

TIES 2006

Teachers in Industry for Educational Support

Seeds, Seeds, Seeds!

**Developed by:
Diane Y. Farmer, Richard Allen, Downtown First Grade**

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Seeds, Seeds, Seeds!

Curriculum Unit Overview

Summary

This is a curriculum to be used by Cox Arboretum to help bring the schools in the communities and Metro Parks together. The concentration would be on the Gardens and Plants at the Arboretum, and will not be used in another tech area. This unit will be used by first graders, and will consist of a field trip to the Arboretum.

Big Picture

The Hook activity is to plan a field trip to the Cox Arboretum to spark the student's interest in nature.

Preparation for the Unit

The first step is to arrange with the school and Cox Arboretum a time and date when the field trip will take place in the fall. The next step is to gather all of the materials needed to complete the activities in the unit.

Overview

On the following page is a summary of the unit including brief summaries of each of the competencies that must be taught before students approach the culminating, or transfer, activity.

Curriculum Unit Summary

Seed, Seeds, Seeds!

Section Title Language Arts	Section Title Math	Section Title Science
ALT 1 - Brainstorming Students will use their imagination to list different types of seeds/trees on a chart.	ALT 4 – Seed Sort Students will examine seeds for similarities and differences.	ALT 7 – Start with a Seed Students will prepare a book on how plants change and grow.
ALT 2 – If I Were a Seed... Students will write about what it would be like to be a seed.	ALT 5 – Crop of Math Students will match numerals, and sets, adding.	ALT 8 – We Eat Some Seeds Students will use peanuts to make peanut butter.
ALT 3 – Pass the Words Students will use words to complete sentences.	ALT 6 – Whose Beanstalk? Students will use customary units to measure a beanstalk.	ALT 9 – Seed Collections Students will collect seed on their fall field trip to Cox Arboretum.
<p>Transfer or Culminating Activity or Project</p> <p>Students will construct a “Pool Garden” at their school to observe the growth process of a seed.</p>		

□ Section One: Language Arts

ALT 1: Brainstorming

Summary

Students will use their imagination to list different types of tree/seeds on a chart.

Competencies

Students will be able to contribute a seed type, contribute at tree type, and pair a seed to its plant.

Time

To be determined by teacher.

Materials

Chart paper
Book "Our Silly Garden" by Karen Nagel
Bag of seeds
Book "How a Seed Grows" by Helene J. Jordan
Seed match worksheet (teacher can compose one)
Glue

Instructions

1. Read our Silly Garden by Karen Nagel to get the students imagining what types of plants different seeds could become.
2. Talk with the students about seeds and how they grow into plant or trees. Have the students name different types of seeds and list them on chart paper.
3. On a new piece of chart paper, have the students list different types of trees they have seen (i.e. pine, maple, fruit, trees with needles). In a separate column have students come up with imaginary trees they would like to grow (i.e. lollipop tree, money tree etc.).

Mini Lesson: Talk to the students about how different seeds grow into various plants/trees. Pass out bags of various seeds to pairs of students. Have the students group like seeds together and match them to their names on the worksheet. The students can glue the seeds in the correct spaces. Show examples of seeds and their corresponding plants/trees using the book How a Seed Grows by Helene J. Jordan. Ask the students whether the seeds look like the grown plant. Using the chart paper with the list of seeds, have students name what each seed becomes.

Evaluation/Assessment of Student's Competency

I will check to see that each student has checked off each box on the checklist. I will look at the seed worksheet to make sure the students identified the seeds correctly. I will make a check next to the students names when they contribute to one of the charts.

Closure

Tell the students that we are going to see if we finished everything we need today. Hand out the checklist and have one on paper in the front of the class. Read off the first item and demonstrate checking off the item. Have students check off the items they completed.

- I contributed to the seed types on the chart.
- I contributed to the tree types on the chart.
- I paired a seed to its grown plant/tree.

□ Section One: Language Arts

ALT2: If I Were a Seed...

Summary

Students will write about what it would be like to be a seed.

Competencies

Students will use proper grammar, spelling and syntax.

Students will transfer written data to picture.

Students will communicate visually and orally.

Students will understand a seeds characteristics.

Time

45 minutes

Materials

Primary writing paper, pencils, markers, colored pencils,

Instructions

1. Students will be prompted to write five one sentence statements that begin “If I Were a Butterfly...”
2. After completing written statements, students will draw a picture.
3. Students will display their creative writing and drawing in the classroom.

Evaluation/Assessment of Student’s Competency

4-student writes 5 sentences and draws a picture.

3-student writes 4 sentences and draws a picture.

2-student writes 3 sentences and draws a picture.

1- student writes 1-2 sentences and draws a picture.

Closure

Students will present writing and drawings to the class.

