

2003 National Teacher Training Institute

Grade 1

Sunflower Sundance

Master Teacher

Elaine Morgan

Time Allotment

50 minutes

Overview

The ITV program “The Sunflower” guides the viewer through each process of the life cycle of a sunflower. Segments of the video will be used as the “seed” for the lesson. Students will see exactly what is happening from the initial planting of a sunflower seed and be able to name the parts of the plant as it grows. Students will also be able to explore the Web for varied planting activities or crafts with flowers. All students will participate in hands-on gardening.

Differentiation of Instruction

This lesson is modified for students with special needs; the lesson will need to be signed for the deaf. Visually-impaired students may need to sit closer to the TV screen or a projection device can be connected to the VCR to show the video on a large screen. Hand over hand assistance may be needed to guide students through tracing shapes on the screen as well as when using the mouse for the Web activity. Place the TV screen at a height that students can touch the screen to identify or trace objects shown in the video.

Activities for this lesson are based on guidelines from SC Curriculum Standards Implementation Guide, Chapter Four, pages 7-8, 19. Differentiation of Instruction (<http://www.myschools.com/Offices/CSO/SIG/k5.htm>) modifications for special needs students are included in this lesson.

Subject Matter

Life Science

Learning Objectives

Students will be able to:

- ✍ Identify a plant and its parts by pointing to a specific part of the sunflower plant;
- ✍ Use the “Cut and Paste” Activity Sheet with four words: seeds, soil, water and sun;
- ✍ Create an individual sunflower craft and orally or sign the word, plant and the names of the plant parts: seeds, roots, stems, leaves, flower;
- ✍ Plant a sunflower seed.

South Carolina Standards

(These Standards are available online at <http://www.myschools.com/Offices/CSO/>)

II. A.2. a. Identify the parts of a plant (seeds, roots, stems, leaves, flower, and fruit).

Media Components

Video

How Plants Grow, Lesson 1: “The Sunflower,” explores the life cycle of the sunflower from planted seed to the seed produced by the sunflower and picked for planting and other purposes. This lesson will use clips from the video to identify plant parts and introduce vocabulary.

Web Site

NatureScene Interactive

(<http://cfmedia.scetv.org/naturescene/>).

The Web site’s Search tool will be used to locate pictures of sunflowers. The information returned identifies the states where sunflowers are native plants. Students will observe that not all sunflowers look alike.

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Materials

Per student:

clear 16-ounce plastic cup
1 box of crayons
1 pencil
1 pair of scissors
4 pieces of yellow construction paper
1 small paper plate (this will be used for the center of the flower)
“Cut and Paste” Activity Sheet

Per class:

chart paper and marker
20 lb. bag of potting soil (depending on class size, more or less may be need)
1 lb. bag of pebbles
push pin (for teacher use only)
2 packs of sunflower seeds (if possible buy a pack that will produce different kinds of sunflowers)
1-4 watering cans containing water
5 lb. bag of sunflower seeds (for craft)
4 designated areas for planting the Seed Planting activity.

Equipment

television and VCR with remote control
(**Note to Teacher:** A large screen projection device connected to the VCR may be used for visually-impaired students.)

computers for students
(**Note to Teacher:** Use accessible devices as appropriate for special needs students.)

Adapting NTTI Strategies for Deaf/Hard of Hearing and/or Visually-Impaired Students

Adapting Video

- ✎ Closed captioned and total communication for deaf students
 - Interpret (sign) closed-captioned video to provide total communication for deaf students.
 - Use visual communication to

enhance understanding of the video scenes for students not reading at the vocabulary level of the captions.

- Signing over narration helps students focus when an emphasis on certain information is needed.

- ✎ PAUSE strategy and closed captioned
 - When using closed captioned, pausing the video can cause the loss of 1-3 sentences of closed captioned as the pause is released and the video begins to play at the pause point. Suggestions for modifying the PAUSE strategy:
 - The teacher may need to rewind after the pause and then begin to play the video.
 - Play closed captioned in longer segments and provide a video guide sheet with the **Focus for Media Interaction**.
 - Play the video segments through from the beginning point to the ending point. The **Focus for Media Interaction** would be given at the beginning. Tell the students that they will watch the entire segment, and then watch it again, pausing for them to answer the focus task for each segment. Tell them some of the caption is lost at pause points, read carefully the first time.

- ✎ Non-captioned video
 - Prepare to interpret (sign) the video for deaf students.
 - Arrange for a qualified interpreter to sign the video. Plan the lesson in advance to allow time for this arrangement.

