

Beginning Botanist

Integration Cards, or *iCards*, may be used as enrichment activities by the teacher, teacher's aide or volunteer, in any sequence, to integrate Language & Literacy, Math and Creative Arts into the science content presented in this unit.

Language & Literacy

- L1. Fingerplay
- L2. Sing Along Song
- L3. Picture Walk
- L4. Read Aloud

Math

- M1. Arranging Seeds
- M2. Sorting Leaves
- M3. Colorful Leaves
- M4. Seed Story

Creative Arts

- C1. Seed Collage
- C2. Paint a Plant
- C3. Plant Art
- C4. The Shape of Leaves

Fingerplay

Guidelines

1. Children should be standing, use a large open space for body movements.
2. Introduce the fingerplay words and hand motions one line at a time. Tell the children: **Say it after me.**
3. Use rhythm and hand motions to engage the children.
4. As the children recite the fingerplay chant, ask them to use soft voices, then loud voices.

Five Little Flowers

Five little flowers,
Standing in the sun.
See their heads nodding,
One by one.

(Hold up five fingers.)

(Bend fingers one by one.)

The rain starts falling,
Pretty gentle rain.

(Raise arm, wiggle fingers as you lower arm.)

Five little flowers,
Lift their heads again!

(Hold up five fingers.)



Sing Along Song

Guidelines

1. Introduce the song and motions one line at a time. Tell the children: **Sing after me. Do what I do.**
2. When children know the words, sing the song together.

The Farmer Plants

Sung to the tune of "The Farmer in the Dell"

The farmer plants the seeds,
The farmer plants the seeds,
Hi-ho, the derry-o,
The farmer plants the seeds.

(Pretend to plant seeds with fingers.)

The rain begins to fall,
The rain begins to fall,
Hi-ho, the derry-o,
The rain begins to fall.

(Drop fingers down to show the rain.)

Additional verses:

The sun begins to shine, etc.
The plants begin to grow, etc.
The flowers open up, etc.

*(Open palms to show the sunshine.)
(Raise hands to show plants growing.)
(Spread fingers to show flowers opening.)*



Picture Walk

Guidelines

1. Choose a book.

Select a book from the *Beginning Botanist Picture Walk Books* list. If these books are not available, find another content-related book filled with rich, detailed pictures.

2. Get to know the book.

Read the story to yourself before sharing the book with the children. Notice how the illustrations tell the story.

3. Enjoy reading time!

Make sure everyone is comfortable and able to see the book. If needed, establish rules for good behavior.

Taking a picture walk through a book is one of the earliest stages of reading. It enables children to “read” books by looking at the pictures. Ideal Picture Walk books have rich illustrations. When a book has too much text to hold children’s attention, use it to show just the pictures. Wordless books are also a great choice for Picture Walks.

1. Before conducting the picture walk:

Let the children know you are going to read this book by looking at the pictures.

- Show the cover of the book.
- Read the title, the author’s name, and the illustrator’s name.
- Ask children to predict what they think the story will be about based on the cover and the title.

2. While conducting the picture walk:

- Slowly go through the book, page by page.
- Ask a few questions about each picture. For example:

When did that happen?

What do you think will happen next?

Why do they want to do that?

Where is this part of the story taking place?

Where do you think they are going?

3. Share the book again and again.

When children like a book, they want to “read” it over and over.

4. Leave the book in the science or book area for the children to enjoy.

Language and Literacy iCard

Picture Walk Books

Lesson 1: Traveling Seeds

A Seed Is Sleepy by Dianna Hutts Aston

Many facts about seeds and plants are shown in this colorful book.

Lesson 2: My Little Sprout

The Carrot Seed by Ruth Krauss

A little boy plants a carrot seed, cares for it, and waits for it to grow.

Lesson 3: Roots and Stems Together

Plant Plumbing: A Book about Roots and Stems by Susan Blackaby

This book shows the importance of plant roots and stems in pictures, examining how they help plants grow and obtain the nutrients they need.

Lesson 4: Be Leaf It!

Leaves! Leaves! Leaves! by Nancy Elizabeth Wallace

Each season, Buddy Bear and his mother go on a “leaf walk.” They collect leaves, examine them, and observe their changes throughout the seasons.

Read Aloud**Guidelines****1. Choose a book.**

Select a book from the *Beginning Botanist Read Aloud Books* list. If these books are not available, find another content-related book.

