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Soil Sam

Grade Level: K-6

Objective: Students will have a better understanding of the growth and development of a seed and the factors that affect it.


Assessment Framework: 6.3.03; 12.4.08

Reading Suggestion: AITC’s Soil Ag Mag available at www.agintheclassroom.org

Materials Needed:
Knee High Stocking  Grass Seeds  Potting Soil  Baby Food Jar Water  Jiggle Eyes  Fabric

Directions:
1. Using knee-high hose, place some grass seeds in the toe where you want the grass to grow. The toe of the hose is the head of the Soil Sammy and the grass will look like hair when it grows.
2. Pack a handful of soil in the end of the hose on top of the seeds. Make sure the ball of soil is slightly bigger than the opening of the baby food jar.
3. Tie a knot in the hose under the ball of soil.
4. Completely wet the head of Soil Sammy. Place the top of the hose (which is the bottom of the Soil Sammy) in a baby food jar filled with water making sure the head is above the mouth of the jar. The end of the hose will absorb the water to feed the grass seeds, which will germinate through the hose. (You may have to cut a few small holes in the hose to help.)
5. Now you can decorate! Suggestions are a round piece of fabric to fit over the mouth of the jar for a shirt. You can add buttons to the shirt and jiggle eyes on the face and cut out felt for a mouth.
   Water as needed and be sure to cut the grass “hair” and style as desired.

Lesson Extender:
Try adding some of the following to your Soil Sammy’s water and make predictions on what the outcome will be. Make more than one Soil Sammy and have students chart the differences in the grass.

* Add to the Soil: Store-bought fertilizer stick, coffee grounds, baking soda, Epson salts
* Add to the Water: Store-bought liquid fertilizer, soda pop, apple juice, lemon scented liquid soap

Farmers have to be careful and not add too much fertilizer. They go to special classes and use math problems to figure out the right amount. You shouldn’t use too much fertilizer either, but you can experiment with different amounts.
Beanie Baby

Grade Levels: K-7


Assessment Framework:

Standard 11A 11.4.01; 11.4.02; 11.4.03; 11.4.04
Standard 12A 12.4.03; 12.4.04; 12.4.05

Reading Suggestions:

AITC’s Soybean Ag Mag available at www.agintheclassroom.org

Materials:

Jewelry size re-sealable bag (found in craft stores) Water
Crystal Soil Hole Punch
Measuring spoons Soybeans
Yarn

Directions:

1. Punch a hole in the top of your bag.
2. Place a scant 1/4 teaspoon of Crystal Soil into the bag.
3. Add one tablespoon of water.
5. Seal your bag firmly.
6. Insert the yarn to make a necklace.
7. Wear your Beanie Baby around your neck and under your shirt to keep it in a warm, dark place.
8. Check your Beanie Baby several times a day for germination and record the growth.
Growing Letters!

Grade Level: K-3 Science & Reading

Objective: This activity is designed to allow students to observe the germination process and what factors encourage growth and what factors can discourage growth.


Assessment Framework: Standard 1B 1.4.09; 1.4.10; 1.4.13; 1.4.14

Reading Suggestions:
AICT’s Horticulture or Specialty Crops Ag Mag available at www.agintheclassroom.org
Planting a Rainbow by Lois Ehlert  ISBN 978-0152063047
The Tiny Seed by Eric Carle  ISBN 978-0689842443
Tops and Bottoms by Janet Stevens  ISBN 978-0152928513

Materials:
Seeds  Glue  Crayons
Construction paper  Water bottle  Wax paper or cookie sheets

Directions:
1. Cut large sheets of construction paper in half (hot-dog style). One 1/2 piece of paper for each student.
2. Next, write each students’ name on the construction paper strip using the crayons. Older students can write their own name.
3. Now have each student trace over their name with glue. Elmer's white school glue will work or a glue stick.
4. Once the student has traced his or her name in glue have them shake the seeds over the glue. If you use small seeds like radishes, carrots or even grass seeds you can put them in shakers to help students place the seeds easier. Old rinsed out plastic spice jars work really well.
5. Sit to the side to let glue dry.
6. Once the glue is dried place the projects on wax paper or on cookie sheets so the seeds can be spritzed with water. Do not saturate the paper but do get the seeds damp. The seeds should be kept damp to ensure growth.
Tops and Bottoms

Grade Level: 2-4

Objective: After completing this activity, students will have a better understanding of how garden vegetables grow and what part of the vegetable they can eat.


