

**Outline of Lesson
Growing with Vegetables
Unit 1, Lesson 2
Grade 1-3**

Lesson Time: 60 Minutes

Lesson Outline:

- 1. Plan and Plant an Indoor Vegetable Garden**
 - How to plan a garden and plant seeds
- 2. Maintaining the Indoor Vegetable Garden**
 - What plants need to survive in the classroom
- 3. Healthy Snack: Carrots**
 - Students need to eat at least 3 Cups of fruits and vegetables every day in order to stay healthy

Student Learning Objectives:

By the end of this lesson students will:

- Understand how to plan and plant an indoor vegetable garden.
- Understand what plants and children need to grow and thrive in the classroom.
- Know that children need at least 3 Cups of fruits and vegetables every day.

Growing with Vegetables

Overview (for Teacher)

Pre-Class Preparation

⊗ *Items marked with this symbol may not be purchased using FSNE funding, nor included as part of cost share*

⊗ Make a watering jug for your plants: a 16 oz plastic water bottle works best. Poke 5-8 holes in the plastic lid with a push-pin (poke from INSIDE the lid), replace the lid, and you have a great kid-sized watering jug.

⊗ Collect a 1-gallon jug (such as a milk container) for each learning team in your class. Cut off the top half of each jug off to make a planting container. Poke 8 holes in the bottom with a push-pin (poke from INSIDE the jug) for drainage.

- Divide class into learning teams of 4 to 5 students.

Teacher Involvement During Class



- Write down appropriate behaviors for Learning Contract.
- Help students plant seeds in their containers during planting.
- Assist in behavior management of students.

Post-Class Teacher Responsibilities

Snack

- Have students wash their hands and clean their workspace.
- Give students 2-3 carrots as a snack. Carrots make a quick and healthy snack instead of candy, cookies, and soda.
- Ask students what amount of vegetables and fruits they should have in 1 day. (Answer: At least 3 Cups)

Maintain Indoor Vegetable Garden

Keep lights hanging low – one inch from the soil, and one inch from the leaves once they sprout.

- Remind teams to water plants. **Watering indoors:** Make sure to keep plants watered, but not over-watered. Seeds are very small, and they need to stay moist in order to sprout, but they also could get lost in the soil if they get too much water. The soil has the right amount of water if it feels moist like a sponge. Water until the soil is wet all the way to the bottom of the jug.
- If class goes on break – water plants well, then pour one inch of water into the black tray to provide water during the vacation.

Vocabulary

To Plant– to put a plant or a seed in the ground so it will grow.

Map– a picture or drawing of an area, showing you what is there so you can understand it.
Furrow– a shallow little row in the soil for planting seeds.
Indent– to make a shallow dent in something.

Critical Thinking Activity	None
Supplementary Activities	None
Web Resources	5-A-Day fruits and vegetables: www.5aday.com/html/educators/insights.php
Suggested Books for Reading in the Classroom	<ul style="list-style-type: none">• Creasey, Rosalind. <u>Blue Potatoes, Orange Tomatoes: How to Grow a Rainbow Garden</u>. Sierra Club Books for Children, 1997.• Kuhn, Dwight. <u>More Than Just a Vegetable Garden</u>, Silver Press, 1990.

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EALR & GLE Alignment

EALR	GLE	Lesson Applications
<p>Science</p> <p>1.2 Understand how components, structures, organizations, and interconnections describe systems</p> <p>1.3 Understand how interactions within and among systems cause changes in matter and energy</p> <p>2.1 Developing the knowledge and skills necessary to do scientific inquiry</p>	<p>1.2.1 Understand that things are made of parts that go together</p> <p>1.3.8 Understand that living things need constant energy and matter</p> <p>2.1.2 Understand how to plan and conduct simple investigations following all safety rules</p>	<p>The following apply to all Science GLEs:</p> <ul style="list-style-type: none"> Plan and Plant an Indoor Vegetable Garden
<p>Health and Fitness</p> <p>1.4 Understand the relationship of nutrition and food nutrients to physical performance and body composition</p> <p>2.2 Understand the concept of control and prevention of disease</p> <p>3.3 Use social skills to promote health and safety in a variety of situations</p>	<p>1.4.1 Identify the nutrients provided by a variety of foods and describe how bodily functions and physical performance are affected by food consumption</p> <p>2.2.1 Identify and demonstrate skills that prevent and reduce the risk of contracting and transmitting communicable diseases</p> <p>3.3.1 Express emotions constructively and form safe and respectful relationships</p>	<ul style="list-style-type: none"> Healthy Snack: Carrots and 3 Cups of fruits and vegetables a day Hand Washing and following safety rules Planting an Indoor Vegetable Garden (in teams)
<p>Communication</p> <p>1.1 Focus attention (Listens for a variety of purposes and sustains attention)</p> <p>1.2 Listen and observe to gain and interpret information</p> <p>3.1 Use language to interact responsibly and effectively with others</p> <p>3.2 Work cooperatively as a member of a group</p>	<p>* GLE not available at this time</p>	<p>The following apply to all Communication EALRs:</p> <ul style="list-style-type: none"> Plan and Plant an Indoor Vegetable Garden Healthy Snack: Carrots and 3 Cups of fruits and vegetables a day

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Preparation Outline

Activity Supplies

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Garden Map

- Blank white paper for students to draw garden plan (1 per learning team)

Indoor Vegetable Garden

- ⊗ 6-1 gallon plastic containers (1 per learning team)
- ⊗ Potting Soil
- ⊗ Trowel (or use hands)
- ⊗ Variety of seeds (lettuce/salad greens, radish, kale, beets, spinach, etc)
- ⊗ Small paper cups labeled with seed name (it is easier for small fingers to pull seeds out of a paper cup instead of seed packets)
- ⊗ Empty seed flats to collect water from plastic jugs
- ⊗ Popsicle sticks
- ⊗ Watering can

Healthy Snack

- 1 pound bag of baby carrots per classroom, with 3 Cups put into a plastic baggie to show minimum required daily amount of fruits and vegetables.