2. Get to know the book.

- Read the story to yourself before reading the book to your class.
- Plan ways to change your voice to fit the plot and characters.
- Gather props.

3. Enjoy reading time!

Make sure everyone is comfortable and able to see the book. If needed, establish rules for good behavior.

When children are read to, they are likely to grow into good readers. As they listen to stories, children hear rich vocabulary and proper language structure, and learn new information about the world. Being read to can enhance imagination, creativity, and curiosity. When selecting a book for a Read Aloud, consider the amount of text and the children's attention span.

1. Before reading the story:

- Show the cover of the book.
- Read the title, the author's name, and the illustrator's name.

2. While reading the story the first time:

- Focus on the flow of the story.
- Read with expression, change your voice for different characters.
- Vary the reading speed: fast for exciting parts, slow for scary or quiet parts.

3. After reading the story:

- Ask a few questions about the book. For example:

Who would you like to be in the story?

When did the story get exciting/scary?

What would you have done?

Why did they do that?

Where did the story happen?

How would you change the ending?

- Have the children re-tell the story or act out their favorite part.

4. For additional readings:

- Invite children to ask questions or discuss the story.
- Encourage children to say words they remember from the story as you read them.
- Assist children in recognizing the sounds that make up words.

5. Leave the book in the science or book area for the children to enjoy.

Read Aloud Books

Lesson 1: Traveling Seeds

The Tiny Seed by Eric Carle

This story is about the life cycle of a seed, from being blown by the wind, to growing into a giant flower. When autumn returns, the flower sends its own seeds into the wind to start the process again.

Lesson 2: My Little Sprout

ECHOS Book: *A Garden for Iggy* by Ava Goldman

Pia and Pepe discover a family of iguanas in their neighborhood and bring them food. Then they plant a garden of lima beans for the iguanas.

Lesson 3: Roots and Stems Together

Tops and Bottoms by J. Stevens

Lazy Bear sleeps through every planting season, so conniving Hare makes a deal. He and his family will work Bear's land and split the crops in half. He'll even let Bear choose which half he wants from each vegetable, the tops or the bottoms.

Lesson 4: Be Leaf It!

Red Leaf, Yellow Leaf by Lois Ehlert

In this colorful, award-winning book, a child describes the growth of a maple tree from seed to sapling.

Arranging Seeds

Materials

For each child:

- plastic cup
- five seeds of various sizes
- 8½" x 11" sheet of paper

Preparation

1. Place five seeds in each cup.
2. Put the cups on a table.
3. Cut paper into 1" strips (one per child).

Children order seeds by size.

Procedure

1. **Today we are going to arrange seeds by size.**
2. Give each child a bowl of seeds and a strip of paper.
3. Model the activity. **Observe how I arrange these seeds along this strip of paper.**
Arrange the seeds first from smallest to largest; then arrange from largest to smallest.
4. **Now it's your turn to arrange the seeds any way you want. You may arrange the seeds from heavy to light, short to long, light to dark, or any way you want.**
5. Have children tell you how they arranged their seeds.



Sorting Leaves

Materials

For each child:

- real or artificial leaves of assorted colors, about eight to ten leaves

Preparation

Scatter leaves on a table.

Children sort leaves of different sizes.

Procedure

1. **Today we are going to sort leaves by size.**
2. Direct children to arrange by size:
 - Large leaves in the first pile.
 - Medium-sized leaves in the second pile.
 - Small leaves in the third pile.
3. Have the children count the leaves in each pile. Prompt as needed.
4. Ask: **How many leaves are in each pile?**
5. Ask the children:
 - **Which pile has the most leaves?**
 - **Which pile has the least leaves?**



Colorful Leaves

Materials

- sheet of 8½" x 11" white paper for the group
- permanent marker
- green, yellow, brown, red, and orange crayons
- assortment of real or artificial green, yellow, brown, red, and orange leaves, or color and cut out the leaves from the *Leaf Lotto Board*

Preparation

1. Use the pen and crayons to make a graph on the white paper with three columns. Choose three colors to use for sorting.
2. Scatter the leaves on the table.

Children learn to classify leaves by color.

Procedure

1. **Today we are going to graph leaves by color.**
2. Ask the children to place the leaves in the correct color column. Help as needed.
3. If time permits, have the children do this again by placing leaves of other colors at the top of each column, or replace colors with shapes and sort by leaf shape.



