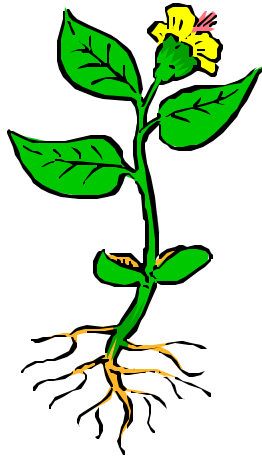


# SEEDS OF LEARNING



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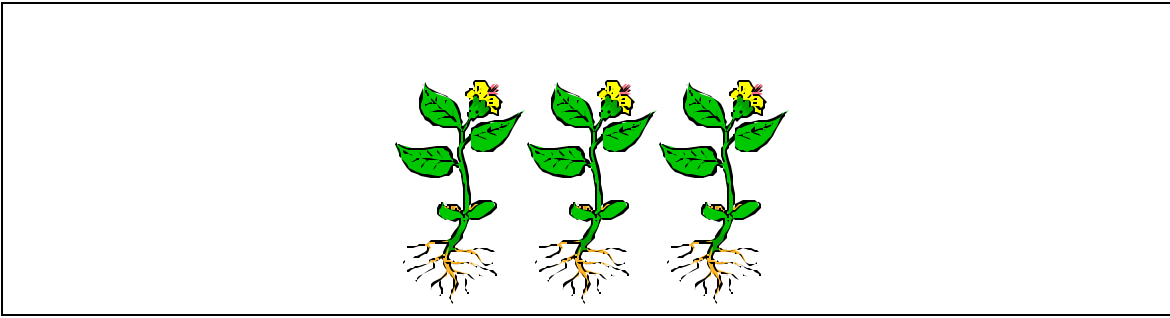
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## **Program Outline**

### **Major Goals:**

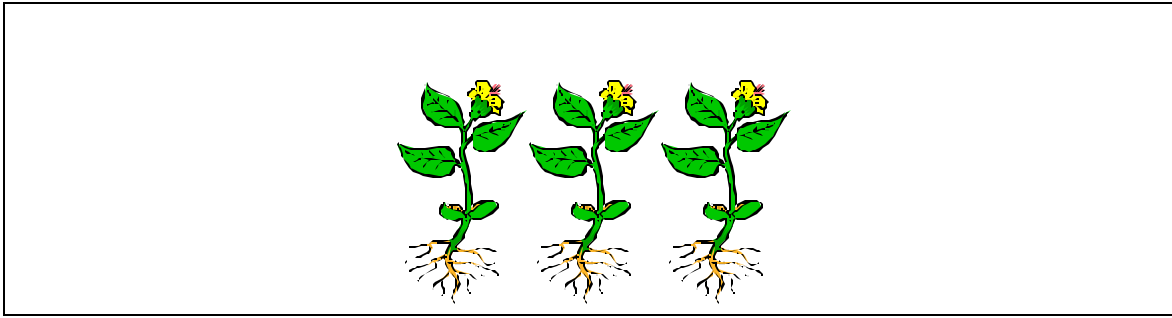
This program is part of an ongoing science unit that begins in the fall. The students first learn about the different seasons, followed by a focus on the changes that occur in the fall, including the topic of trees and the functions of their parts. Students will also identify and classify leaves and be introduced to the forest habitat and the understanding of the uses of trees as homes and as products. During the winter, we examine that season's effect on plant and animal life. In early spring, the water cycle is studied, which leads into this program: **Seeds For Learning**.

### **Students**

Twenty-three second grade students participated in **Seeds of Learning**. It is appropriate for mixed-ability students and can be easily adapted to their needs. The class works individually and in cooperative groups. They learn from one another as well as on their own. Full group discussions are also held daily.

### **Timeline**

The entire unit continues throughout the school year. Each section can take two or three weeks. You can pick the parts you wish to use and lengthen those in which the students show particular interest. This unit provides the teachers with the flexibility to adjust and meet the interests and needs of their students.



## **LESSON PLANS:**

The lesson plans are provided in a timeline fashion from fall through spring. Suggestions for extending the lessons are offered at the end. Most lessons can be completed in one 45-minute period including cleanup time. The lessons on observing and logging plant growth can be done during center time, rather than as a full-class lesson. These lessons offer many opportunities for art and writing activities.

## **LESSON I:**

**Aim:** The children will identify the characteristics of the four seasons.

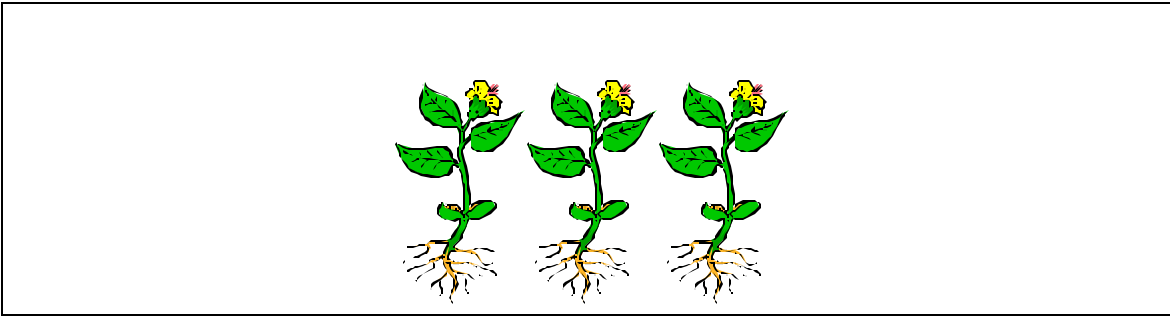
**Material:** Book: Changing Seasons by Rose Greydanus, chart paper, markers, lined paper, drawing paper, and crayons

**Procedure:**

1. Read aloud the book Changing Seasons.
2. Discuss the characteristics of each of the four seasons.
3. Divide chart paper into four parts and list children's responses about each season.
4. Review their findings together.
5. Have children choose their favorite season and write about it.
6. The children draw a picture of their favorite season.

