

My First Garden

Rodale Institute's Guide to teaching children where their food comes from and starting a school garden

Key Components:

- Organic Gardening
- Sensory Exploration
- Cooking and Recipe Development
- Family involvement

Introduction:

Welcome to Rodale Institute's "Head Start Healthy Start" curriculum!

About us: Rodale Institute was founded in 1947 by J.I. Rodale and is considered the birthplace of organic agriculture in this country. After World War II, chemical pesticides became a significant input in our food production systems; Rodale's own health struggles inspired him to analyze the agricultural systems of the times and begin researching how the foods that we put into our bodies can have an impact on overall health. It seemed to him that ingesting food contaminated with toxic chemicals used to kill pests or boost soil fertility must have some negative repercussions on environmental and human health and that there must be a positive alternative to raising food in a way that supports both environmental and community health. Today we know this to be true.

Seventy years ago, he wrote his simple philosophy on a blackboard: "Healthy Soil = Healthy Food = Healthy People." This has become the mantra behind the research conducted at Rodale Institute and it has become our goal to share these ideals and scientific data with the global community to promote organic agriculture practices free of synthetic chemicals, inform the public about the true costs of our food system, and encourage consumers to support a healthier, more sustainable system by choosing organic. [Click here for more information about our work and research projects.](#)

This curriculum is meant to introduce these ideas to young children in a way that is fun and makes sense to young minds. Using hands-on, sensory lessons to understand where food comes from and how it grows can have an impact on a child's food choices that can last their entire lives. Children feel a sense of pride and ownership harvesting and preparing food that came from the seeds they planted, and they become excited about tasting fresh vegetables without being convinced. In addition, it is a wonderful project that teachers can utilize to introduce students to science, reading, and teamwork.

We hope that you enjoy this program and encourage you to share your experiences, photos, and suggestions with us to make Head Start Healthy Start easy, effective, and fun for more teachers to incorporate into their classrooms.

Lessons 1: Where does our food come from?

- Objective 1: Teach children what plants and animals need to survive
- Objective 2: Teach children different parts of plants
- Objective 3: To understand the connection between plants, animals and food that we eat.

Activities:

Activity 1: What plants need: Draw a diagram of a plant on your white board. Hand out flash cards with pictures of things that plants may or may not need to grow. Children place them either with the plant or away from plant diagram depending on whether it is a plant survival need. The coloring page reinforces the lesson.

Materials: Magnetic white board; dry erase markers, flash cards, magnets with adhesive back for cards.

Lesson Help:

This activity is meant to help children understand that plants are alive (like they are!) and that they need similar things to survive such as food, water, and air. The students will become stewards of plants' lives through their garden. This lesson will help them understand what is essential for plants to thrive.

There are four main elements to plant survival that the children should be able to identify and why.

- 1) **Sun:** Plants need food to grow, just like us. Where do they get this food? Plants have a special relationship with the sun. When the sun shines on plants' leaves, the plant uses special organs that help to change sunlight into food that the plant needs to grow. This is called photosynthesis.

If a plant was in a dark closet, it would not be able to make the food that it needs grow and it would not grow strong.

- 2) **Water:** Like people, plants need water to drink! When we are out playing in the hot sun, we get thirsty; water helps to refresh and replenish the liquids that we need to feel energized and happy. Plants need water in this same way; on a very hot day, a plant without water will start to look and feel droopy, it needs water to be refreshed and happy.

When we eat a meal, we need a drink of water to help our body use the food for the energy we need. Plants need water in this same way; water helps a plant to process sunlight into food.

Ever notice how juicy some fruits are? This comes from the water that the plant drinks while the fruit is forming!

- 3) **Soil:** Soil is not just dirt. Soil is also made up of food/nutrients, minerals, and water that the plant needs. Soil is the place where a plant's feet or roots are buried helping the plant to stand up strong. Plant roots also have a special ability to absorb water or food from the soil that the plant needs to be healthy.

The soil is also full of life! Some living creatures we can see like earthworms, and some are so small that we can only see them when we use a special tool called a microscope. But all of these creatures in the soil help to make plants happy and healthy. They can create air space and food underground that the roots send to the rest of the plant.

- 4) **Air:** Plants are living things and they need to breathe air just like we do. They breathe through their leaves. If you put a plant in a glass jar with no air holes, it would not survive when the air is used up.