Seed Story

Materials

- *Seed Story Cards* page
- scissors
- assortment of crayons or markers

For each child:

- set of *Seed Story Cards*
- 8 ½" x 11" sheet of white construction paper
- glue stick

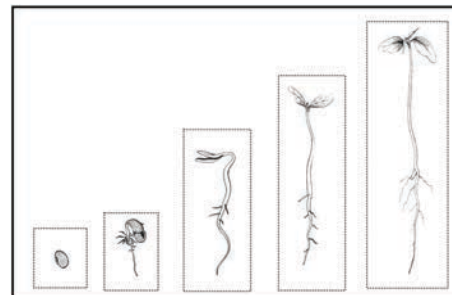
Preparation

1. Make copies of the *Seed Story Cards* page.
2. Cut one set of cards for each child. Each set should include 5 stages of plant growth.

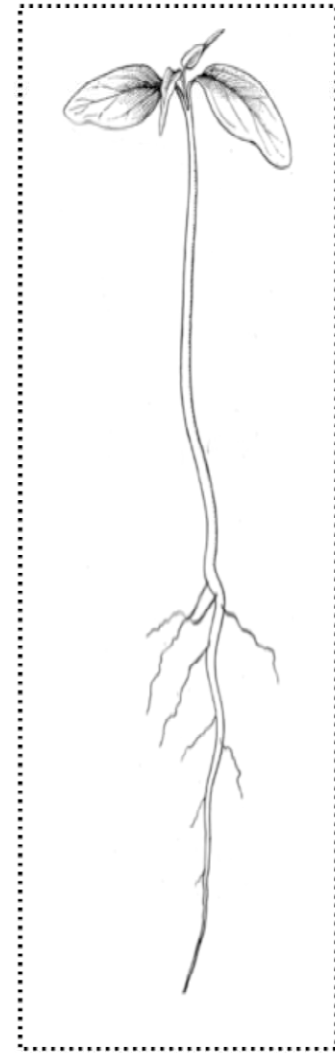
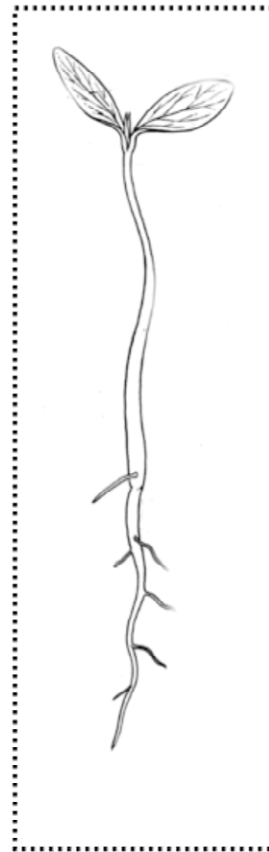
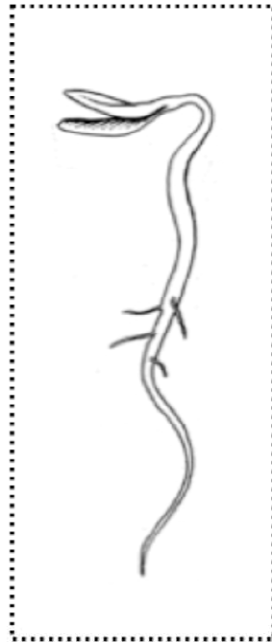
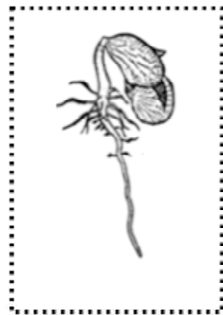
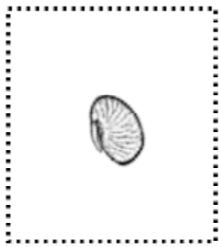
Children draw a story about how a seed grows into a plant.

Procedure

1. **Today we are going to use pictures to tell a story about how a seed grows into a plant.**
2. Ask the children: **What happens to seeds when they are planted in the ground?**
3. Review these stages of plant growth:
 - First, a seed is planted.
 - Second, roots grow.
 - Third, sprouts grow.
 - Fourth, stems grow.
 - Fifth, leaves grow.
4. Give each child a sheet of white construction paper and a set of cut out *Seed Story Cards*. Ask them to assemble the puzzle according to the plant stages. Observe the children and guide them if needed.
5. After children have assembled the *Seed Story Cards* in order, give each child a glue stick. **Now glue your cards to the sheet of paper.** Observe the children and guide them as needed.
6. Allow the children to use crayons or markers to color the *Seed Story*.