**Evaluation:** Have children share what they wrote.

**Follow-up:** Use magazine pictures and play a game where the children try to identify the season from the picture.



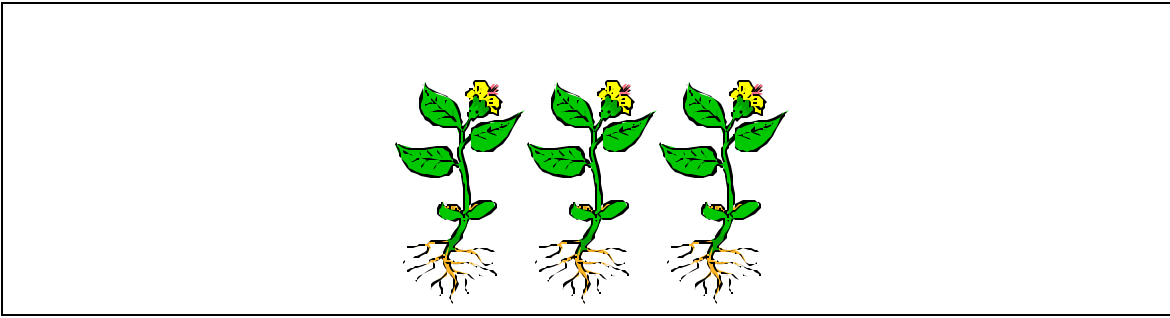
## LESSON PLAN II:

Aim: The children will learn about what people, animals, and nature do in the fall, and create fall list poems.

Materials: Book: Silly Sidney by Morgan Matthews, framework for list poem, chart paper, and leaf shapes

Procedure:

1. Read aloud the book Silly Sidney.
2. Discuss and list on chart paper what occurs in the fall.
3. Introduce the framework for list poem.
4. Have the children write their own list poems.
5. Conference with children and have them rewrite their poems on leaf-shaped paper.
6. Have them lightly color leaves for display.



### **LESSON PLAN III:**

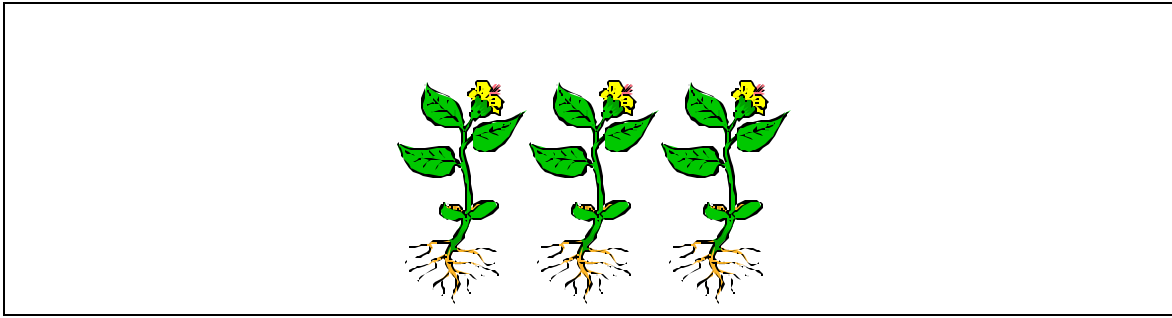
Aim: The children will learn about the forest habitat.

Materials: Book: Web of Life by Melvin Berger, chart paper, construction paper, scissors, and glue

Procedure:

1. Read aloud the book Web of Life.
2. Discuss the forest habitat.
3. List children's responses about the characteristics of forest life.
4. Have children create their own forest pictures using magazine pictures.
5. Have children write about a few facts about their pictures.

Follow-up: Have children list the animals that use trees as homes.



## LESSON PLAN IV:

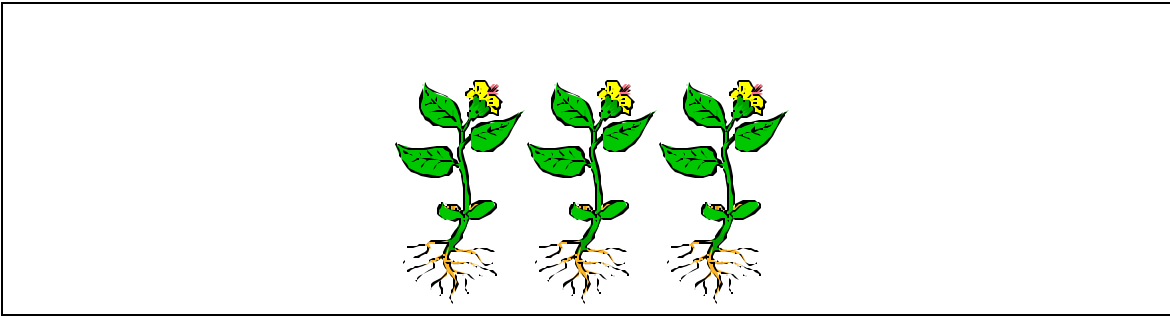
Aim: The children will learn about trees and their parts.