Plants also need air space around their roots and their bodies to be healthy. If plants are too crowded together, they may get sick or diseased.

Activity 2: Eating plant parts: Draw diagram of plant on magnetic white board. Discuss different parts of plant and label with children: root, stem, leaf, fruit, flower, seed.

Then hand out flash cards with images of different vegetables and fruits. Children will identify picture, then post it up on the plant diagram to indicate what part of plant the food is that we eat. Discuss other ideas of different foods that relate to different plant parts.

Materials: Magnetic white board, markers, flash cards. (You can also make your own by using pictures from seed catalogues!)

Here is a guide to different parts of plants that we eat:

Roots	Stems	Leaves	Flowers	Fruits	Seeds
Beets	Asparagus	Cabbage	Broccoli	Peppers	Corn
Carrots	Celery	Kale	Cauliflower	Cantaloupe	Green Beans
Garlic	Scallions	Lettuce	Artichoke	Cucumber	Peas
Onions		Parsley		Eggplant	Sunflower seeds
Potatoes		Cilantro		Pumpkin	Popcorn
Radish		Collards		Squash	Chick peas/Garbanzo beans
Scallions		Spinach		Tomatoes	
Sweet potatoes				Watermelon	
				Zucchini	

Activity 3: Where does it come from? Discuss with children how a lot of our food comes from animals. Then play a game that matches images of different animal products to their source (ex. chickens/eggs; cows/milk; bees/honey). Use magnetic flash cards. Tack up pictures of animals and pictures of their products. Invite children to come up and draw a line between the animal and the food that they give. Use different colors for different animals.

Materials: Magnetic white board, dry erase markers, magnetic flash cards with pictures of animals and animal products.

Read: The Tiny Seed by Eric Carle

Craft: Connecting plant parts: Cut out different parts of plants (roots, stem, leaf, flower, fruit). Children will glue them together. Can label parts for additional activity. OR use wax “Wikki Stix” or pipe cleaners to make different parts of plants, then glue to paper. Additionally, students could glue bean seed to paper or a paper plate. Students will draw roots, stem, leaves, flower, fruit.

Materials: Paper plates, construction paper, crayons, wikki stix, pipe cleaners, glue sticks, bean seeds.

Taste: Taste different foods that come from different plant parts. For example: celery/stem; carrot/root; snap peas/seed; lettuce/leaf.

Note: Remember to always check in with student allergy limitations before making snack!

Activity 4: What does organic mean? Healthy soil = Healthy food = Healthy people.

Objective: Children understand the difference in organically grown food and the importance to our health & the environment.

Activities:

1. Look at the diagram of healthy soil and talk about the life in the soil that helps everything grow: microscopic organisms, worms, insects, and more! Explain the idea that using poisons to kill bugs or weeds can also kill the “good” organisms too.
2. **Read:** Diary of a Worm by Doreen Kronin

Helpful Hints: We have already discussed how important healthy soil is to the life of plants. Healthy soil is more than just dirt, remember it contains all kinds of life and living creatures that work together with plants to help them grow to be healthy. Healthy plants growing in healthy soil produce lots of healthy food for people and other animals.

Some farmers and gardeners spray bug killers on their plants because they think they are protecting the food they are growing. The problem with this is that these sprays not only kill the bugs that eat the plants, but they also kill the creatures that help the plants to be healthy both in the soil and the air.

Earthworms create air and add nutrients to the soil to help the plant grow to be healthy. Bees and butterflies visit and pollinate flowers, which helps the plants to produce their fruits. If we spray these plants with “bug killers” these important creatures could also be harmed.

Lesson 2: How does a seed grow?

Objective: Teach children the life cycle of a seed and what it needs to grow into a plant.

Activity 1: Being a seed: (Activity adapted from *How's it Growing: A How to Guide for Starting a Farm to Preschool Program*)

Materials: Spray bottle with water, raisins.

Guided activity where children become the seeds: germinate, grow, fruit and drop seeds again. Teachers will use the following instructions to guide students through the act of “being a seed.” Students will have the chance to pretend they are a seed and go through the life cycle of that seed.

