Lesson 1

Introduction to Plants

**INSTRUCTIONAL GOAL**

Students will understand the basic life cycle of a plant and learn to identify basic plant parts.

**PERFORMANCE OBJECTIVE**

Students will complete a plant journal with activities designed to introduce students to plants.

**MATERIALS**

- *Dandelion* by Barrie Watts (grades K-2)
- *Incredible Plants* by Roger Carolin (grades 3-6)
- “How Do Plants Grow?” activity booklets
- Dandelion Sequence Cards
- Overhead transparencies
- Overhead projector

**TEACHER BACKGROUND**

This lesson is designed to offer students a quick and basic understanding of plants. Mix and match the activity sheets in the “How Do Plants Grow?” booklet as appropriate for your classroom, your schedule, and the ability level of your students. The later lessons in this section of *Weed Wackers* will offer the students a more in-depth understanding of plant
processes through the study of a special kind of plants: non-native invasive plants.

Though the diversity of plants on our planet is enormous, there are some general themes to the study of plants. In this lesson, students will become familiar with the different phases of a flowering plant’s life cycle: seed, germination, growth, pollination, fertilization, and seed dispersal. Students will need a basic understanding of the seed, germination, growth and seed dispersal phases of the life cycle for many of the later lessons in this unit of study. Pollination and fertilization of invasive plants will not be emphasized in this unit. In addition to understanding the life cycle of a flowering plant, this lesson also introduces students to the basic structural parts to a flowering plant: roots, leaves, stem, and flower.

ADVANCED PREPARATION

- Xerox one copy of “How Do Plants Grow?” activity booklet for each student. Transfer each activity sheet to an overhead transparency to guide students through the activities.
- For grades K-2, make a copy of the “Dandelion Sequencing Cards” found in this lesson for every pair of students. Cards will be used to orally explain the life cycle of a plant in pairs.
- (Optional) K-2, laminate sets of dandelion life cycle pictures to be used as practice and review as a learning center activity.

PROCEDURE

Grades K-2

1. (Gear-Up) Read Dandelion by Barrie Watts aloud to the class. Encourage students to read the enlarged sentences at the top of each page along with you. Review the life cycle of the dandelion as a class. Make a list of all the plant parts the students saw in the book: stem, flower, bud, leaves, roots, seeds.

2. (Explore) Divide the students into pairs. Hand each pair a copy of the dandelion sequencing cards. Have pairs take turns telling each other the story of the dandelion life cycle using the pictures.

3. (Generalize / Apply) Have students use the information presented in the reading to complete the activities in the “How Do Plants Grow?” activity booklet. For early primary students eliminate more difficult pages from the activity booklet, such as the page “Pollination and Fertilization.”
- Guide students through the activities using the overhead projector.
- Read new information at the top of each page aloud to the students.

4. (Apply) In pairs, have students cut out dandelion sequencing cards. Students take turns sequencing the cards on their own.

Grades 3-6

1. (Gear-Up) Read pages 6-15 in Incredible Plants by Roger Carolin aloud to the class.

2. (Generalize) Have students discuss in pairs new things they learned about plants from the reading. Students report back to the class new things that their partner shared with them.

3. (Generalize / Apply) Have students use the information presented in the reading to complete the activities in the “How Do Plants Grow?” activity
booklet. Guide students through the activities using the overhead projector, or allow students to work through the booklet independently.

4. **(Apply)** Have students write the life story of a plant from the perspective of their favorite plant. The story must include all phases of the plants life cycle, as well as mention all the plant parts included in the activity booklet (this includes the reproductive parts on the “Pollination and Fertilization” page). Here are some questions to get the story flowing:

- What kind of plant are you?
- When was your birthday? How do you know?
- What was your first memory after germinating?
- What did you need to grow? Did you have any struggles growing up?
- What did it feel like being pollinated? Did it tickle? Were you pollinated by insects or the wind?
- Do you have any features that you are proud of? Your beautiful flowers? Your strong roots?