Materials: Book: Now I Know Trees by Sharon Gordon, chart paper, worksheet, and crayons

Procedure:

1. Read aloud the book Now I Know Trees.
2. On chart paper, draw the parts of a tree from the roots to the leaves as the children tell the names of each part.
3. Label the parts of the tree.
4. Discuss the functions of each part.
5. Have children complete the worksheet on parts of a tree.

Follow-up: Discuss the difference between evergreen (coniferous) and deciduous trees (leaves change color). Use a Venn diagram to compare the two types of trees.



## LESSON PLAN V:

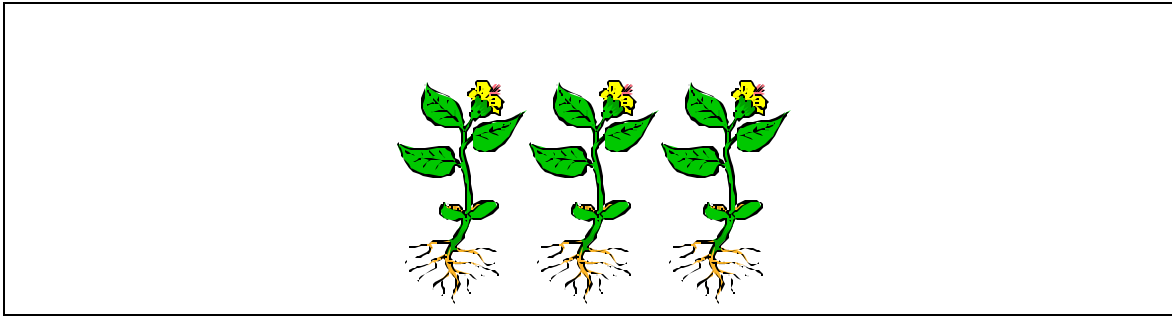
Aim: The children will learn why some leaves change color.

Materials: Book: Why Do Leaves Change Color?, oak tag paper, squares of tissue paper in fall colors and glue

Procedure:

1. Read aloud the book Why Do Leaves Change Color?
2. Discuss how the leaf is the “food factory” and how this process affects the leaf color.
3. Introduce the word “chlorophyll” and its meaning.
4. Explain that leaves are really different colors but appear green due to chlorophyll.
5. Distribute oak tag and have children draw a large, bare tree with branches.
6. Have children make small balls with tissue paper and then glue them onto the branches as leaves.





## LESSON PLAN VI:

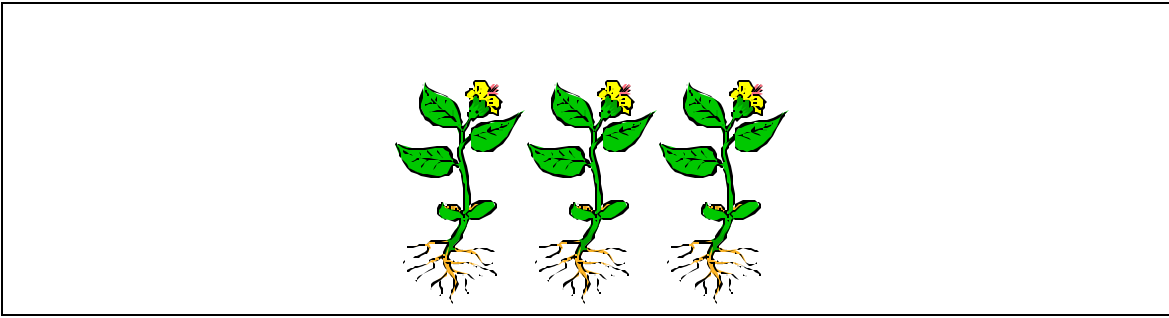
Aim: The children learn to identify leaves by their shape, size, and color.

Materials: Book: Red Leaf, Yellow Leaf by Lois Ehlert, various leaves brought in by children, worksheet, leaf picture chart

Procedure:

1. Read aloud the book Red Leaf, Yellow Leaf.
2. Discuss how leaves come in different shapes and sizes.
3. Have children examine the leaves they collected and sort by shape and size.
4. Using leaf chart and classroom library to identify the types of leaves they have collected.
5. Have children record information on worksheet.
6. Have children share their results with the class.

Follow-up: The children can use their leaves to create a picture of an animal in its habitat.



## LESSON VII:

Aim: The children will learn about the water cycle.

Materials: Book: Follow A Raindrop by Elsie Ward, electric burner, ice cubes, small saucepan, aluminum pie pan, drawing paper, crayons, and chart paper

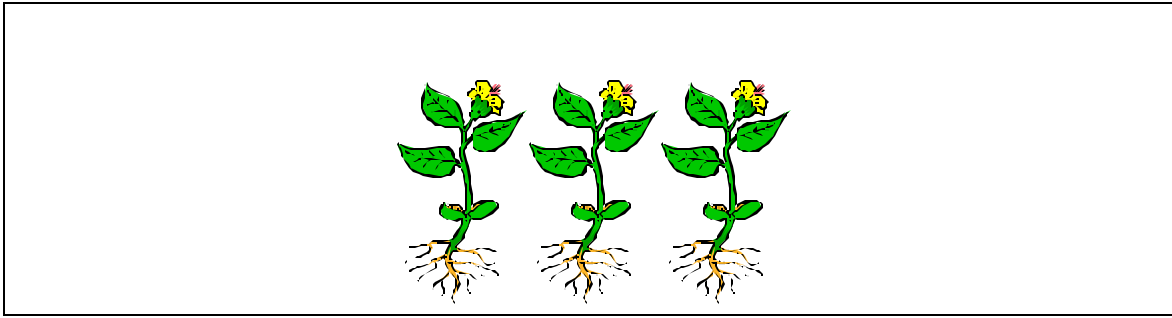
Procedure:

1. Read aloud the book Follow A Raindrop.
2. Discuss the water cycle – evaporation, condensation, and precipitation.
3. Draw a diagram on chart paper using arrows to show direction and label each stage.
4. Have children make their own diagram and label the stages.
5. Have children write out the stages in order.