Assessment Framework: 1.3.01; 1.3.06; 1.3.07; 1.3.13; 2.3.02; 2.3.10; 12.4.03; 12.4.04; 12.4.05

Suggested Reading Materials:

Tops and Bottoms by Janet Stevens ISBN: 978-0152928513

Illinois AITC Specialty Crops Ag Mag available at www.agintheclassroom.org

Materials:

Vegetable template from www.agintheclassroom.org 2 Paper Fasteners (brads)

Colored pencils or crayons  Hole Punch  Scissors  Glue

Two white paper plates per student

About the Book:

Tops & Bottoms, adapted and illustrated by Janet Stevens, is a story which has its origins in slave stories from the American South. In this trickster tale, a clever hare outwits the lazy bear while planting and harvesting the tops and bottoms of their vegetable garden.

Key Words:

• hare - The American form of hare is generally called rabbit.

• harvest - The gathering of a crop season. A period in which agricultural work is done and a particular type of weather prevails.

Getting Started:

Before reading the book, ask students to think of vegetables they eat. List them on a chart. Emphasize that vegetables are plants grown for food. It may also be necessary to emphasize the difference between fruits and vegetables as the list is made.

As a group, look at the cover of the book. What vegetables are pictured? What animals are pictured? Note the Caldecott Honor book Award Medal. This award is given to books that have outstanding illustrations. Encourage students to look carefully at the illustrations as the story is read.
Activity Instructions:

1. Have students color and cut out the vegetables from the vegetable template.

2. Next have students fold one plate in half and draw a line down the center of the plate. Color one half of the plate blue and the other half brown.

3. Now have students glue the vegetables on the colored plate. The blue space will serve as the sky, so anything that grows on “top” should be placed on the line “growing” into the blue, anything that grows from the “bottom” should be placed on the line “growing” into the brown side of the plate. When finished, all the vegetables should be lined up on the center line (fold) with the “tops” vegetables showing in the blue and the “bottom” vegetables showing in the brown.

4. Next write on the second paper plate the words “Tops” and “Bottoms” in their corresponding place on the plate. Now fold the plate in half and cut along the fold.

5. On the left side of the first plate (the one containing the vegetables) place a hole punch about 3 cm in on the line.

6. Lastly, place the two halves labeled “Tops” and “Bottoms” on top of each other and place a hole 3 cm in on the left side. This hole should line up with the decorated plate. Line all the holes up and place a brad to secure the plates. Now the bottom plate should have a cover. When the “Tops” is pulled up it should reveal the crops that grow on top and the same with the “Bottoms.”

Lesson Extenders!

1. **Chart:** make a chart-list of vegetables before reading *Tops & Bottoms* to discuss what vegetables were included in the story. Then recall from the story if it was the top or bottom of the vegetable plant.

2. **Story Dictation:** Complete a shared writing activity in which students suggest ideas and the teacher writes down a story based on one of the illustrations in the book.

3. **Letters to Bear and Hare’s Families:** Write a letter to the Bear and Hare families. Perhaps students could give them hints on growing vegetables or inquire about how their garden is growing.

4. **Writing About Your Garden:** Students who have grown a garden might be encouraged to write about their experiences. Students who do not have gardens could write about what their plans would be if they could start a vegetable garden.
Garden in a Glove

Objective:
Teach students about seed germination using gloves and cotton balls.