Begin the activity by having students imagine that they are a seed: what seed would they be and why? Next, have students find a comfortable space on the floor to “plant” themselves and then begin by reading the following out loud while the students act out the directions:

- Plant yourself in a comfortable spot. What kind of seed are you?
- It's fall and seeds are getting ready for a long winter's rest (*curl up into a tiny seed*).
- Each seed has its own supply of food inside to help start to grow in the spring (*have students hold one hand out and place raisins (food) in their palm - don't eat yet! Hold on to your food tight!*).
- In order to survive the long, cold winter, the seed must save its food until spring arrives once again.
- Winter has come (*turn off classroom lights*).
- The seed is tucked safely below the ground and snow, resting for the winter (*have a quiet moment*).
- Finally, the days are starting to get longer and warmer and now its spring! The soil is getting warmer and the seeds are *slowly* starting to wake up (*begin to wiggle your toes and fingers, gently rock your body back and forth, but don't get up yet!*)
- The warm spring rains are starting to fall which makes the seeds very happy (*walk around and gently squirt each student with the squirt bottle. Once sprayed, students can poke out a little root (their leg or arm) to soak up the water and show a big smile*)
- The days are getting warmer and warmer. The soil is getting warmer and the seeds get to use their food that they have been holding on to all winter long. (*students can uncurl and eat their raisins*).
- Now the seeds have the energy to sprout and grow from the ground (*on the count of three, students can stretch their arms upward. Turn on the lights*)
- The seeds have turned into baby plants and are starting to grow taller and taller each day (*students can slowly rise to a standing position*).
- Your leaves are stretching out to gather the sunlight, you begin to gently sway in the breeze and enjoy the sunlight (*students can slowly rock back and forth, swaying in the breeze*).
- The seasons have changed again, and it is finally summer! The plants begin to form flowers (*students can make a circle above their heads and show off their flowers*).
- The flowers need to be pollinated by bees and other insects (*teacher will buzz around to each student and pretend to pollinate their flowers*).
- Where there was a flower, a fruit begins to grow (*students can widen their arms to show their fruit growing bigger and bigger*).

- The seasons are changing yet again, and summer is coming to an end. Fall is in the air now - it is getting cooler. The leaves on the trees are changing and now the leaves on your plant are starting to fall off (*students can flutter their arms to show their leaves falling to the ground*).
- Your fruit also falls to the ground and breaks open (*students can fall to the ground with a "plop"*).
- What do we find inside your broken fruit? Seeds! What will happen to your seeds? They will get ready for a long winter's rest and the cycle will start again.

Read: The Carrot Seed by Ruth Krauss

Activity 2: Starting Seeds

Objective: Children understand how to plant a seed and care for plants.

Materials: 6 packs (or other recycled containers), tray, domes, seeds, soil (pro-mix), spray bottle, popsicle sticks, crayons, glue sticks, pictures of vegetables.

Activities:

- 1) **Seed Starting:** Cold weather: lettuce, peas, radishes, spinach, kale, pac choy, cilantro, other herbs or edible flowers.
Summer: tomatoes, cucumbers, pole beans, zucchini, carrots, sunflowers, pumpkin.

If using 6-packs, make groups of six children. If using individual recycled containers (yogurt cups, paper cups, etc.) make sure to poke a pencil-sized diameter hole in the bottom first for drainage. Fill containers with soil mix; it's ok to fill it to the top since the mix will settle over time and with watering. Each student should choose their seeds; bigger seeds like peas, beans or squash are easier to handle for little hands. Recommendation: give each group or table 2 to 3 choices only to facilitate the activity.

Children should poke a hole in the soil for planting the seed. The standard rule of thumb is that the hole should only be as deep as twice the size of the seed. So a large bean seed might be ½" - 1" deep, but a tiny lettuce or kale seed would be only just under the surface.

Cover up the seed with soil. Use a spray bottle to water. This will avoid spills and make it easier for young children to care for their plants.

Create labels with popsicle sticks immediately. Glue small pictures of vegetables to popsicle sticks and decorate using crayons.

- 2) **Let's Sprout!** Growing sprouts is fun and tasty, and children can see the different stages of seed germination.

Materials: Quart size mason Jars (2); screw on screen lids (usually available at health food stores); organic sprout seeds (alfalfa, clover, sunflower, broccoli, kale, all work well); tray for drainage; access to water daily.

