century Skills:

- Students will learn how to care for plants.
- Students will write step-by-step directions for a project.
- Students will protect their skin from the Sun during outdoor activities.

Product/Community Connection:

- Visit Selby Botanical Gardens.
- Create 'how to' writing pieces that explain how to make it rain and/or how to grow herbs.

Driving Question:

How can we show the steps it takes to grow an herb?

Plan for Assessment:

- Peer and Self Assessment: Students can use this themed, easy to use rubric to show his/her progress as part of a team during growing projects.
- Writing Rubric (<http://www.surfinthroughsecond.com/2013/10/common-core-writing-rubrics.html>) - This site contains excellent rubrics for second grade writing.
- Teacher Observation (Running Record)
- Create Project Time Line including anticipated sprouting dates and harvesting dates, visit to Selby Gardens, dates and times of volunteers, as well as the celebration date. Update the Time Line as the project goes on.

Entry Event (at school)

Have students bring a soil sample from home. Keep each student's sample separate and label the samples with where the soil came from. Use these samples for soil investigating activities. Have additional samples ready for students who forget/cannot complete the assignment.

Opportunities for student voice and choice:

- Students will choose which group of herb seeds to use for planting and experimenting.
- Students will decide which 'how to' descriptive writing prompt.

Resources:

- Resource for interactive learning website for students to review or get basic information on weather and other science topics: <http://learningscience.org/esc1cchangesearthsky.htm>
- Minuteearth.com: use youtube video (short) "Why is all sand the same?"
- For soil diagram: <http://www.saburchill.com/chapters/chap0058.html>
- For soil experiment worksheet and activity: <http://waterlandlife.org/assets/BeneathYourFeet.pdf>
- For questions about quick sprouting seed activities:
<http://homeguides.sfgate.com/flower-seeds-sprout-one-week-60864.html>
- For information about the scientific method and project steps:
http://www.sciencebuddies.org/science-fairprojects/project_scientific_method.shtml?gclid=CJrJr_GlsECFRIS7AodBgoA1g#overviewofthescientificmethod
- Watch how to create a water cycle in a bag: <https://www.youtube.com/watch?v=4WQBtAJxMbY>
- [The Legend of the Bluebonnet](#) by Tommie dePaulo
- [Bringing the Rain to Kapiti Plains](#) by Verna Aardema

Pre-Visit Activities: Sprout herb seeds

- Entry Event: Invite students to bring a soil sample from home along with a Soil Sample Survey. Keep each student's sample separate and label the samples Soil Sample Survey. Use these samples for soil investigating activities. Have additional samples ready for students who forget/cannot complete the assignment.
- Explore the website "A Weather Adventure; Riding the Winds with Kalani". Play interactive games and select printables that are appropriate for your students.
- Have students share their soil samples from home. Talk about what is under our feet here in Florida. Watch "Why is all sand the same?" youtube video from minuteearth.com
- Do soil investigations and learn about what soil is made of. Use magnifying glasses and tweezers to look at the smallest particles of soil. For soil diagram:
<http://www.saburchill.com/chapters/chap0058.html>
- Use soil samples for students to explore compacting soil (use worksheet for review and general soil information). For soil experiment worksheet and activity:
<http://waterlandlife.org/assets/BeneathYourFeet.pdf>
- Sprout a variety of seeds. Have each group control compaction as a variable during sprouting in order to compare optimal needs of seedlings. Measure from the top of the soil to the top of the container. A smaller number=less compaction, larger number =more compacted. Use the scientific method for experiments. For information about the scientific method and project steps:
http://www.sciencebuddies.org/science-fairprojects/project_scientific_method.shtml?gclid=CJrJr_GIsE_CFRIS7AodBgoA1g#overviewofthescientificmethod
- Care for herbs and record growth. Use Plant Observation Record Sheet. Take pictures as the plants grow.
- Before transplanting, analyze the data from the sprouts to see which seeds sprouted fastest and which grew fastest.
- Transplant seedlings into pots or a school garden.
- Watch how to create a water cycle in a bag: <https://www.youtube.com/watch?v=4WQBtAjxMby> Tell students that when they visit Selby Gardens, they will adapt the water cycle in a bag to show a rain forest in a bag.

During Visit Activity: Small Group Scavenger Hunts

- As a class, talk about what students have learned about plant needs. Explain that students will now discover the rule-breakers among plants. Also discuss what "full sun", "partial sun" and "shade" means to plants.
- In small groups, explore the garden looking for plants that grow in soil and plants that do not grow in soil. Look for plants growing in full sun, partial sun and shade.
- Meet in the Rain Forest area.
- After students have explored the Rain Forest, they can explore the play areas. In the Rainforest play areas, supply a variety of rocks for students to sort. Use sorting labels including colors, sizes, surface, etc. Have a variety of epiphytes for students to handle and look at under magnifying glasses.
- Altogether, do the Water Cycle in a Bag. Have the students make suggestions on how to make their bags look like the Rain Forest. Do this activity either at Selby (materials needed: large plastic bag for each child, sharpies or a variety of colors for each group, water) or as a Post-visit activity (see below).

Post-Visit Activities: Revise and Celebrate.

- Invite parents to come to school to share "How To" projects.
- Share student findings from the scavenger hunts.
- Read a rain story: [The Legend of the Bluebonnet](#) by Tommie dePaulo and/or [Bringing the Rain to Kapiti Plains](#) by Verna Aardema. Compare the stories. Talk about the role of rain and its importance in each story.
- Do the water cycle in a bag and make it rain. Use large baggies and draw the layers of the Rain Forest on the bags (per student suggestions).
- Students will write 'how to' directions for the water cycle project for practice (to get ready for the big "how to" story of growing herbs).
- Harvest and taste a little bit of the herbs.
- Let herbs go to seed and harvest seeds.
- Write 'how to' directions for growing herbs. "How To" writing should include the vocabulary words: seed, sprout, leaves, flowers, herbs, and harvest.
- Use Critical Friends technique where peers look at each timeline and give one thing they like about the timeline and one suggestion for editing. Edit "How To" for final presentation.
- Attach a packet of seeds to copies of the 'how to' directions for growing herbs.
- Give seed packets away at a project celebration event.

Possible Garden Extension: Edit and publish student writing of 'how to' directions to share with Selby Gardens to use to promote the Rain Forest display.

Rule Breakers Scavenger Hunt

We learned that soil is an important part of growing plants. Some plants are rule breakers and do not need soil to grow. List plants in each column that you found in the garden. Photograph or draw a picture of each plant.

Needs Soil	Does Not Need Soil

Scavenger Hunt Checklist

Look for plant and notice the living conditions. List 2 plants for each category.

Plant Needs	
Full Sun	
Partial Sun	
Shade	

Name: _____

Soil Sample Survey



I got it from: _____.

The colors in my soil are: _____.

The particles in my soil are: small medium large.

Check off what you can see in your soil:

- € Sand
- € Rocks
- € Animal remains
- € Plant material

Plant Observation Record Sheet

Team Members: _____

Label Information _____

Date:	Compaction (in cm):	Amount of water (ml):	Stem height (cm):	Number of leaves:	Observations:

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