Assessment Framework: 1.3.12, 1.3.14, 12.4.03


Materials Needed:
- Clear plastic glove
- 5 cotton balls
- 5 types of seeds, 3-4 seeds of each (examples: lettuce, carrot, cucumber, tomato, broccoli)
- Pencil
- Marker
- Water

Directions:
1. Write your name on a clear plastic glove.
2. Wet five cotton balls and wring them out.
3. Place 3-4 seeds of the same type on each cotton ball (or dip the cotton balls in the seeds to pick them up). You may want to keep track of which seed is in which finger.
4. Put a cotton ball with the seeds attached into each finger of the glove. Hint: You may have to use a pencil to get the cotton ball all the way to the tips of the glove fingers.
5. Blow up the plastic glove and close it with a twist tie.
6. Tape the glove to a window, chalkboard, or wall. You may want to hang a clothes line under a chalk tray and use clothes pins to hold the gloves on.
7. The seeds will germinate in 3 to 5 days. Keep a plant diary and look at the seeds under a microscope.
8. Transplant the seeds about 1 1/2 to 2 weeks by cutting the tips of the fingers off the glove.
   Transplant the cotton ball and small plants into soil or sphagnum moss.
9. After growing to full size, plants can be made into a salad.
Apple Blossom Tree

Objective:
Apple trees bloom in the spring and ripen in the fall. Use this activity to learn more about the apple lifecycle.


Assessment Framework: Standard 12A 12.4.04; 12.4.05; 12.4.06; 12.4.08

Suggested Reading:
The Apple Pie Tree by Zoe Hall (ISBN 978-0590623827)
Hooray for Orchards by Bobbie Kalman (ISBN 978-0606157858)
A Song for Lena by Hilary Horder Hippely (ISBN 978-1442429468)

AITC’s Apple Ag Mag available at www.aginthe classroom.org

Materials Needed:
brown construction paper  white tissue paper  scissors  red marker
green construction paper  pink tissue paper  bee or bug sticker
 glue sticks  red bingo markers  brown marker

Directions:
1. Trace the two treetops onto green construction paper and cut out. Two tops are needed for each tree.
2. Trace the tree trunk onto brown construction paper and cut out.
3. Lay one treetop on the table. Glue the tree trunk to this top. Then, match up and glue on the other top.
4. Cut pink and white tissue paper into small squares.
5. On one side of the tree, glue on crumpled tissue paper to represent blossoms.
6. Add a bug or bee sticker to the blossoms. Pollination must occur in order for an apple to grow. This growth first starts in the flower. Label this side of the trunk “spring.”
7. On the other side of the tree, use the bingo marker to dab circle on the treetop. When the ink is dry, use the red marker to create stems. Label this side of the trunk “fall.”
The Berry Bucket

Strawberries are a specialty crop produced in Illinois. Information about Illinois strawberry farms available at: www.urbanext.uiuc.edu/strawberries/farms.html. Learn more about strawberry growth with this activity.

Illinois Learning Standards: 12.A.1a; 12.B.1a

Illinois Assessment Framework: 12.4.04; 12.4.06; 12.4.09

Book Suggestions:


AITC’s Specialty Crop Ag Mag available at www.agintheclassroom.org

Materials Needed:

1 Red paper cup
1 Green Pipe Cleaner
Hole Punch

Black Marker
Straw
2 or 3 Strands of Yarn
Leaf Fabric
1 Drinking Straw
Flower Fabric

Green Craft Foam or Cardstock

Directions:

1. Trace and cut out the top of the strawberry using green craft foam or card stock and punch two holes on the side.
2. Punch a hole on each side of the cup.
3. Next, attach top to cup using the green pipe cleaner. Pull the pipe cleaner through the strawberry top and hook ends through the holes in the cup.
4. Draw the seeds of the strawberry onto the cup with the black marker. On average, there are 200 seeds on a strawberry. Strawberries are the only fruit with seeds on the outside.
5. Cut the drinking straw into fourths.
6. Then, place the following items into the cup:
   • Yarn: This represents the fibrous root system, which provides the plant with nutrients and water.
   • Drinking Straw (One fourth): This represents the main stem or the crown. This is the sturdy part of the plant where strawberry growth starts.
• Leaf Fabric: Strawberry plants have leaves that grow in threes. Under the leaves is where you pick the strawberries. Strawberry plants also develop runners which help produce new plants.

• Flower: Strawberry blossoms are always white. These flowers develop into strawberries.