Pour seeds into bottom of mason jar, just enough to cover the bottom (they expand to hundreds of times their size!) Fill jar with water and screw on screen top. Let it sit overnight. In the morning, drain the water through the screen top into a sink. Then fill up with water again and immediately drain. Prop jar in drainage tray on a 2-3" tall

block so it rests at a 45-degree angle and excess water drains into tray. Continue to rinse 1 -2 times a day (morning and late afternoon). Jar and tray can be set in full or partial sun.

Observe with children as root starts to sprout and eventually first small leaves. When first 2 leaves have emerged, sprouts are ready to eat! Remove from jar and place in bowl. Let soak in water briefly and gently agitate in water to remove seeds. Remove sprouts from water to drain in colander. Serve on toast or wraps with cream cheese!

Read: Up, Down and Around by Katherine Ayers

Taste: **Seedy snack.** Sunflower seeds, pumpkin seeds, hummus dip with peas and green beans.

Sample Recipes:

Easy Hummus Recipe

PREP 10 mins

TOTAL 10 mins

Makes 6 servings or about 1 1/2 cups

YOU WILL NEED

1 (15-ounce) can chickpeas or 1 1/2 cups (250 grams) cooked chickpeas

1/4 cup (60 ml) fresh lemon juice (1 large lemon)

1/4 cup (60 ml) well-stirred tahini

1 small garlic clove, minced

2 tablespoons (30 ml) extra-virgin olive oil, plus more for serving

1/2 teaspoon ground cumin

Salt to taste

2 to 3 tablespoons (30 to 45 ml) water

Dash ground paprika, for serving

Food Processor

DIRECTIONS:

- In the bowl of a food processor, combine the tahini and lemon juice and process for 1 minute, scrape the sides and bottom of the bowl then process for 30 seconds more. This extra time helps “whip” or “cream” the tahini, making the hummus smooth and creamy.
- Add the olive oil, minced garlic, cumin, and a 1/2 teaspoon of salt to the whipped tahini and lemon juice. Process for 30 seconds, scrape the sides and bottom of the bowl then process another 30 seconds or until well blended.
- Open, drain, and rinse the chickpeas. Add half of the chickpeas to the food processor and process for 1 minute. Scrape sides and bottom of the bowl, then add remaining chickpeas and process until thick and quite smooth; 1 to 2 minutes.
- Most likely the hummus will be too thick or still have tiny bits of chickpea. To fix this, with the food processor turned on, slowly add 2 to 3 tablespoons of water until you reach the perfect consistency.
- Taste for salt and adjust as needed. Serve hummus with a drizzle of olive oil and dash of paprika. Store homemade hummus in an airtight container and refrigerate up to one week.

NUTRITION PER SERVING: Serving Size 1/4 cup / Calories 190 / Protein 6 g / Carbohydrate 18 g / Dietary Fiber 5 g / Total Sugars 3 g / Total Fat 11 g / Saturated Fat 2 g / Cholesterol 0 mg

Sunflower Seed Brittle (could also use pumpkin seeds!)

Servings: approx. 50 pieces

Ingredients

- 3 tablespoons unsalted butter
- 1/2 teaspoon salt
- 1/2 teaspoon cinnamon
- 1 teaspoon vanilla
- 2 cups salted dry roasted shelled sunflower seeds
- 2 cups sugar

Directions:

- Generously spray or butter a large baking sheet and set aside. Or, place a silpat mat in a large baking sheet--no buttering required.
- In 1.5 or 2 quart saucepan, melt butter on low heat; add salt, cinnamon, vanilla and sunflower seeds and stir to evenly coat seeds with butter mixture. Keep stove at lowest setting, stirring occasionally so that all of the seeds remain warm but don't scorch on bottom of pan.
- Add sugar to large (12 inch) heavy skillet over medium heat. Stir the sugar constantly. As you stir, you will see the sugar begin to melt and form clumps. Gradually, the clumps will start to melt and stir into a smooth, amber brown syrup.
- As soon as the last lumps melt into the syrup (this takes approx. 10-15 min.), add the warm nut mixture and stir to combine. Work quickly so the mixture doesn't burn. Immediately, pour onto prepared baking sheet. Use a silicone or wooden spatula to quickly spread the mixture into a thin, even layer.
- Let cool completely and break into pieces. Store in airtight container.

