

Lesson # 6

Project: 4-H School Enrichment Educational Series

Project Manual: Science-Horticulture

Grades: 4th-6th

Learning Activity: Putting the Garden Together

Track: Science - Horticulture

Life Skill: Managing resources

Character Focus: Responsibility- A productive garden is a big **responsibility** for the gardener.

Project Skills: Acquiring, processing and interpreting data, analyzing investigations

Louisiana Content Standards Benchmarks and Grade Level Expectations:

SI-M-A4 Developing descriptions, explanations and graphs using data. 5th grade #12. Use data and information gathered to develop an explanation of experimental results

SI-M-A7 Communicating scientific procedures, information and explanations. 5th to 8th grade #22. Use evidence and observations to explain and communicate the results of investigations

Time Allotted: 35-45 minutes

Number of Participants: small or large groups

Key Concepts:

1. Plants grow better at certain times of year.
2. With ideal settings crops will grow faster and produce more.
3. Plants need to be planted at the proper depth, in rich soil and during the correct season.
4. Good plans and knowledge of plants to be incorporated into a garden are necessary for successful plant growth.

Objective:

1. Participants will plan a garden with assigned crops.
2. Participants will list two crops that will grow in each of the four seasons.
3. Participants will identify plant needs according to depth of planting, soil, season and harvest.

Getting Ready:

1. Read and copy the **Task Cards** Resource Sheet #1, page 7 of this lesson plan; Task Card 4 requires a group to work harder in planning. Consider giving it to a more organized and mature group. Answer sheet for this activity, Resource Sheet # 2, is on page 8 of this lesson plan.
2. Make available two to three copies of the *Louisiana Vegetable Planting Guide* for completing the group activity. It is available online only now. You may also want to share Resource sheet #3, p. 9 of this lesson plan.
3. Groups should be allowed to assemble the information in one of several ways:
 - a. Poster
 - b. Regular paper
 - c. Table/Chart computer formed
 - d. PowerPoint presentation
4. Consider allowing participants freedom in presenting the information.
5. Review the *Louisiana Vegetable Planting Guide* for accuracy of information when presented by participants.
6. Contact the LSU AgCenter parish office for additional information about Louisiana crops and gardens.

What You Need for the Lesson:

1. Pencils, markers, posters, lined and unlined paper
2. Computer, printer (Only if easily available)
3. Copies of the Task Cards, Resource Sheet #1, p.6
4. *Louisiana Vegetable Planting Guide* – two to three copies per group

Lesson Plan:

What You Say:	What You Show or Do:	What Participants Do:
<p>1. Gardening is a great way to provide yourself and others a more nutritional way of eating as well as a great way to understand nature a little better. We've learned a great deal about soil, planting and the needs of plants. As we've studied, we've come to realize that Louisiana farmers plant many crops. Can anyone name a crop you've seen growing along the roads? (Possible answers: sugarcane, corn, soybeans, rice, etc.) When winter comes, do you ever see any planting by farmers? (Possible answers: cabbage, carrots, eggplants, onions, etc.)</p> <p>2. In Louisiana many offices help our farmers and gardeners. Parishes have offices and workers called county agents who help gardeners and farmers grow plants successfully. These offices have publications and people to give help, and they give information free to those who need it. What might someone need to ask for at this office? (Possible question: Do you have any information on how to care for roses? Why won't my tomatoes grow? Answer: The soil may need additional nutrients; it might have a disease, etc.).</p>	<p>1. Ask the question and elicit responses from the group. Give students time to discuss and reply.</p> <p>2. Give students time to discuss and reply. Solicit responses. Encourage participants to think about questions and answers that would be asked at this office.</p>	<p>1. Give examples of crops seen on farms.</p> <p>2. Students respond.</p>