Seed Story Cards



Creative Arts iCard

Seed Collage

Materials

- white glue
- small bowls
- bird seed or an assortment of seeds
- paper towels
- newspaper

For each child:

- 9" x 12" sheet of white construction paper
- narrow paint brush
- 8 oz. plastic cup

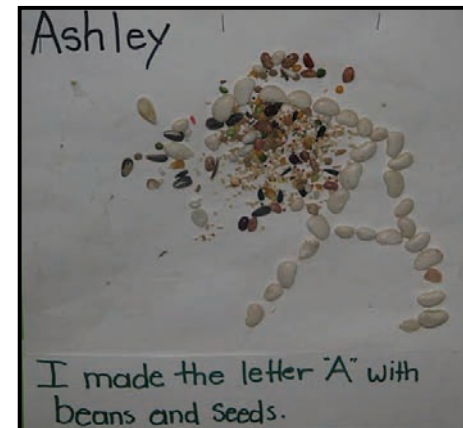
Preparation

1. Cover the table with newspaper.
2. Fill small bowls with white glue.
3. Fill each plastic cup with an assortment of bird seed.
4. Place all materials on a table.

Children create a seed collage using seeds of different shapes and sizes.

Procedure

1. **Today we are going to use seeds to make a picture.**
2. Give each child a cup of bird seed, a paint brush and a piece of paper.
3. Set the bowls of glue out on the table for the children to share.
4. Encourage children to use the seeds to design the first letter of their name, a favorite shape or other creative design.
5. Encourage the children to give their seed collage a title. Write the title for them on their paper.



Creative Arts iCard

Paint a Plant

Materials

- real potted flowering plant

For each child:

- sheet of 9" x 12" white construction paper
- crayons, markers, pencils, or colored pencils
- watercolor paint tray or small bowls of assorted watercolors, one paintbrush and a cup of water
- small cups with tempera paint of different colors, one paintbrush, and one cup of water

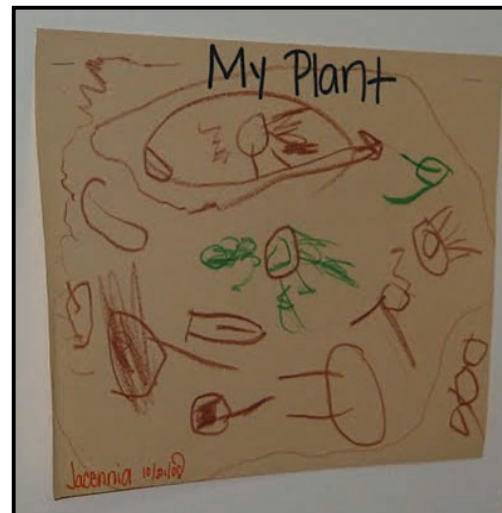
Preparation

1. Choose art materials that are accessible and age-appropriate for the children in the group.
2. Place all the materials on a table.

Children draw/paint plants using a variety of art materials.

Procedure

1. Say: **Today we are going to paint a picture of a plant.**
2. Set the plant in the center of the table. Remove from pot and brush soil away from the roots. Observe the plant closely as a group. Ask the children:
 - **What are the parts of a plant?** Prompt the children to say: *roots, stems, leaves, or flowers.*
 - **What colors do you see?**
3. Give each child a set of art materials.
4. Encourage children to paint the parts of the plant.



Plant Art**Materials**

- *Plant Art Template* page
- scissors
- assortment of crayons or markers (choose colors that resemble plant colors)
- white glue
- small bowls

For each child:

- set of plant parts
- sheet of 9" x 12" construction paper
- narrow paint brush
- green pipe cleaner cut in half
- black pipe cleaner cut in 3 equal lengths