Follow up:

- Create a rotating chart where children can take turns watering their plants every day.
- Each child can create a Plant Journal to encourage their observation and involvement in the project. They should visit the plants each day and draw pictures of what they see, measure size, or make other notes.

Lesson 3: Planting the garden

Objective 1: Children will explore the soil with tools, should understand how to move carefully and respectfully through the garden using pathways, and understand the difference between where to walk and where plants grow.

Objective 2: Children will learn to be mindful and use delicate actions to plant baby seedlings.

Materials: Raised beds, containers, other planting space; compost/soil; trowels, rakes, shovels, wheel barrow, stepping stones, watering cans/hose, labels, row cover (for frost), stakes and twine (for beans or tomatoes). Use tools that are the appropriate size for the students.

Activities:

1. **Preparing the garden:** Raised beds should be built, or containers set in place, ahead of time. They should also be at least $\frac{1}{2}$ to $\frac{3}{4}$ full of soil before involving the class. Otherwise, this step could take several days before ready to plant. Children can help fill the last bit of soil into the beds, to feel connected to this part of the process, but too much heavy lifting will likely tire them out. Use small wheel barrows or small buckets that are an appropriate size for them.

Children can also use rakes and trowels to explore the soil and prepare the surface for planting.

2. **Follow the leader:** Walk around the pathways so children understand the appropriate place to walk and where plants need space to grow. Make it into a fun game doing different types of walks and movements. This circuit should be repeated enough times that the children do not have to think about where they should and should not walk.
3. ***Transplanting the garden:** Each child will plant a seedling with help from an adult who will remove it from its container.

Children will dig a hole about two times the size of the container holding the roots of the plant. They will use a watering can or hose to fill up the hole with water.

An adult will then remove the plant from the container. New seedlings are very delicate; the best strategy is to grasp the plant firmly from the thick part of the stem as close as possible to the soil level. With the other hand, tip the container so it is sideways or upside down. It may help to squeeze the container a little to loosen the roots and remove the whole plant. You want to make sure that the majority of the roots are intact when removing. It is ok to plant the whole soil block into the hole. Place the seedling in the hole. The child will then cover up the roots with the surrounding soil. Transfer the popsicle stick label into the garden with the plant.

*It is helpful to have some backup transplant resources in case there are any growth issues with classroom plants.

4. **Rock on! Labels for the garden.** Painting rocks to label garden plants with words or pictures. Collect some palm-sized rocks. Paint them white or another solid color and allow them to dry overnight. Then decorate them using colorful paint or crayons with pictures of veggies or words that describe the crop planted. Let dry overnight if necessary, then set into the garden.

Materials: Several palm-sized rocks, acrylic paint, paint brushes, crayons.

5. **Mulching:** Use straw, dried leaves or grass clippings to spread around the garden to protect plants and keep weeds out.

Materials: Straw, dried leaves, or grass clippings; gloves, rakes.

6. **Protecting Plants:** Depending on your site, you may need to protect your garden from wildlife such as birds, groundhogs, rabbits, or deer. Birdnetting can be very effective for this job. Pin the netting at the edge of the bed and over the seedlings using ground staples. It may be necessary to use many layers depending on the type of pest pressure you are experiencing.

Read: Two Little Gardeners by Margaret Wise Brown

Taste: Veggie pockets with local organic cheese (perfect use for sprouts!) Or organic apples and honey.

Sample Recipe: Veggie Pockets

This recipe is simple and very flexible! It is fun to have the children build their own (with some help, of course!)

Ingredients:

- Pita pocket bread cut into small triangles for tasting.
- Cheese: cream cheese or sliced cheese work equally well.
- Selection of veggies: sprouts, sliced cucumbers, chopped lettuce or raw spinach, shredded carrots, diced peppers, halved cherry tomatoes, etc.

Arrange all ingredients on separate plates to create a Make-Your-Own Veggie Pocket buffet. If using cream cheese this could also be pre-spread on the pitas for ease.

Children choose their ingredients and build their pockets on their plates!

Tips for success:

- Assign a teacher or parent to coordinate ongoing maintenance like daily watering and weeding.
- Make a small list of rules that children need to follow when participating and visiting the garden. View our sample Safety Tips and Safety Contract.
- Children should continue working on their plant journals and record their observations in drawings or notes.

Lesson 4: Harvest and Tasting Party! Invite the whole family to come and share in the tasting.