- ✎ Screen size for visually-impaired students

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- Use a projection device with the VCR to project the video to a large screen.

Allow students to sit close to TV or large screen.

- Determine how the students can touch the TV screen, if not by hand, then with a pointer (yardstick). Provide an opportunity for the visually-impaired student to touch or trace images if touch would enhance the learning.

Adapting Web Sites

✎ Web sites with audio

- Provide an interpreter for each hearing-impaired student.
- Use with small groups with teacher interpreting and guiding the activity.
- Direct students to alternate text files for the video/audio if available.

✎ Screen size for visually-impaired students

- Use a projection device with the computer to project to a large screen.
- Allow students to sit close to computer screen or projector screen.
- Determine how the students can touch the screen, if not by hand, then with a pointer (yardstick). Provide an opportunity for the visually-impaired student to touch or trace images if touch would enhance the learning.

✎ Web sites with total communication for the blind

- Use sites encoded with Braille.
- Use sites with audio.
- Use sites that are easily read by text reader software. (Page is formatted from left to right

allowing tab or arrow keys to move the reader through the text and images. Images have alternate text that identifies the image in relation to the text on the page.)

Prep for Teachers

✎ Preview and cue the video.

✎ Determine how the students can touch the TV screen, if not by hand, then with a pointer (yardstick).

✎ Draw a line to divide the chart paper into two columns. Place chart paper and marker near the screen for viewing the video.

✎ Make several holes in the bottom of each cup with a push pin before giving to each student. (Excess water will cause the seeds to rot, not grow).

✎ Prepare and label four planting areas: Soil, Seed, Water, Plant.

✎ Assemble cups, soil and pebbles in the soil area. Prepare one cup with pebbles in the bottom and a second cup with pebbles and soil. Soil should not come to the top of the cup. Leave at least one inch of cup above the soil to prevent water from spilling over the sides of the cup.

✎ Assemble pencils and seed in the seed area.

✎ Assemble filled watering cans in the water area.

✎ Prepare a grow area that will receive sunlight or other bright light during the school day. Cover the grow area with

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several thickness of newspaper to absorb excess water.

- ✎ Check your browser for needed plug-ins. SCETV's KnowItAll Web site (<http://www.knowitall.org/BrowserCheck.htm>) has a Wizard to check for plug-ins needed to view the *NatureScene Interactive* Web used in the WWW activity in this lesson plan. Read the Wizard page carefully and follow the directions to install plug-ins that the Wizard indicates you need.

- ✎ Preview and bookmark *NatureScene Interactive* (<http://cfmedia.scetv.org/naturescene/>). Prior to teaching the lesson, open all of the Web pages for the activity on your computer. On the *NatureScene Interactive* Web page, click on the Search button on the left of the screen. Type "sunflower" in the Search box. The Search should show these states as having sunflowers: Colorado—Giant Sunflower; California—Giant Sunflower; Utah—Sunflower; South Dakota—Common Sunflower; New Mexico—Sunflower. Flowers in other states listed are in the sunflower family.

Click on the flower name to go the page with a small picture and information on the flower. Click on the picture button to get a larger picture. Select several of the large sunflower pictures, leave each selected picture open and minimize the window. When ready to do the Web activity with the students, click on the minimized buttons on the task bar and discuss one picture at a time.

- ✎ For special needs students, connect a projector to the computer to project the images to a large screen.

- ✎ Make copies of the "Cut and Paste" Activity Sheets. Cut out the vocabulary words, as appropriate, for special needs students.

- ✎ Make a paper sunflower before the lesson. Directions for paper sunflower: Materials—a small paper plate, 4 pieces of yellow construction paper cut in strips (any length and size may vary). Glue loops of yellow strips around the edge of the plate. Continue this step around the edges of the plate until the flower is formed. Then take a handful of sunflower seeds and glue them in the center. The sunflower will be used as a model for the students.

- ✎ When using media, provide students with a **Focus for Media Interaction**, a specific task to complete and/or information to identify during or after viewing of video segments, Web sites, or other the multimedia elements.

Introductory Activity

Step 1: Brainstorm with the students about how the plants grow. What do you need to grow a plant? (*Seed*) What grows first? (*Root*) What does a plant need to grow? (*Sun, soil, water*) Accept any possible answers. Show the students the sunflower seed. Say, "Today we will plant some seed. First we will watch a video that will show us how a seed grows." View the first segment of the ITV program *How Plants Grow*, "The Sunflower." Use sign language to narrate the video for hearing impaired students.