What You Say:	What You Show or Do:	What Participants Do:
<p>(Experience)</p> <p>3. Today we are using a publication that is available online to Louisiana gardeners. It gives important information that will encourage gardeners to have success in planting a garden. We are will work in groups of three to four, read a Task Card and complete the activity assigned on it with the assistance of a document called <i>Louisiana Vegetable Planting Guide</i>. As you work together, formulate a plan to present the information compiled and learned to the other participants. Materials to use in working with your task card and group are located here (point to where they are). Please send one person from your group to gather what is needed. Group Forming (Give each participant a number from 1-4, repeat the number process 1-4 until each group has three to four. Only four groups are needed).</p> <p>4. As you work, read the information in the planting guide carefully so that you are accurately planning a garden for the crops listed on the Task Card. You will have 15-20 minutes to gather the information, and then be ready to present.</p> <p>(Share)</p> <p>5. As you worked in groups, each of you learned about crops that are grown successfully in Louisiana at certain seasons. Many gardeners and farmers depend on materials like the one you've used to grow healthy crops.</p>	<p>3. Show the task cards and <i>Louisiana Vegetable Planting Guide</i> as you give instructions. Point out where materials are and have groups create a presentation to share with the other participants upon completion of the task card.</p> <p>4. Monitor group participation at all times by walking around and encouraging staying on task. Give assistance to any group members who have a problem reading and locating information in the <i>Louisiana Vegetable Planting Guide</i>.</p> <p>5. Listen as groups present materials.</p>	<p>3. Separate into groups of three to four and read the task card. Groups assign responsibility for planning and gather materials and supplies needed.</p> <p>4. Work in a group with the materials to develop a plan for presenting to others.</p> <p>5. Present materials by groups and listen as other groups present.</p>

What You Say:	What You Show or Do:	What Participants Do:
<p>We are going to begin with Task 1 Card. Each group will present the information as we all listen. Continue pattern until all Task Cards have been presented. Limit each group to 2-4 minutes.</p> <p>(Process)</p> <p>6. How can we use what we've learned? (Possible answers: plant certain crops during certain seasons, encourage other people to plant correctly, tell others about documents like the one we used, etc.)</p> <p>(Generalize)</p> <p>Where can you go to find information you might need? After using the materials to assist in planting correctly, do you think you could plant a garden with greater possibility of success? (Possible answers: Yes, because I understand when and how to plant crops, etc.) Do you think it is important for people to study plants? (Possible answer: Yes, because they help us understand how to grow plants in a healthy way, etc.) What is a person called that studies plant growth? (Possible answer: Horticulturist)</p> <p>Horticulture is an important field of study for our state. As you consider the future and what you might do for a living, remember that our state needs many people studying plants and growing them to continue our productive farm state.</p>	<p>6. Ask questions to encourage participation of responses from participants. Lead responses to a correct answer.</p>	<p>6. Answer questions.</p>

What You Say:	What You Show or Do:	What Participants Do:
<p>(Apply)</p> <p>7. Planting and growing food in a garden are wonderful ways to provide your family with fresh, nutritious vegetables. However, a productive garden is a big responsibility. What responsibilities will you have when growing a garden? (Possible answers: Clean weeds from the garden, water and fertilize plants, keep harmful bugs and insects from the plants.)</p> <p>8. As the keeper of a garden, it is your responsibility to follow correct planting steps, add fertilizer or other plant foods as needed, add water to the soil when rain does not provide enough moisture for the plants to grow, and also watch for bugs, worms and other creatures that might destroy the plants. Success in a garden requires the gardener to stay with the project until it is completed and not to give up when things are not going well. Being responsible for a garden is a great way to help you become a reliable person who can be trusted to do a good job and follow through.</p>	<p>7. Allow time for responses and discussion.</p>	<p>7. Respond and discuss.</p>

Ways to Help Members Learn More:

1. Invite a county agent to visit to share what he or she does in a job.
2. Visit a county agent’s office to see what is available for the general public to use.
3. Invite a farmer or well-known gardener from your area to share about planting and what must be understood to be successful in planting crops.