Objective 1: To encourage children to try new healthy foods.

Objective 2: Introduce children to cooking and food preparation skills.

Objective 3: Involve parents and other family members in food choices and exploration.

Materials: Scissors, baskets/bags, mixing bowls, recipe ingredients, knives, sink and water for washing produce, strainer, cutting board.

Activities:

1. **Harvesting the garden:** Observe the garden and talk about how we know when a plant is ready to pick and eat. Explain that even though we are picking part of the plant to eat, usually the whole plant lives on so we must be careful when pulling off a leaf or fruit or pod that we do not pull out the roots.

Using hands or scissors, pick lettuce & spinach leaves; pull radishes from ground; pluck off pea pods, etc. Put harvest into a bowl, basket or bag to bring inside.

2. **Making a salad:** Bring bowl of harvested leaves inside. Children will wash the leaves, with the help of an adult, by filling up the bowl with water and moving the leaves around to loosen any soil. They will remove the leaves and place them in a strainer to drain in the sink. Then children will rip leaves into small pieces and place in the bowl.

Remember: it is very important to teach children the best way to wash hands before handling food. Use warm water, soap hands and sing the "ABC's" twice through while rubbing together, then dry with disposable paper towel.

3. **Make salad dressing** (ranch or vinaigrette): children will mix ingredients and shake up jars to combine.

Sample Recipe: Ranch Dressing

Ingredients:

- 1/2 cup mayonnaise
- 1/2 cup sour cream
- 1/2 cup buttermilk or regular milk
- 3/4 - 1 teaspoon dried dill weed
- 1/2 teaspoon dried parsley
- 1/2 teaspoon dried chives
- 1/4 teaspoon onion powder
- 1/2 teaspoon garlic powder
- 1/4 teaspoon fine sea salt
- 1/8 teaspoon finely cracked pepper
- freshly squeezed lemon juice to taste, approximately 1-3 teaspoons, adjust to taste

Instructions:

Whisk together the mayo, sour cream and milk until smooth. Add the spices and whisk until combined. Add the lemon and whisk again. Pour into a jar and chill in the refrigerator until ready to serve. This dressing will keep nicely in the refrigerator for up to a week. Enjoy!

4. **Sautéed Greens:** This is great for kale, spinach or pac choi and only takes about 5-10 minutes total time.

Ingredients:

- 1 tbs olive oil
- 1 garlic clove
- ½ lb - ¾ lb of greens (nice sized bunch)
- Salt and Pepper

Wash and chop up greens finely. Mince or press garlic. Heat olive oil in medium to large pan and then drop in garlic until fragrant (about 30 seconds). Add greens and stir gently until coated with oil. Add a pinch of salt and pepper to taste. Continue stirring until wilted but still bright green. Serve topped with sunflower seeds, parmesan cheese or just plain. Also delicious mixed in pasta, rice or couscous.

5. **Share with the family!!**

Lesson 5: Field Trip to the Farm

Objective: To encourage children to make the connection between the farm, their own garden, and where their food comes from.

Now that your class has become small farmers and they are beginning to understand how food gets to their plates, take a field trip to a local organic farm and see how the professionals do it on a larger scale! Students are fascinated by visiting the farm; many children, especially those raised in urban settings, have never been exposed to a farm environment. New sights, sounds, smells, and even tastes on the farm can be imprinted in young memories for the rest of their lives affecting the way that they understand where food comes from, how it is raised, and the dietary choices that they make.

There are many small organic farmers who incorporate education and agritourism into their operations because the more that people understand the importance of eating organic, the better it is for their business!

Check out these resources to find an organic farm in your region:

- o Organic Integrity Database: <https://organic.ams.usda.gov/Integrity/Default.aspx>
- o Local Harvest: <https://www.localharvest.org/>

Additional Resources:

Timing:

The timing of the Head Start Healthy Start curriculum can be very flexible to suit your needs or regional climate. However, as with any educational unit, planning is very important for success and maximum benefits.

The program can be conducted in the spring, summer or fall depending on what works best for you and your class. The most important part of your scheduling will be starting your seeds (Lesson 2) in order to reap the harvest in a timely manner that coordinates with your school calendar and regional weather conditions. The rest of the curriculum will fall into place around these criteria.