Step 2: Provide students with a **Focus for Media Interaction** by telling them that the seed needs three things to grow. Each time they see or hear something that a seed needs to grow, they are to hold up their hands.

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Step 3: START the video where the picture shows hands selecting seeds from a pile of seeds and you hear, “Here is something you can do in your own back yard.” PAUSE the video where the picture shows a seed in soil with the root touching the bottom of the screen and you hear, “Water and minerals enter the baby plant through that root.” Ask the students, “What three things does a plant need to grow?” (*sun, soil, water*) Write the vocabulary words in the first column on the chart paper. Together pronounce/sign each word as it is written.

Step 4: Continue to keep the video on PAUSE. The picture of the seed with the root is on the screen. Now provide students with a **Focus for Media Interaction** by asking, “What did the seed grow first?” (*root*) Ask a student to come up to the screen and trace the root with one finger. Tell the students to use their thumbs to show if the root grew up toward the sky or down into the soil. (*thumbs down*) “Why does the plant need a root?” (*food*) Write the vocabulary word *root* in the second column on the chart paper. Together pronounce/sign the word as it is written.

Step 4: To provide students with a **Focus for Media Interaction**, ask them to PREDICT what the seed will do next. (**Note to Teacher:** Accept any answers.) PLAY the tape beginning at the pause point. STOP the tape where the picture is a sprout with two leaves and you hear, “Two leaves” then music. Ask the students, “Did the seed do what you thought it would do? What did happen next?” (*The seed pushes up out of the soil and two leaves grow.*) “What is the name of the part of the plant that the leaves are attached to?” (*The vocabulary word stem is not said in the video. Introduce the word.*)

Step 5: Write the vocabulary words, *leaves* and *stem*, in the second column on the chart

paper. With the students, pronounce/sign each word as it is written.

Step 6: To provide students with a **Focus for Media Interaction**, ask them to PREDICT what the plant will grow next. (*Accept any answers*) PLAY the tape, beginning at the pause point. STOP the tape, the picture shows the root with branches and you hear, “Branching out” then music. Ask the students, “Did the plant grow what you thought it would grow?” (*Allow answers.*) “What did happen next?” (*The seed grew more roots.*) “Why did the seed need more roots?” (*To help the sunflower “stand up”*) Ask for a volunteer to come point to the word *root* on the chart paper. Ask the class to pronounce/sign or spell the word.

Step 7: To provide students with a **Focus for Media Interaction**, ask them to PREDICT what the plant will grow next. (*Accept any answers.*) PLAY the tape, beginning at the pause point. STOP the tape where the picture shows a sunflower bloom and you hear, “There it is.” Ask the students, “Did the plant grow what you thought it would grow?” Flower is the plant part for the students to name at this point. Write the vocabulary word *flower* in the second column on the chart paper. With the students pronounce/sign the word as it is written.

Step 8: Turn the SOUND OFF. Then FAST FORWARD the tape to the picture of a row of sunflower plants. PAUSE to freeze the picture of the sunflower plants. To provide students with a **Focus for Media Interaction**, ask them to name the parts of the sunflower plant that are in the picture. (*stem, leaves, flower*) Repeat the following until all plant parts have been named at least once.

Step 9: 1) Select a volunteer to touch a part of the plant on the screen. 2) Instruct the class to name/sign the plant part. 3) Ask for

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a volunteer to touch the word on the chart that names the plant part. 4) As the volunteer traces with a finger each letter of the plant part, tell the class to spell/sign the word. 5) Have the class repeat the name/sign for the plant part.

Step 10: Write the word *plant* on the chart paper. Have the class pronounce the name/sign the vocabulary word *plant*.

Learning Activities

Step 1: Explain to the students that they will now plant their own sunflower. Brainstorm with the students to identify what they will need to grow a sunflower. Ask the students to identify the vocabulary words that name what is needed to grow a plant. (*soil, seed, sun, water*) Select volunteers to circle/underline/check these vocabulary words on the chart. Have the class repeat the name/sign for the plant part as it is highlighted on the chart.

Step 2: Seed Planting Activity.

Divide the students into small groups. Each group will move from the soil area, to the seed area, to the water area, plant area.

Step 3: Demonstrate to the students what they will do in each planting area, and then move each group through the planting areas.

Soil area: Explain to the students that the clear cups will allow them to watch the root growth. Ask the students, “Will the roots grow down or up?” Put pebbles then soil into the cup.