□ Section One: Language Arts

ALT3: Pass the Words

Summary

Students will use words in complete sentences.

Competencies

Students will gain improved speaking and writing skills.

Time

30 minutes

Materials

1. Paper pumpkin seeds with pumpkin-related or fall words
2. Plastic pumpkin container
3. Chart paper
4. Construction paper to make seeds

Instructions

1. Write words on seeds and place seeds in plastic pumpkin container.
2. Hold pumpkin as you sit with students in a circle.
3. Then remove a seed, read it aloud, and have a volunteer use it in a complete sentence.
4. Next, lead the students in repeating the sentence as they pass the pumpkin, saying one word each time the pumpkin is passed. The student who has the pumpkin when the last word is said sets it on the floor, removes a seed, and reads it aloud.
5. After a volunteer uses the word in a sentence. The student repeats the sentence and pass the pumpkin as before. The activity continues in this manner until the pumpkin is empty

Evaluation/Assessment of Student's Competency

While we are playing the game I will observe to see which students are having difficulty reading the words, and using them in a sentence.

Closure

Display different fall words around the room. On each of several days, choose a word and have students help write a sentence with it on chart paper.

Section Two Math

ALT 4 : Seed Sort

Summary

Students will examine seeds for similarities and differences.

Competencies

Students will use cooperation skills, thinking skills, categorization skills, organizational skills, and grouping skills.

Time

30 minutes

Materials

1. A variety of seeds
2. Large pieces of paper
3. Markers

Instructions

1. Split the class into groups of three or four.
2. Give each group a large number of seeds, and large piece of paper. Ask the students to draw two circles on the paper.
3. Tell the students to try and organize the seeds into two distinctive groups (i.e. smooth and bumpy, long and round, fruits and vegetables, etc). No seed can be left over.
4. Have each group share their categorization technique.
5. Now draw another circle on the paper. Try organizing seeds into three distinctive groups.
6. Have each group share their categorization technique.

Evaluation/Assessment of Student's Competency

- able to organize seeds into two distinctive categories and share their categorization techniques.
- able to organize seeds into three distinctive categories and share their categorization techniques.
- unable to organize seeds into two distinctive categories
- unable to organize seeds into three distinctive categories.

Closure

Make a graph to show how many seeds each group had for the two distinctive categories and display in classroom

Section Two: Math

ALT5: Crop of Math

Summary

Students will match numerals and sets, adding.

Competencies

Students will use addition, matching, and number recognition skills.

Time

60 minutes

Materials

1. Scissors
2. Cards
3. Crayons or markers

Instructions

Make a copy of pumpkin cards([www.the mailbox companion.com](http://www.the-mailbox.companion.com)) or p. 7 Mailbox Oct/Nov 2005 edition. For a counting game, program the cards by drawing one seed on the first pumpkin, two on the second pumpkin, and so on. For an addition game, program each card with different addition combinations, ensuring that various sums are represented. Copy the cards so that there are five cards per student. After each student colors and cut out his cards, have them spread them out face up. Play as described below until one or more students turn over all his/her cards.

To play a counting game, write a number from 1-10 on the board. Have a volunteer identify the number. If a student has a card with this many seeds, he turns it over. Erase the board and write a different number to continue.

To play an addition game, announce a sum. If a student has a card with a corresponding addition he turns it over(if he has more than one matching card, he turns just one of them) announce a different sum to continue.

Evaluation/Assessment of Student's Competency

Did the students acquire and understanding of matching numerals, sets, and adding?

Were the students interested?

Did the students participate?

What comments and actions did the students use that suggest a broader understanding of the concept taught?

Closure

Have the students complete a worksheet on numerals, sets, and simple addition made up by the teacher.

□ **SectionTwo: Math**

ALT 6: Whose Beanstalk?

Summary

Students will use customary units to measure beanstalks.

Competencies

Students will be able to use measuring skills to determine height of a beanstalk.

Time

30 minutes

Materials

1. Green construction paper
2. Glue
3. Large white paper
4. Rulers

Instructions

1. In advance, prepare a class supply of narrow green construction paper strips and leaves.
2. Give each student one strip.
3. Give each student a paper programmed with a chosen type of unit as shown below.

_____ and the Beanstalk top of the paper)

My beanstalk is _____ inches tall (at the bottom of the paper).

4. Next, ask the student to write his name in the first blank.
5. Then instruct him to glue the strip to his paper and glue on construction paper leaves to resemble a beanstalk.
6. Finally, have the students draw a picture of themselves.

Evaluation/Assessment of Student's Competency

Did the students acquire an understanding of making numerals, sets and adding?

Were the students interested?

Did the students participate?

What comments and actions did the students use that suggest a broader understanding of the concepts taught?

Closure

Have the students complete a worksheet made up by the teacher on numerals, sets, and simple addition.