• Straw: It is used to cover the plants during the winter season to keep them safe from frost and warm, too.

**Fun Strawberry Stats:**

• Seventy percent of a strawberry’s roots are located in the top three inches of soil.

• Strawberries are a member of the rose family.

• Strawberries are the first fruit to ripen in the spring.

• Strawberries are grown in every state in the United States and every province of Canada.

• The flavor of strawberries is influenced by weather, the variety and stage of ripeness when harvested.
**Berry Water Colors**

You may have heard the poem “Roses are red, violets are blue, sugar is sweet, and so are you.” Roses don’t have to be red and violets can be anything but blue. You can make watercolor paint with berries you find or buy at the store. Using strawberries, blueberries, raspberries and so many more, you can make different colors, and try mixing two kinds together to make a new color! Scientists are making flowers in new colors everyday. Now it’s your turn to be the scientist and artist. Talk about different flowers that are grown in nurseries. Pick your favorites, and make a beautiful bouquet by painting them with your berry water colors.

**Illinois Learning Standards:** 12.A.2b; 26.B.1d

**Assessment Framework:** Standard 11A 11.4.01

**Reading Suggestion:** *A Fruit is a Suitcase for Seeds* by: Jean Richards ISBN 978-0-8225-5991-7

**Materials Needed:**
- Newspaper
- Apron
- Black magic marker or pen
- Watercolor art paper
- ½ cup fresh berries, or frozen ones that have been thawed for each color of paint. (softer berries work best (strawberries, blueberries, or raspberries.)
- ¼ cup of water for each type of berry
- Potato masher or fork
- Small bowl
- Small strainer
- Clean paintbrush
- Water
- One small plastic container for each type of berry used

**Directions:**
1. Cover your work area with the newspaper and put on the apron.
2. Using the magic marker or pen, draw a picture on the watercolor art paper. Set it aside to dry.
3. Put ½ cup of one type of berries into the bowl and add ¼ cup water.
4. Mash with the potato masher until everything is juicy.
5. Set the strainer across the top of the tub. Strain the juice through it and into the tub. This is the berry watercolor.
6. Repeat the water, mashing and straining steps with the other types of berries.
7. Dip the paintbrush into one of the berry colors and brush it across a part of your picture.
8. Then, rinse the paintbrush in the water and try another watercolor.
9. When you are finished painting, let your picture dry.
10. Throw away any extra water colors.
Willy Watermelon

Grade Level: K-2

Illinois State Standards: 11.B.1c; 26.B.1d

Assessment Framework: Standard 12B 12.4.08; 12.4.09 Standards 1B,1C 1.3.17; 1.3.21


Materials Needed:
Printer
Paper (I prefer construction paper or cardstock paper)
Scissors
Glue
Something to color with

Directions:
2. Color pieces, as necessary.
3. Cut out the pieces. This step may require adult assistance.
4. Glue the small half circle onto the large half circle.
5. Glue on the eyes, mouth, arms and legs.

Questions:
Ask the kids the 5 W’s about watermelons
1. Who likes watermelon?
2. What does a watermelon taste (or look) like? (children can describe the watermelon—sweet, juicy, etc)
3. Where do you like to eat watermelons? (camping, the beach, at home, etc)
4. When do you like to eat watermelons? (when it’s summer, when it’s hot, etc)
5. What does a watermelon seed need to grow?
One Watermelon Seed

In the story, Max and Josephine planted a garden. They picked fruits and vegetables and discovered everything grew in multiples of 10. In the blanks provided, write the number of seeds they planted. Then, create a graph to show how many of each fruit and vegetable they produced. Each box represents a tens unit.

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<th>Watermelon Seed</th>
<th>Pumpkin Seeds</th>
<th>Eggplants</th>
<th>Pepper Seeds</th>
<th>Tomato Plants</th>
<th>Blueberry Bushes</th>
<th>Strawberry Plants</th>
<th>Bean Seeds</th>
<th>Seed Potatoes</th>
<th>Corn Seeds</th>
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Number of Seeds Planted
**Fall Tasting Party** Grades: K-5

**Objectives:** Students will gain an increased awareness of the wide variety of fruits and vegetables available and will be able to identify them.