**EVALUATION**

- The completed “How Do Plants Grow?” activity booklet serves as one evaluation tool for this lesson.
- For 3-6 grade students, the completed life story of a plant serves as an additional evaluation tool.

**EXTENSIONS**

- Conduct a seed scavenger hunt in your schoolyard, garden, or nearby woods. Classify seeds by shape, color, or mode of dispersal.
- Collect plants from your schoolyard, garden, or nearby woods and use them to create crayon rubbing art murals.
- Sow dandelion seeds in soil and watch them germinate and grow in your classroom.
- Turn your classroom into a Plant Parts Café. Students sort commonly available fruits and vegetables by the part of the plant that we eat and then enjoy a feast. On the menu: flowers (broccoli, cauliflower), stems (celery, rhubarb, asparagus), roots (carrots, radishes), leaves (lettuce, cabbage, kale), and seeds (sunflower seeds, peanuts, green beans).

**REFERENCES**

Dandelion Sequencing Cards
How Do Plants Grow?

A Plant Activity Book

By _________________
Parts of the Plant

Name the parts of the plant. Match and print the correct plant part word on the line next to the arrow.

leaf  root  stem  flower

A sedge is a flowering plant that grows in Alaska!

Drawing reproduced with permission from ADFG (2005).
Plant Life Cycle

Plants have a life cycle, just like all living things. They begin as a seed, grow into a plant and then make new seeds. The life cycle for a flowering plant has 6 stages. Use the words in the word box below. Print the name of the stage on the correct line.

<table>
<thead>
<tr>
<th>Fertilization</th>
<th>Seeds</th>
<th>Pollination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seed Dispersal</td>
<td>Growth</td>
<td>Germination</td>
</tr>
</tbody>
</table>

1. __________
2. __________
3. __________
4. __________
5. __________
6. __________
Seeds

A seed is a baby plant waiting to happen. It holds food for the new plant once there is enough water and warmth for the seed to sprout. Seeds can survive over the winter, and even for many years! Seeds come in all shapes and sizes. They can be covered in shells, fruits, or cones. Color the seeds on this page.

Birch

Watermelon

Peanut

Sunflower

Apple

Spruce
Germination

Seeds germinate, or begin to sprout, when they have enough water and warmth.

- Color the seed brown.
- Color the seed coat black.
- Color the cotyledons green.
- Color the roots yellow.
- Color the bud purple.
Growth
What do plants need to grow?

They need **nutrients** and **water**, just like you! Plants need **light** and **air**, too.

<table>
<thead>
<tr>
<th>1. Roots take me from the soil up into the plant. I keep the plant healthy. What am I?</th>
<th>2. I am warm and bright. I hit the leaves and plants use me to make food. What am I?</th>
</tr>
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<tbody>
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<tr>
<th>3. You cannot see me, but I am all around. Plants get the gas they need from me. What am I?</th>
<th>4. I come down as rain, and the plant drinks me up through its roots. What am I?</th>
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Pollination and Fertilization

Flowers hold the pollen and the ovule (like an egg) for the plant. The petals attract insects to come and get their pollen which is on the stamen. Insects take the pollen to other flowers where it sticks to the pistil. This is called pollination. When the pollen meets the ovule inside the pistil the flower is fertilized and makes a seed.

Label these parts on the flower:

- petal
- pollen
- stamen
- ovule
- pistil
Seed Dispersal

Seeds are scattered to new places to begin the plant life cycle again. Dispersal means taken to a new place. Seeds can travel to new places by wind, animals, or water.

**Seeds that move on the wind**
- Spruce
- Dandelion
- Birch

**Seeds that move on fur, feathers, or clothing**
- Quackgrass
- Burdock
- Foxtail Barley

**Seeds that move on water**
- Coconut
- White Sweetclover

Make a seed that flies.  Make a seed with hooks.  Make a seed that floats.