□ Section Three: Science

ALT 7: Start with a Seed!

Summary

Students will prepare a booklet on how plants change and grow.

Competencies

Students will use science and reading skills.

Time

60 minutes

Materials

1. Orange construction paper
2. White paper
3. Sentence strips
4. Yellow tissue paper
5. Green paint or ink pad
6. Book "Its Pumpkin Time! By Zoe Hall
7. Brown construction paper or brown crayons for soil
8. Yarn

Instructions

1. For each student prepare a pumpkin-shaped booklet with two construction paper covers and four white pages (p. 6 The Mailbox Oct/Nov 2005).
2. Read aloud Its Pumpkin Time by Zoe Hall or another book about how pumpkins grow.
3. Then give each child a copy of the sentence strips (prepared in advance). Read the sentences aloud.
4. Next, have each student complete her book. To do this, she titles it and glues a construction paper stem to back.
5. Students will cut apart sentence strips and glue each one to the bottom of the correct page.

Book Illustrations:

Page 1: Glue on a construction paper seed.

Page 2: Tape on a length of yarn (vine). Pinch a yellow tissue paper square. Glue it near the vine to resemble the blossom.

Page 3: Tape on a yarn vine. Make a thumbprint with green paint or ink.

Page 4: Glue on construction paper pumpkin.

What to put on each sentence strip:

Sentence strip number 1: Plant a pumpkin seed. Watch it grow!

Sentence strip number 2 : A yellow flower will soon show.

Sentence strip number 3: The pumpkin is like a small green ball.

Sentence strip number 4: It grows big and orange in the fall.

Evaluation/Assessment of Student's Competency

I will walk around the room checking each students booklet to make sure the book was put together correctly, and they understand the growth process of a seed.

Closure

Students will share their projects with the class, and display them in the room.

□ Section Three: Science

ALT 8: We Eat Some Seeds!

Summary

Students will use peanuts to make some peanut butter.

Competencies

Students will be able to participate in a discussion about seeds as a food source.
Students will be able to learn of the nutritional value of seeds.

Time

60 minutes

Materials

1. Books "Science for Fun with Peanuts and Popcorn by Rose Wyler
2. Peanuts
3. Vegetable Oil
4. Measuring Spoons
5. Food Processor
6. Butter knives
7. Bread
8. Jelly(optional)

Instructions

1. The teacher reads a section of the book. Then the teacher and students share their experience in eating seeds.
2. The teacher introduces the activity of making peanut butter to small groups. She ask the students to recall the ingredients that are needed. Students are then assigned different task for making peanut butter. Some will shell peanuts and remove the skin, others will gather the supplies needed, and so on.
3. The teacher will ask the students to review the process of making peanut butter. For each cup of peanuts, students will measure on teaspoonful of vegetable oil and add it before placing ingredients in food processor.
4. After the peanut butter is made, students make their own sandwiches to enjoy.

Evaluation/Assessment of Student's Competency

Did the students enjoy the activity?

Were they able to follow directions for making peanut butter?

Did they work cooperatively?

Were they able to recall the ingredients used to make peanut butter, and the process?

Closure

We will sing the Peanut Butter and Jelly Song!

□ Section Three: Science

ALT 9: Seed Collections

Summary

Students will collect seeds on their field trip to Cox Arboretum.

Competencies

Students will collect data, classify, communicate, and use observation skills.

Time

2 hours

Materials

1. Shopping bags
2. Large paper
3. Markers for graphing

Instructions

The students will take a nature walk in the fall to collect seeds. Give each student a shopping bag, and have the students collect as many different seeds as they can find. Have the children work in small groups to compare the types of seeds they found for similarities and differences. Combine all of the seeds in each group, and ask the students to group the seeds from each type of plant together. Let each pick a seed to describe.

Evaluation/Assessment of Student's Competency

Were the students able to find and collect seeds?

Did the students work cooperatively in small groups?

Were the students able to describe the similarities and the differences?

Were the students able to group the seeds with the plant?

Closure

1. The students will count and graph the number of seeds they found for six or seven types of seeds.

Transfer, or Culminating, Activity

Plants in a Pool

Summary

Students will take the information we learned in this unit to construct a garden of their own.

Competencies

Students will use observation skills to watch seeds grow.

Time

30 minutes

Materials

1. Small plastic wading pool
2. Topsoil
3. Plastic Gardening tools
4. Watering cans
5. Seeds

Instructions

1. Make several holes in the bottom of the pool for drainage.
2. Let the students put the topsoil in the pool.
3. Give each students some seeds to plant deep in the soil. (about 2 inches deep).

Evaluation/Assessment of Students Competency

Let the students have fun!

Closure

Have the students tend the garden with plastic gardening tools and watering cans.

Extension

As the seeds begin to grow record observations.