Resources

Down-to-Earth, Enriching Learning Through Gardening. NC State University & A&T State University Cooperative Extension.

Louisiana Vegetable Planting Guide. Louisiana Cooperative Extension Service, Pub. 1980.

Acknowledgments:

Louisiana Content Standards Benchmarks, and Grade Level Expectations, published by Louisiana State Department of Education

Author: Katherine Pace, Assistant Extension Agent, 4-H, Orleans Parish/Shelia Woerner

Coordinator: Dr. Steve Mullen, Regional Director, LSU AgCenter, Crescent Region

Reviewed by: Dr. David G. Himmelrick, Head, Department of Horticulture, Louisiana State University

Editors: Sarah Williams, Jane Honeycutt

Resource Sheet #1

TASK CARDS

<p>Task 1: Make a poster showing how you would plan a garden to grow sweet corn and cabbage. Devise a schedule for growing these crops to include: season for planting, depth to plant, inches between plants, days to harvest and the recommended variety to grow in Louisiana. Tell how the weather might affect the planting at the proposed time of year.</p>	<p>Task 2: Use a table format to plan a garden of snap beans and tomatoes. Make a plan for growing these crops to include: season for planting, depth to plant, inches between plants, days to harvest and the recommended variety to grow in Louisiana. Tell how the weather might affect the planting at the proposed time of year.</p>
<p>Task 3: Use a calendar plan to create a garden that will grow carrots and okra. Make a plan for growing these crops to include season for planting, depth to plant, inches between plants, days to harvest and the recommended variety to grow in Louisiana. Tell how the weather might affect the planting at the proposed time of year.</p>	<p>Task 4: As a group, decide how to present the garden plan that will allow for planting year round. Include at least one crop for each season. Use the information from the <i>Louisiana Vegetable Planting Guide</i> to determine what crops to grow, the season for planting, depth for planting, inches between plants, days to harvest and recommended variety for Louisiana. Tell how the weather might affect the planting at the proposed time of year.</p>

Resource Sheet #2

Answer Key:

<p>Task 1: Sweet Corn - Plant in Spring at $\frac{1}{2}$" depth about 10-12 inches apart and harvest is about 69-92 days. Cabbage - Plant in October - January at $\frac{1}{8}$" depth about 12-15 inches apart and harvest is about 65-75 days.</p>	<p>Task 2: Snap Beans - Plant February-May at $\frac{1}{2}$" depth about 2-3 inches apart and harvest is 55-66 days. Tomatoes - Seeds in January and Plants in March at $\frac{1}{8}$" depth for seeds and 16-24 inches apart as a plant. Harvest is 60-75 days for plants.</p>
<p>Task 3: Carrots - Plant in January at $\frac{1}{8}$" depth about 1-2 inches apart with harvest 70-75 days. Okra - March-August at $\frac{1}{2}$" depth about 1-2 inches apart and a harvest of 60 days.</p>	<p>Task 4: Answers depend of vegetables chosen. Follow the <i>Louisiana Vegetable Planting Guide</i> for answers.</p>



Planting a Garden

1. Devise a plan to include:

- a. area for planting - contact the school administration to see if there is an area available at the school for use; if not, then consider using pots for the planting.
- b. type of plants to be used; consider donations from local farmers, nurseries or individuals.
- c. soil available as needed; if additional soil is needed ask your local Wal-Mart manager or other local stores to consider donating the needed materials.
- d. tools needed for working the garden. Ask parents to volunteer the use of their equipment. Be sure to thank them appropriately when returning the equipment.
- e. plants that are appropriate for the area, season and ease of growth.

2. Planting Day

- a. Separate participants in groups of three to four, depending on the type of garden being planted and work to be completed.
- b. Consider assigning jobs to participants to ease the responsibility of all work being done by one participant.
- c. Review safety of tool use as needed.