Preparation

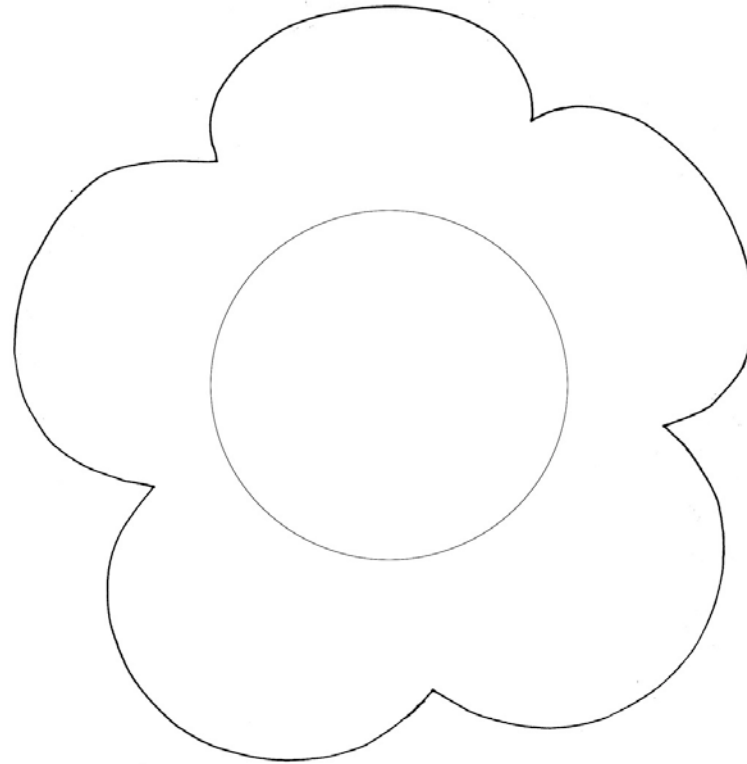
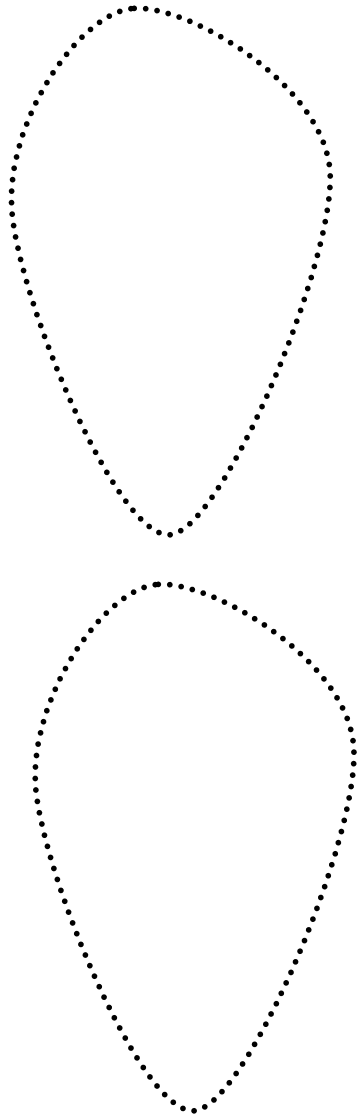
1. Make copies of the *Plant Art Template* page. Cut one set of plant parts (flower and leaves) for each child.
2. Fill small bowls with white glue.
3. Place all materials on a table.

Children show the parts of a plant using art and craft materials.

Procedure

1. Say: **Today we are going to make a plant using some craft materials.**
2. Give each child a sheet of white construction paper and a set of cut outs from the *Plant Art Template* page. **It's your job to complete the plant using these materials.**
3. **First, arrange the materials/cards on the sheet of paper. Think about what part of the plant grows underground.** Observe the children and guide as needed. **We will use the black cut pipe cleaners as roots.**
4. **Next, think about what part of the plant grows from the roots.** Place the green pipe cleaner above the roots. Observe the children and guide as needed.
5. **Now, find your leaves. How many do you have? Yes, two. Place them on the piece of paper branching off of the stem.** Observe the children and guide as needed.
6. **Finally, what grows from the stem at the top of a plant? Yes, a flower.**
7. **Now glue your plant parts to the sheet of paper.** Observe the children and guide as needed.
8. Allow the children to use crayons or markers to color the flower and leaves.

Plant Art Template



The Shape of Leaves

Materials

- assortment of crayon pieces with no wrappers
- tape

For each child:

- 8½" x 11" sheet of white copy paper
- 3–5 leaves of different shapes

Preparation

Place all the materials on a table.

Children make leaf rubbings using a variety of leaves.

Procedure

1. **Today we are going to make leaf rubbings.**
2. Place an assortment of leaves in the center of the table. Let each child select 3–5 leaves.
3. Tape each child's leaves to the table in front of their seat.
4. Give each child a sheet of paper and one crayon. Direct them to place the paper over the leaves.
5. Guide them to turn the crayon on its side and gently rub over the top of their paper. Children may choose new crayon colors for each leaf.