Spring Program

For the spring, fast-growing, cold-hardy crops such as lettuce, kale, radishes, Swiss chard, spinach, cilantro, peas, baby salad mix, and bok choy are recommended. If you live in a temperate region, the first thing that you need to research is your last frost dates. You should plan to start your seeds in the classroom (Lesson 2) two months before that date.

For example, if your last frost date is May 1st, plant your seeds by March 1st. In this timeline you will begin teaching Lesson 1 of the curriculum one to two weeks before starting your seeds (mid to late February). You will also need to transplant into your outdoor garden (Lesson 3) as close as possible to this last frost date (or earlier if you plant cold hardy crops_ so you can collect the harvest and have your tasting party (Lesson 4) before the students are dismissed for summer vacation.

Sample May 1st Frost Date Calendar:

- Lesson 1: mid-late February
- Lesson 2/seed starting: March 1st
- Lesson 3/transplant to garden: early to mid-April (when plants have two sets of true leaves). Use row cover or plastic to protect plants from frost if necessary.
- Lesson 4/harvest and tasting party: late May before end of school
- Farm field trip: early May

Fall Program

The nice thing about conducting the program in the fall is that if you start in late August or early September, you actually have more time to let your crops mature depending on your bio-region. In the fall, fast-growing, cold-hardy crops such as lettuce, kale, radishes, carrots, Swiss chard, spinach, cilantro, peas, baby salad mix, and bok choy are also recommended. If you live in a temperate region, you need to research your first frost dates. You should plan to start your seeds in the classroom (Lesson 2) at least two months before that date.

First frost date of November 1st Sample Calendar:

- Lesson 1: late August/early September
- Lesson 2/seed starting: September 1st or earlier
- Lesson 3/transplant to garden: late September/early October (when plants have two sets of true leaves). Use row cover or plastic to protect plants from frost if necessary.
- Lesson 4/harvest and tasting party: early November.
- Farm field trip: October

Summer Program:

When conducting this program in the summer, heat-loving crops are recommended such as beans, cucumbers, zucchini, tomatoes, peppers, and basil. These varieties are tender and will not tolerate frost of any kind, however they do take longer to mature, so depending on the timeline of your summer program, it might make sense to start the plants that you will use in the garden long before the program begins, or buy seedlings to maximize efficiency of program timing during the hot season. The transplanting into the garden (Lesson 3) should happen immediately for a summer timeline so the plants have time to mature before the end of the program.

For Lesson 2 of a summer session it is recommended that the students do sprouting in the classroom. To get the experience of planting seeds, students can additionally start seedlings that could be planted in the summer to be harvested in mid-fall such as broccoli, cabbage, carrots, or beets. This is a good idea especially if some student participation rolls over from summer into fall. THESE SEEDS WILL NOT MATURE INTO EDIBLE CROPS BEFORE THE END OF THE SUMMER, USE THE HEAT-LOVING SEEDLINGS RECOMMENDED TO HARVEST FOR YOUR TASTING PARTY.

Sample Calendar:

Start seeds: mid-April

Beginning of summer program: June 1st - 10th

Lesson 3/Transplant outside: First week of summer program (after last frost)

Lesson 1: 1 week following transplant, June 8th - 17th

Lesson 2: 1 week following Lesson 1, June 15th - 24th

Transplant fall crops outside (if using): Mid-July, (when seedlings have 2 sets of true leaves)

Lesson 4/Harvest party: mid-August

Field Trip: June or July

Complete Materials Guide

Note that books can also be borrowed from the library to cut costs and that prices are estimations and may vary depending upon region.

Lesson 1: Where does our food come from?

Material	Quantity	Source	Approx. cost*
Magnetic white board	1	Office Depot/Staples	\$15.00 - \$25.00
Dry erase markers	1 set	Walmart/Target	\$3.50 - \$6.00
Flash cards	1 set	Download	Free
Sticky back magnets	1 pack	Office Depot/Staples	\$6.50 - \$10.00
Book: <i>The Tiny Seed</i>	1	Amazon	\$3.00 - \$7.00
Paper Plates	1/student	Grocery store	\$2.00 - \$3.00
Dry beans	1/student	Grocery store	\$1.50 - \$3.00
Construction paper	1 pack	Walmart/Target	\$3.00 - \$4.00
Crayons		Walmart/Target	\$1.00 - \$3.00
Glue Sticks		Walmart/Target	\$2.00 - \$4.00
Produce Samples	3-4 different tastes/student	Grocery Store	\$7.00 - \$12.00
Book: <i>Diary of a Worm</i>	1	Amazon	\$6.00 - \$9.00
Spray Bottle	1 -2	Walmart/Dollar store	\$3.00 - \$6.00
Raisins	1 box	Grocery	\$2.50 - \$4.00
Book: <i>The Carrot Seed</i>	1	Amazon	\$4.00 - \$6.00