Follow-up:

Using the electric burner set up water cycle experiment as follows:

1. Fill saucepan with water.
2. Place on burner.
3. When steam rises, hold pie pan with ice cubes in it over the steam.
4. Allow the steam to gather on the bottom of the pie pan.
5. After a while, drops of water will form and drop down into saucepan.
6. Explain that this is the water cycle.
7. Discuss which part of the experiment is a particular stage of the water cycle.



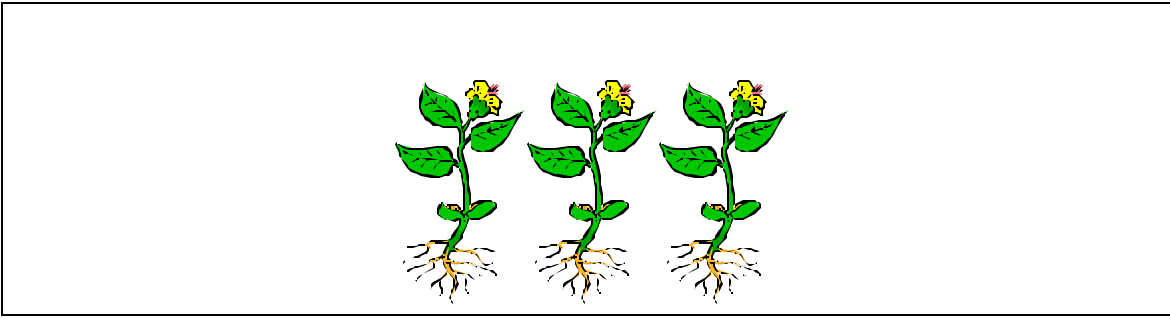
## LESSON PLAN VIII:

Aim: The children will learn about what living things need to survive.

Materials: Poem: “In Time of Silver Rain” by Langston Hughes,  
3 Baggies, 3 lima beans, labels, paper towels

Procedure:

1. Read aloud the poem “In Time of Silver Rain.”
2. Discuss and chart ideas about what living things need.
3. Set up lima bean experiment by wrapping each lima bean in a paper towel and placing it in a baggie.
  - One bag gets water but is placed in a dark closet.
  - One bag gets light but no water.
  - One bag gets light and water.
4. Label each bag.
5. Observe and record daily.
6. Meet and discuss observations and compare to chart on what living things need to survive.



## LESSON PLAN IX:

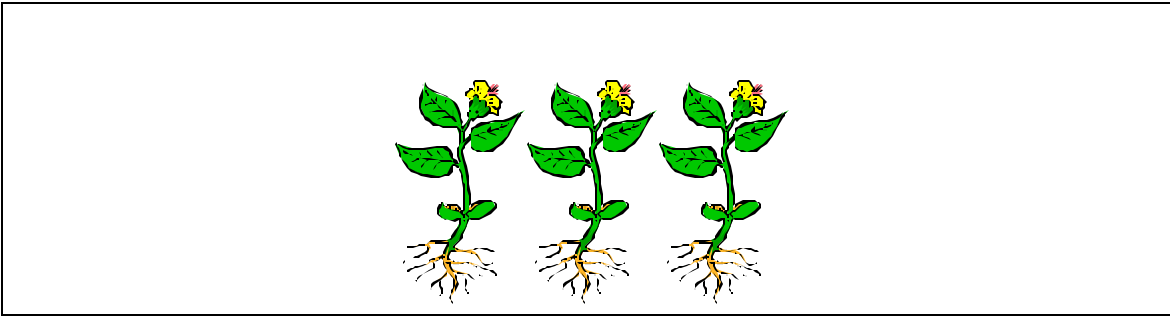
Aim: The children will learn the parts of a plant and their roles.

Materials: Book: The Tiny Seed by Eric Carle, chart paper, worksheet, drawing paper and crayons

Procedure:

1. Read aloud the book The Tiny Seed.
2. Discuss and chart the parts of a plant.
3. Discuss the roles of the parts.
4. Have children label the parts and their jobs on their worksheet.

Follow-up: The children will make flipbooks to show the parts of a plant.