Review

- Classroom Tasting Challenge checklist

Overheads	None
Student Handouts	Blank white paper for each team to map their gardens
Teacher Handouts	None
Changes for K and ELL Classes	Have all students do planting activities together with you while you model each activity.
Rainy Day Activity Supplies	None

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Outline

Content

Introduction and Lesson Overview (2 Min)

Plan and Plant an Indoor Vegetable Garden (40 Min)

- **Planning the garden**
- **Show example of 3 Cups: Carrots**

- **Planting the garden**
- **K,ELL and 1st graders should do all activities together with educator**



Today in class you will:

- Plan and plant your team indoor food gardens.
- Your teacher will give you carrots as a snack after class.

- Explain to class what gardening will be like in the coming weeks - we'll be planting indoors and outdoors. Today each learning team will plant an indoor garden into one container.
- Discuss Plant needs: water, food, light, space, air
- Explain to class that we are growing vegetables for them to eat so they can learn to increase the amount of vegetables they eat every day. Everyone needs to eat at least 3 Cups of Fruits and Vegetables every day. Show the class the baggie with 3 Cups of carrots, and tell them that this is what 3 Cups looks like. Explain that you probably would not eat 3 Cups of carrots in one day, but you might eat some carrots at lunch, and some other fruits and vegetables like apple slices, or a banana for a snack and lettuce at dinner, and all together the fruits and vegetables you eat in one day should equal 3 Cups.
- List 5-6 different vegetables on the board that they can choose from for their indoor garden plan.
- Draw a sample plan of an indoor garden jug and a sample choice of what would go in it. Educator draws a sample on the board of a bird's-eye view into the jug (draw lines for rows, and write name of each plant on each row).
- In learning teams students work together to choose three vegetables they want to plant, decide where they will plant each type of vegetable, and draw a map of their garden jug.
- Make popsicle stick labels: have students write on these and label their furrows before planting.

Planting Introduction

- **Spacing of Seeds:** Explain that when we plant inside, the plants are not going to grow to full maturity, so we can plant them closer together than we would if we were planting outside. Ask questions such as, "How much space do you think lettuce needs to grow big." Explain that we will be planting our seeds very close together and snacking on the "baby-sized" leaves of the plants. When harvested, the leaves will be about

<ul style="list-style-type: none"> • Wash Hands 	<p>the size of baby spinach or baby mixed salad greens sold in grocery stores.</p> <ul style="list-style-type: none"> • Explain Planting procedures: Each team will plant 20 seeds. Demonstrate each job in front of the class. • Give each child a number corresponding to a job, and model each job before planting with students. • Fill the jug with soil: Have a student come up to the soil bucket and scoop potting soil into the jug, tapping its base on the desk in order it to settle the soil. Return to team. • Make furrows in the soil: Gently smooth the top of the surface of the soil with one hand. On the surface of the soil with the edge of your hand, push, or indent into the soil approximately ¼". This is as tall as your pinky laying sideways in the soil. Make 3 furrows, one for each type of seed. Do not make furrows too deep or the seeds will get buried too deeply and not be able to sprout. • Pass out seeds: One student puts one type of seed into their own palm, and with thumb and forefinger, gives a seed to each student in their team. Repeat for all three types of seeds. • Each student plants seeds: Each student plants 5 seeds. • Cover up seeds with soil • Label each row: Make labels on popsicle sticks of vegetable names. <p><u>Hand Washing</u> Remind students that they need to wash their hands after gardening. Each student should wash his or her hands with warm water and soap for 20-25 seconds.</p>
<p>Maintaining the Indoor Vegetable Garden (10 Min)</p>	<p><u>Grow Lamps</u></p> <ul style="list-style-type: none"> • Explain that we are using lamps - which only approximate the sun. They need to hang very low, just one inch from the leaves of the plant. <p><u>Watering indoors</u></p> <ul style="list-style-type: none"> • Make sure to keep plants watered, but not over-watered. Seeds are very small, and they need to stay moist in order to sprout, but they also could get lost in the soil if they get too much water. • Demonstrate in front of class that water can be seen trickling down through the plastic jug, turn jug around so class can see all sides and see water flowing down to the bottom of the jug. • We should water each jug until it is wet all the way to the bottom.

	<ul style="list-style-type: none"> • Tips: When pouring water, count to three and stop in between watering, use a circular motion while pouring water from watering can. • Demonstrate to each team at their table how to water with the watering container that the teacher has made for the class.
<p>Healthy Snack: Carrots (2 Min)</p>	<ul style="list-style-type: none"> • Show the carrots and ask students which food group carrots are in (Vegetable). Remind students that they need at least 3 Cups of fruits and vegetables each day to stay healthy. Explain that fruits and vegetables are healthy snack choices. • Explain that you are leaving the carrots with their teacher for their snack. Ask them to remind their teacher to serve them the snack.
<p>Review and Reflection</p>	<ul style="list-style-type: none"> • Indoor Gardens: Have class report on the progress of their seeds and ask them to make a few observations. Talk about what to do next with the indoor plants (this may include thinning, changes in watering patterns, etc). • Conduct the Classroom Tasting Challenge: After tasting the <u>carrot</u> snack, ask students to raise their hands to show you how many students tasted, liked or did not like the snack. Record the number of students who raise their hands in the appropriate column on your Classroom Tasting Challenge checklist, out of the total number of students in class that day.