Lesson 2: Starting Seeds

Material	Quantity	Source	Approx. cost*
*Seed trays: 6 packs with under tray and dome lid	Enough to start up to 50 plants	Garden store/ Hardware store/ Walmart	\$10.00 - \$15.00
Organic seed starter mix	1 bag	Garden store/ Walmart	\$10 - \$15.00
Organic vegetable seeds	3-5 varieties	Burpee (Walmart); Johnny's Selected Seeds http://www.johnnyseeds.com/ ; High Mowing Seeds https://www.highmowingseeds.com/	\$10.00 - \$20.00
Popsicle/craft sticks	1 pack	Walmart/Dollar Store	\$2.50 - \$5.00
Quart size Mason Jars	2	Grocery Store	\$2.00 - \$6.00
Sprouting Screen lids for jars	2	High Mowing Seeds; Health Food Stores	\$5.00 - \$10.00
Sprouting Seeds	2 varieties; 3 - 4 oz packets	High Mowing Seeds	\$5.00 - \$10.00
Book: <i>Up, Down and Around</i>	1	Amazon	\$6.00 - \$9.00
Seedy Snack	See recipes	Grocery Store	\$10.00 - \$15.00

*** Seed trays can also be crafted out of recycled materials such as milk cartons, juice bottles, Clementine crates, etc.**

Lesson 3: Planting the garden:

Options:

- **Build raised beds**
- **Use oversized containers**

Material	Quantity	Source	Approx. cost*
Raised Bed: 4' x 8' bed	1		
Wood (NOT PRESSURE TREATED)	3 @ 2" x 8" x 8'	Lowe's/Home Depot/Hardware store	\$24.00 - \$30.00
Fasteners: 3" – 3.5" wood deck screws	0.5 – 1 lb. box	Lowe's/Home Depot/ Hardware	\$7.00 - \$12.00
Drill			
OR			
Oversized containers	1 - 3	Lowe's/Home Depot/Garden Center	\$15.00 - \$50.00
Compost/Soil	1 – 3 yards; Dependent upon size of planting space	Garden Center; Many municipalities have free compost available at recycling centers	\$0 - \$100.00
Tools: Trowels, shovels, rakes,	5 – 8 trowels; 2-3 shovels; 2-3 rakes	Garden Center/Lowe's/Walmart	\$50.00 - \$75.00
Wheel barrow	1	Garden Center/Lowe's/Walmart	\$20.00 - \$30.00
Hose/Watering Cans	1/several	Garden Center/Lowe's/ Walmart	\$15.00 -40.00
Row Cover (frost protection)	10' x 50'	Johnny's Selected Seeds	\$35.00
Ground Staples (for row cover)	1 pack of 50	Lowe's/Garden Center	\$10.00 - \$15.00

Acrylic Paint (for rocks) & brushes	Several colors	Walmart/Target/Craft Store	\$10.00 - \$15.00
Book: <i>Two Little Gardeners</i>	1	Amazon	\$3.00 - \$6.00
Veggie pocket snack	See recipe	Grocery Store	\$15.00 - \$20.00

Lesson 4: Harvest and Tasting Party

Material	Quantity	Source	Approx. cost*
Scissors	4 – 8	Walmart/Target/Dollar Store	\$10.00 – \$15.00
Baskets or large mixing bowls to harvest into	3 – 4	Walmart/Target/Dollar Store	\$10.00 - \$15.00
Recipe ingredients	See recipes	Grocery Store	\$10.00 - \$15.00
Cooking utensils: Knives, colander, cutting board, measuring cups/ spoons, frying pans, mixing spoons, etc.	As appropriate	Walmart/ Target/ Dollar Store	\$10.00 - \$25.00
Plates, bowls, forks, napkins, for tasting	As appropriate	Walmart/Target/Dollar Store	\$10.00 – \$20.00