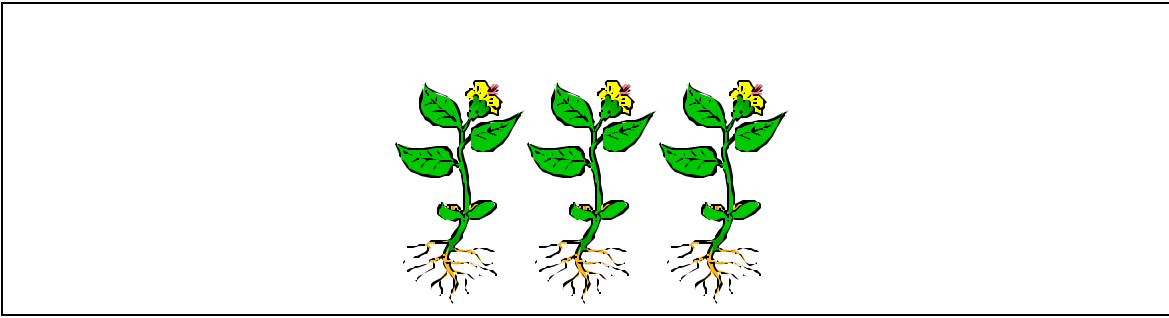
## LESSON PLAN X:

**Aim:** The children will examine seeds and classify them by size, color, and shape.

**Materials:** Book: A Seed Is A Promise by Claire Merrill, vegetable seeds, plastic bowls, chart paper, and worksheet

**Procedure:**

1. Read aloud the book A Seed Is A Promise.
2. Introduce vegetable seeds (carrot, tomato, radish, corn, pepper).
3. In small groups, children examine the different seeds and write their observations about the shape, size, and color on their worksheet (seeds should be in bowls and labeled).
4. After groups finish, gather together and share ideas. Write on chart paper.



## **LESSON PLAN XI:**

Aim: The children will plant their own vegetable seeds.

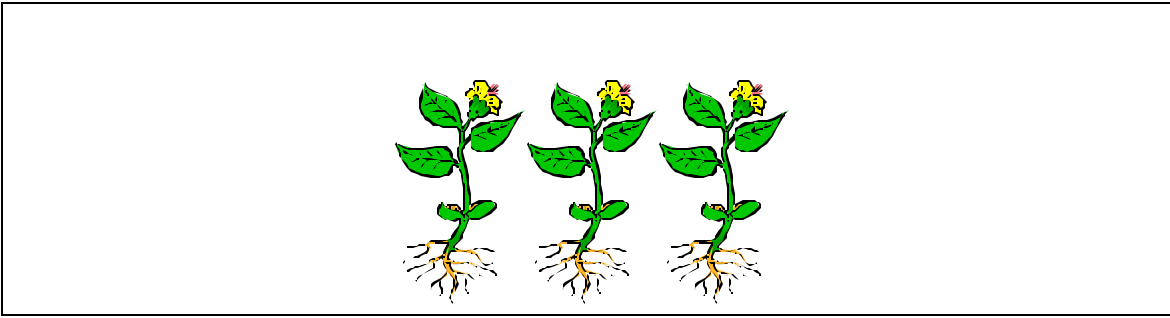
Materials: plastic cups, soil, seeds, water bottles, and plant logs

Procedure:

1. At work stations, have children fill their cups with soil.
2. Allow children to decide which type of seed to plant.
3. Have children place seeds in soil and cover with soil.
4. Sprinkle with water.
5. Place in a well-lit spot in the classroom.
6. Distribute plant logs and explain directions on how to record daily observations. This will continue for about two weeks.

Follow-up:

- Plant log is a daily activity.
- Write procedure for planting as a “How To....” book.



## MINI-LESSONS:

Aim: The children learn how seeds travel.

Materials: Book: Seeds Get Around by Nancy White, chart paper

Procedure:

1. Read aloud the book Seeds Get Around.
2. Discuss the different ways seeds travel.
3. Chart responses.

Aim: The children learn to use a ruler for growth measurement.

Materials: rulers

Procedure:

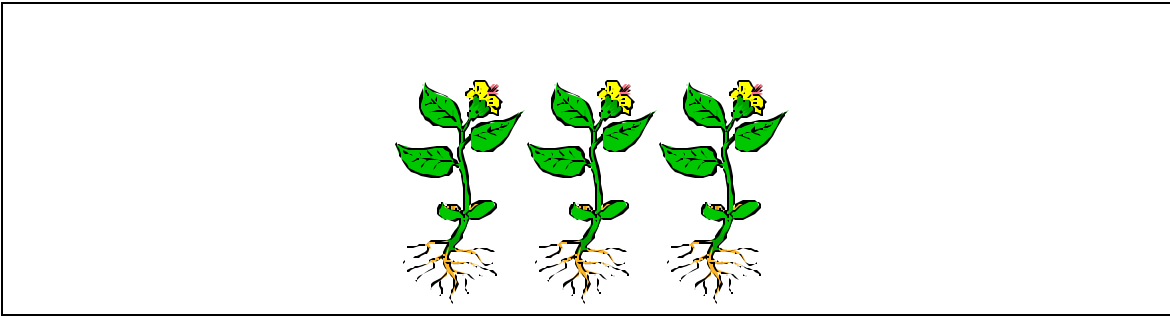
1. Demonstrate how to place ruler on top of soil to measure plant growth.
2. Explain how to write measurement figure using inches symbol.

Aim: The children learn which parts of plants we eat.

Materials: Book: Tops and Bottoms by Janet Stevens, drawing paper

Procedure:

1. Read aloud the book Tops and Bottoms.
2. Discuss roots, stems, leaves, and flowers as parts we eat.
3. Chart responses.
4. Divide paper into four sections and cut out pictures from magazines to represent roots, stems, leaves, and flowers we eat.