Seed area: Use the pencil to make a hole. Place the seed in the hole. Cover the seed with soil.

Water area: Water the seed with a little water. Place the seed in the grow area.

Plant area: Place the cups on a warm sunny windowsill in the classroom or provide a light source for the plants during the school day.

Step 4: The students will need to realize that their plants will not grow as fast as the ones in the video. Ask the students if their plants will grow as fast as the sunflowers in the video. (*Accept any answers.*)

Step 5: REWIND the video, “The Sunflower,” to the start of the first segment. Provide students with a **Focus for Media Interaction** by telling them: Raise your hand when you hear the narrator explain why the sunflower grows so fast in the video. Raise your hand when you hear the narrator say how long it takes different parts of the plant to grow.

(**Note to Teacher:** For hearing-impaired students, the narration will need to be interpreted.)

Step 6: REPLAY the video. STOP the video, the picture shows a sunflower bloom and you hear, “There it is.” Ask the students why the sunflower seemed to grow fast in the video. (*The camera made it appear that way.*) Ask the students how long it will take their plants to grow. (*Conclude that they will have to wait for at least two weeks before the leaves will sprout.*)

Step 7: Lead the students through this Web activity. Provide them with a **Focus for Media Interaction**, tell them to look at each sunflower and repeat the following:

- 1) Ask them to name/sign the plant parts that are in the picture and identify the matching vocabulary word on the chart for each part.

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- 2) Confirm that each response is correct.
- 3) Ask students to identify how the plant parts in each picture are different from the sunflowers in the video. (leaf size and shape, flower size and shape, height of stem)

Step 8: Tell the students that they will make a sunflower with paper. Show the students a completed sunflower. Directions for paper sunflower: Materials—a small paper plate, 4 pieces of yellow construction paper cut in strips (any length and size may vary). Glue loops of yellow strips around the edge of the plate. Continue this step around the edges of the plate until the flower is formed. Then take a handful of sunflower seeds and glue them in the center. Let the paper sunflowers dry overnight on a flat surface. Then make a flower garden along the baseboard. Place the flowers at different heights.

Culminating Activity

Step 1: Hand out the “Cut and Paste” Activity Sheet. Facilitate the students in a discussion of the pictures on the activity sheet and how they relate to what they learned about plants on the video and on the Web site.

Step 2: The students will name/sign the parts of the sunflower on the “Cut and Paste” Activity Sheet. Ask the students what part that helps the plant grow and stand up is missing on the sunflower. Have the students draw roots on the sunflower.

Step 3: Tell the students that they will paste the words on the activity sheet beside the correct picture. The students should be able to cut and paste the correct answer in the matching box. (**Note to Teacher:** Cut the words out for the students that physically cannot do this.)

Step 4 (optional): Use a large sunflower drawn on chart paper and have the same format of the “Cut and Paste” Activity Sheet to review as a class.

Step 5: Visually check the student’s completion of the “Cut and Paste” Activity Sheet.

Cross-Curricular Extensions

English/Language Arts: Students can name or sign descriptive words to describe a sunflower. These words can be listed on chart paper or written on sentence strips for students to use as a guide to write the words.

Social Studies: Teacher-led activity: Students can use a wall size United States map to place small sunflower stickers on states that grow sunflowers. Students can name states that grow sunflowers.

Math: The video can be used to count the leaves at various stages of the sunflower’s growth and to create a time line for the growth stages of the sunflower.

Students can count the number of sunflower seeds they have in the center of their plate. Students can count the states that grow sunflowers.

Measure the height of each student and cut a strip of green paper the same length. The green strips will be used as the stems of the sunflowers and will determine how high above the baseboard each sunflower will be placed.

Community Connections

- ✍ Take a field trip to a landscape nursery to explore plants of various sizes. Students can identify the four parts of the plants learned in this lesson.

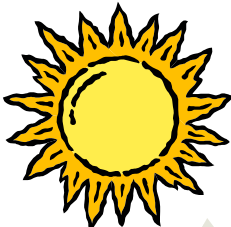
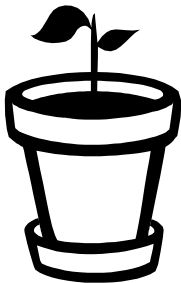
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- ✎ Invite someone from a local greenhouse to the classroom to bring a sunflower or other types of similar flowers in various stages of growth. Students can arrange the plants in the stages of growth.

Student Materials

“Cut and Paste” Activity Sheet

Cut and Paste



seeds

soil

water

sun