**Illinois State Standards:** 11.A.1e; 11.A.1f; 12.A.2a

**Assessment Framework:** Standard 11A, 12A, 12B, 12E  12.4.04; 12.4.08; 12.4.29

**Suggested Reading:**
- Taste by Sue Hurwitz  ISBN 978-0823950522

AITC’s Specialty Crop Ag Mag available at www.agintheclassroom.org

**Materials:**
- A wide variety of fruits and vegetables
- napkins/paper towels
- Dixie cups or small paper plates
- silverware and serving utensils as needed

**Directions:**
1. Teachers will prepare fresh, canned, dried, and/or frozen fruits and vegetables for students to taste and evaluate.
2. Evaluation forms should stay simple. Students will record what was tasted, whether or not they liked it, whether or not it is a fruit or a vegetable, and whether or not it should be included on the menu. The tasting area could be decorated with posters of fruits and vegetables and each item should have a name card that identifies what it is.

**Lesson Extenders:**
1. Teachers can teach the differences between fruits and vegetables, where and how they are grown, how they are eaten, which parts are eaten (leaves, seeds, roots, etc.), and why they are good for you.
2. Students can participate in an A-Z spelling bee using the names of fruits & vegetables as the words.
3. Students can play “Apple, Apple, Squash” (Duck, Duck, Goose).
4. Class can have a sing-along using songs about fruits/vegetables—i.e. “Apples and Bananas”.
5. Teacher and students can make a cookbook of their favorite fruit and vegetable recipes to take home or for the classroom library.
Growing Flowers

Grade Levels: K-3


Assessment Framework: Standard 12A 12.4.04; 12.4.05; 12.4.08, 12.4.09


Materials:
- Different colors of construction paper
- Seeds (Fruit and Vegetable)
- Scissors
- Pencil
- Ruler
- Glue

Directions:
1) Work in pairs to trace each others hands (5 times) on the one color you choose for your petals.
2) Give the students time to cut out their own hands (that were traced).
3) Have a template already made (on green construction paper) with four leafs. They can share with their partners and cut out their two leafs.
4) Give each child fruit and vegetable seeds to use for the center of their flowers. Take time to talk about each seed and where it came from.
5) Once the students have the flower put together, now have them make the stems!
6) To make the stems, the students will measure each other with a ruler. They will make their stem as long as they are long. Then you will help them finish their flowers.
7) You can display their flowers in the hallway. Before doing that, you can have the class put their flowers in order from the tallest to the shortest flower.
8) Repeat this activity towards the end of the school year to see how much their “flower” has grown!

Have the children make art pictures using several varieties of seeds.

Extended Response Ideas:
- Take time to talk about the seasons and how flowers and trees change throughout the seasons.
- Plant morning glory seeds in honor of Earth Day (April 22). Ask the children what plants give us (food, shelter, medicine, & oxygen).
- Celebrate Arbor Day (the last Friday in April).
- Make leaf rubbings of various leafs. (How are they similar and different?)
More books to read while you explore seeds!

**Oh Say Can You Seed?** ISBN 978-0-375-81095-4
(All about Flowering Plants)
By: Bonnie Worth

**The Vegetables We Eat**
By: Gail Gibbons

**One Bean** ISBN 13 978-0-8027-7572-6
By: Anne Rockwell

**How Groundhog’s Garden Grew**
ISBN 978-0-439-32371-0
By: Lynne Cherry

**Plant Secrets** ISBN 978-1-58089-205-6
By: Emily Goodman

**From Seed to Plant** ISBN-13 978-0-8234-1025-5
By: Gail Gibbons

**A Seed is Sleepy** ISBN-13 978-0-8118-5520-4
By: Dianna Hutts Aston & Sylvia Long

**Seed Soil Sun** ISBN 978-1-59078-713-7
(Earth’s Recipe for Food)
By: Cris Peterson

**Up, Down, and Around** ISBN 978-0-7636-4017-0
By: Katherine Ayres

**One Watermelon Seed** ISBN 978-1-55455-034-0
By: Celia Barker Lottridge