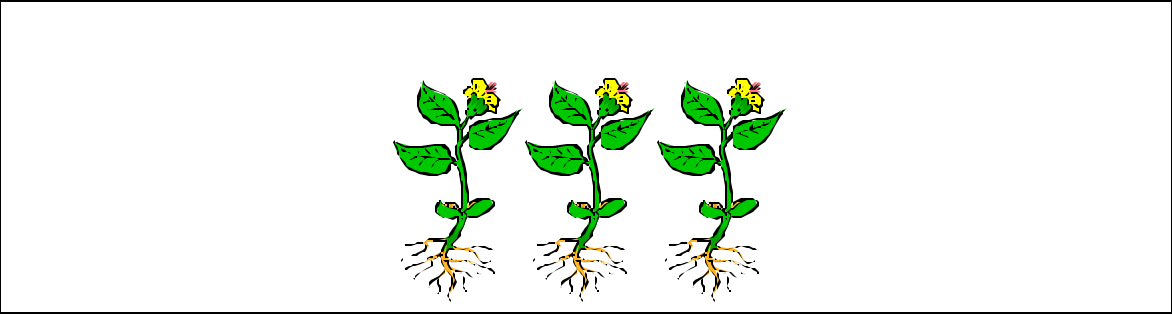


## **MINI LESSONS:**

The following topics are meant as mini-lessons:

- Predict the growth rate of the different vegetable seeds.
- Explain the use of a magnifying glass for looking at seeds, leaves, and other plant parts.
- Perform experiment with celery placed in water with food coloring. This shows how a stem is like a straw.
- The Johnny Appleseed book can be read. Then the stages of an apple tree can be traced.
- Apple tasting and charting of differences between the kinds of apples.





NAME

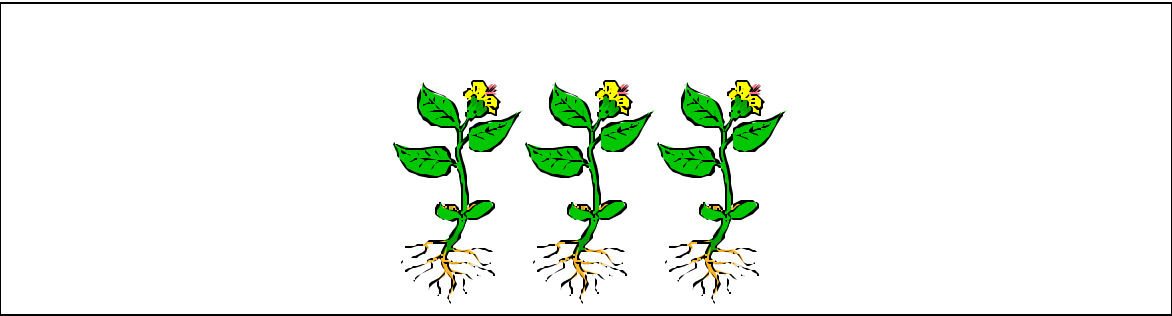
DATE

PARTS OF A TREE



Label parts:

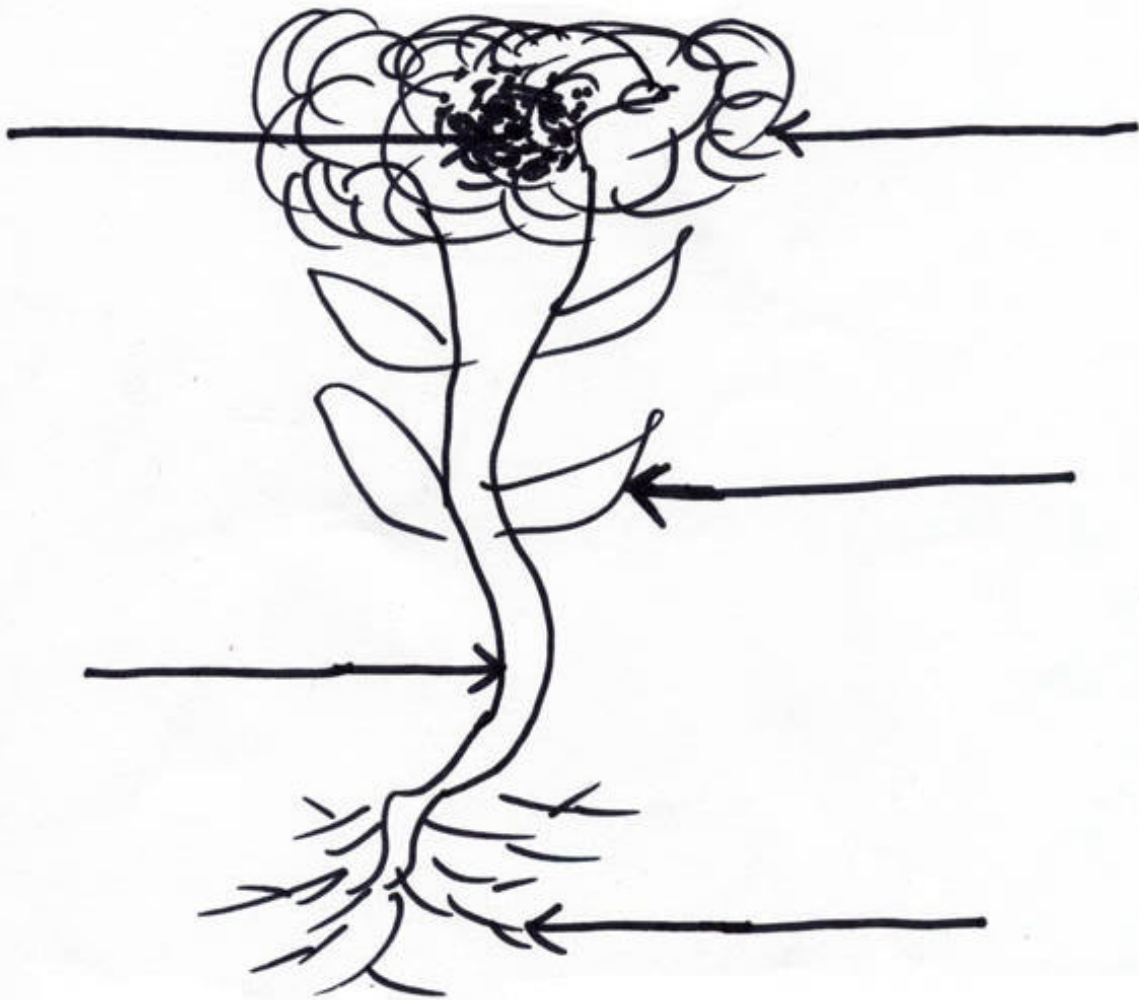
leaves trunk roots



NAME

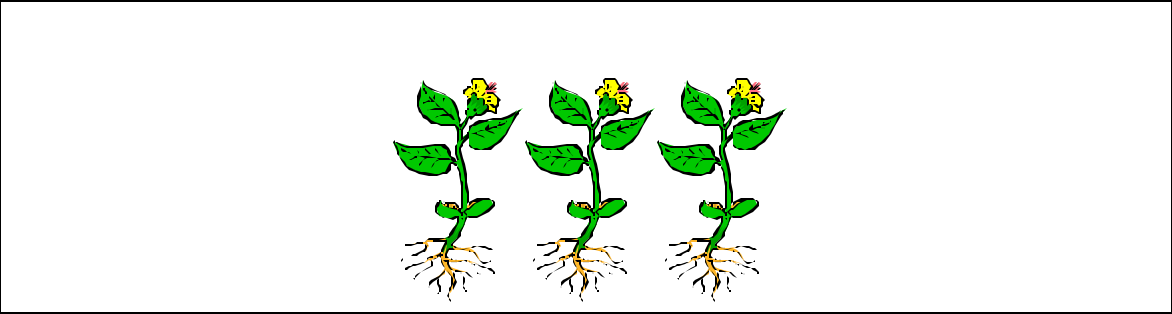
DATE

PARTS OF A PLANT



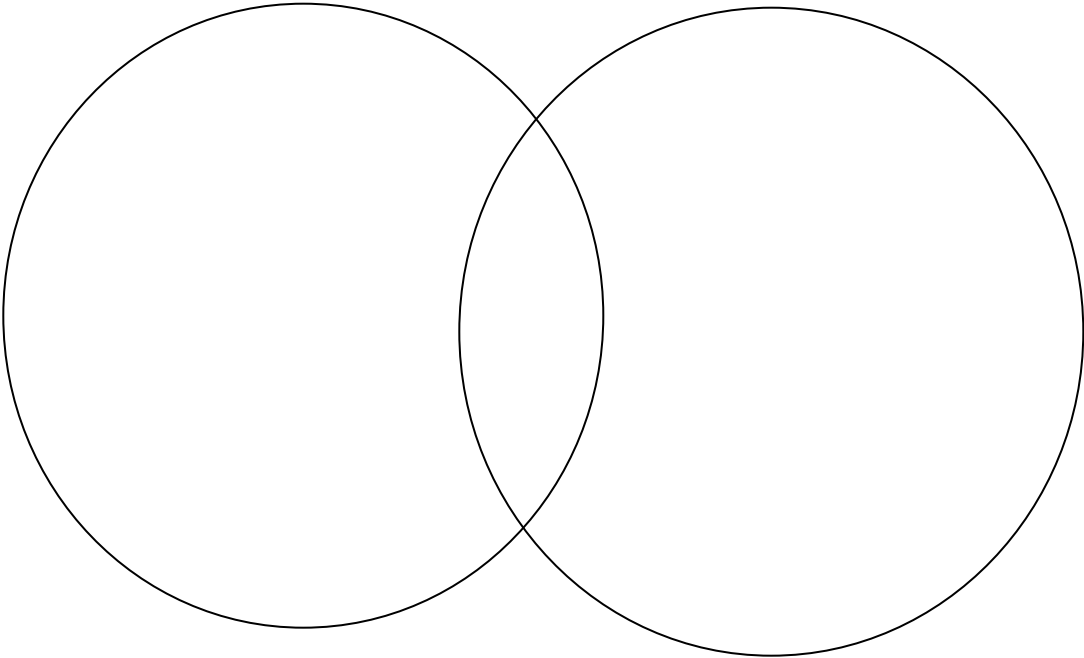
Label parts:

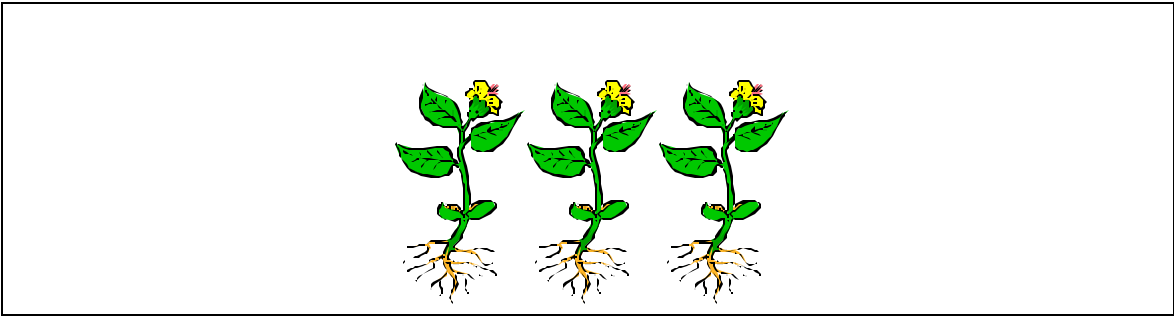
flower leaves stem roots seeds...



**NAME**

**DATE**

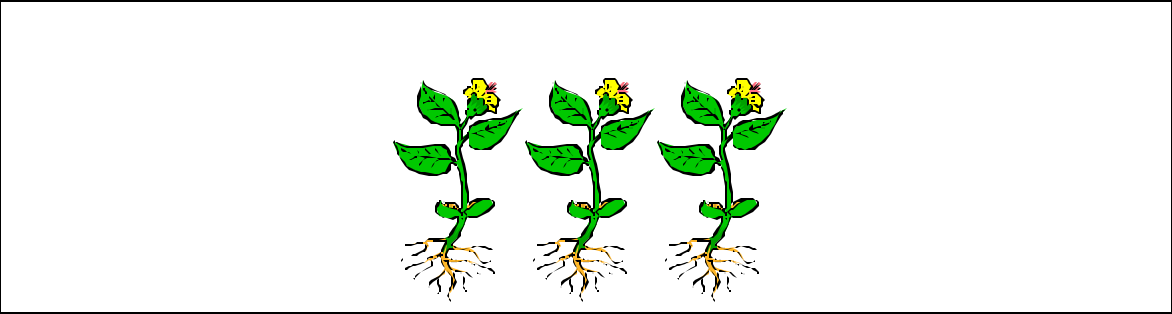




**NAME**

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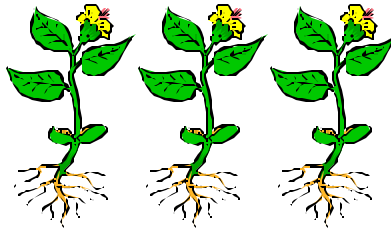
<b>Seeds</b>	<b>Shape</b>	<b>Size</b>	<b>Color</b>



**NAME**

**DATE**

<b>Apples</b>	<b>Color</b>	<b>Shape</b>	<b>Taste</b>



## RESOURCES

### Trips:

New York Botanical Gardens (Bronx, NY) has workshops and tours.

For info: [www.nybg.org/gardens/](http://www.nybg.org/gardens/)

Alley Pond Environmental Center (Queens, NY) has nature walks and workshops about water and plants.

For info: [www.alleypond.com](http://www.alleypond.com).

The Brooklyn Botanical Gardens and the Queens Botanical Gardens also have special workshops for children on nature.

For info: [www.mta.nyc.us/nyct/travel/nature.h](http://www.mta.nyc.us/nyct/travel/nature.h)

### Other good sites:

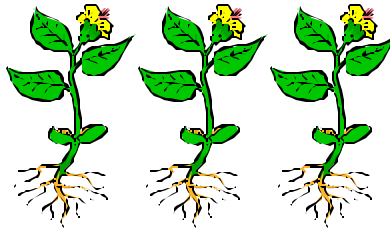
[www.championtrees.org](http://www.championtrees.org).

[www.kidsgardening.com](http://www.kidsgardening.com).

[www.sebiology.org](http://www.sebiology.org).

### Supplies:

Seeds, plastic cups, soil, spray bottles, rulers, Baggies, and magnifying glasses can easily be found in your local hardware and general goods stores. Carolina Biological is another resource for science materials. For info: [www.carolina.com](http://www.carolina.com).



## BIBLIOGRAPHY

### BOOKS:

#### Seasons

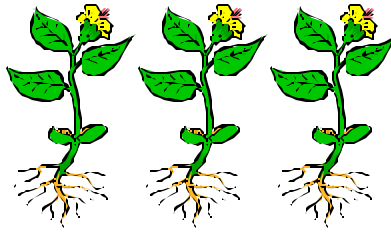
Changing Seasons by Rose Greydanus  
Silly Sidney by Morgan Matthews  
I Can Read About Seasons by Robyn Supraner  
Wonders of the Seasons by Keith Brandt

#### Trees

Now I Know Trees by Sharon Gordon  
Discovering Trees by Keith Brandt  
A Tree Is a Home by Alden Kelley  
In A Tree by David M. Schwartz  
Web of Life by Melvin Berger  
Forests by Rand McNally  
An Apple a Day by Melvin Berger  
Johnny Appleseed Goes a Planting by Pat Jensen

#### Leaves

Why Do Leaves Change Color? by Betsy Maestro  
Red Leaf, Yellow Leaf by Lois Ehlert  
Leaves by David M. Schwartz



## **Seeds**

The Tiny Seed by Eric Carle

Tops and Bottoms by Janet Stevens

A Seed Is a Promise by Claire Merrill

How Do Plants Get Food? by Meish Goldish

Flowers by Rena K. Kirkpatrick

The Gardener by Sarah Stewart

Anna's Garden Songs (poems) by Mary Q. Steele

All About Seeds by Susan Kuchalla

Daisy's Garden by Mordicai Gerstein

Seeds Get Around by Nancy White

The Reason for a Flower by Ruth Heller

Grow a Gift by Pauline Cartwright

The Carrot Seed by Ruth Krauss

## **Water Cycle**

Follow a Raindrop by Elsie Ward

What Makes It Rain? by Keith Brandt

## **POEMS:**

Yellow Weed by Lilian Moore

In Time of Silver Rain by Langston Hughes

Maytime Magic by Mabel Watts