

Preschool Gardening Activity Guide

Natural Learning Initiative



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Introduction

From examining seeds to taking home

The *Preschool Gardening Activity Guide* is designed to expose young children to seasonal fruit and vegetable gardening in childcare centers. Based on the Preventing Obesity by Design (POD) model, the guide provides a resource for teachers to encourage children's physical activity and outdoor learning through gardening and related activities. The underlying goal is to counteract the early onset of health challenges associated with sedentary lifestyles, poor eating habits, and lack of contact with nature. The *Gardening Activity Guide* assumes that centers have already installed a designated, raised-bed fruit and vegetable garden and seek ideas about how to use it as a vehicle for learning. The *Gardening Activity Guide* provides a structured approach consisting of two main sections:

I. Gardening Activities

The *Gardening Activities* section contains three phases covering 12 garden-related learning processes:

PREPARING

1. Examining Seeds & Plants
2. Sprouting Seeds
3. Preparing Beds
4. Planting

CARING

5. Watering
6. Weeding
7. Observing Plant Growth
8. Observing Garden Bugs

HARVESTING & EATING

9. Harvesting
10. Preparing
11. Snacking
12. Taking Home

Each gardening process includes supporting activities to stimulate experiential learning inspired by the *North Carolina Foundations for Early Learning and Development* (2013). Appendix A contains the Our Gardening Activities Calendar, provided for teachers and children to record daily and weekly interactions related to each gardening process. Guided by the teacher, children are encouraged to see themselves as active participants in weekly documentation by checking off garden processes and recording activities.

II. Time to Harvest

The *Time to Harvest* section provides helpful tips for harvesting selected warm-season fruits and vegetables and cool-season vegetables in designated childcare center gardens. *Time to Harvest* covers how to evaluate the maturity of specific fruits and vegetables, judge their readiness for harvest, and ways to incorporate them in recipes or activities.

Childcare centers are encouraged to grow additional fruits and vegetables not covered here and continue inventing fun, engaging learning activities focused on gardening processes. Contact your local Cooperative Extension center to learn which fruits and vegetables grow well in your area.



Gardening Activities PREPARING

Examining Seeds & Plants

About life cycles and what plants do

Description

Examining seeds and plants can start a conversation about life cycles and motivate children to explore the living world around them. Together, we can begin taking steps in early science learning such as classifying; exploring shape, size, color and weight (see p.9), leading to the gradual acquisition of scientific knowledge.

Suggested Activities

Classifying Seeds

- Hunt for a variety of seeds outdoors using small cups to collect them.
- Gather inside to discuss where seeds come from and how they produce new plants.
- Ask children to examine and classify seeds based on shape, size, color, and weight.
- Sort the seeds according to source plant (tree, shrub, vine, ground cover, vegetable, fruit, or flower).
- Ask children: do vegetables have flowers?
- Examine seeds that will become plants in your garden.

Examining Plants

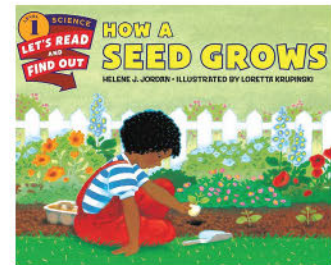
- Ask a local nursery or garden center to donate a few potted vegetable plants that are past their prime and unsellable. Explain that these plants will be used to educate future customers!
- In the classroom, divide children into small groups of three or four to a table and give each group a plant out of the pot to examine.
- Encourage children to examine different plant parts (root, stem, leaf, flower, fruit). Ask them to describe what they see and guess what each part does to help the plant grow.
- If possible, replant or compost the example plants.

Vocabulary

Different, Examine, Flower, Garden, Plant, Same, Seed, Tree

Book Suggestion

How a Seed Grows (Helene J. Jordan and Loretta Krupinski) teaches young children how little seeds can become the plants and trees that surround them every day! An informative read.



Fun Seed Facts

- Seeds contain three parts:
 1. A dormant, miniature plant (embryo)
 2. Food storage, which supplies nutrients for the embryo, including proteins, carbohydrates, or fats
 3. A seed coat that protects the embryo from diseases, insects, and moisture until it is time to germinate
- Proper temperature, moisture, oxygen, and light lead to germination. First, water is drawn in through the seed coat. Next, the primary root will emerge and eventually sprout root hairs and lateral roots. Then, the stem will emerge with the first leaves of the plant.
- Seeds vary greatly in size, shape, texture and color. A coconut can be as big as your head, but it is still a seed!

Oh, how seeds will grow!



Sprouting Seeds

Understanding how a seed becomes a plant

Description

Sprouting seeds helps children understand that seeds contain the miracle of life and that water must be added to activate it. By sprouting seeds, children can see how something so small can become enormous, like a tree. Four ways to sprout seeds are described below.

Suggested Activities

Method One: Cotton Ball Sprouting (Good for sprouting beans)

- Add a few damp (not soaked) cotton balls to a clean glass jar.
- Add four or five bean seeds.
- Place jar on window sill and keep cotton balls damp.
- Measure growth and observe daily as the seed transforms into a tiny plant.
- For guidance, visit teachpreschool.org/2018/06/17/planting-beans-in-the-science-center.

Method Two: Paper Towel Sprouting

- Place seeds on half of a damp paper towel.
- Fold the paper towel over to cover seeds and place in a plastic sandwich bag. Give seeds ample space to avoid crowding.
- Tape bags to a window to ensure they receive abundant sunlight.
- Check seeds daily until they begin to sprout.

Method Three: Sponge Sprouting

- Purchase cheap, thin sponges, cut each in half or quarters, dampen, and lay pieces flat on saucers.
- Distribute seeds (alfalfa, wheat berries, and chia seeds are best) to each child in plastic cups with a little water for children to spread on the sponges.
- Place sponges in a well-lit area near a window to encourage growth.

Method Four: Newspaper Pot Sprouting (For later transplanting)

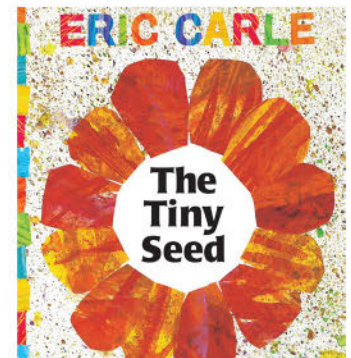
- Wrap a 6-inch strip of newspaper around an aluminum can, leaving 1 inch hanging over the edge. Secure the paper with masking tape.
- Fold in the newspaper that is hanging over the edge to create the bottom of the newspaper pot.
- Remove aluminum can before having children fill the pot with soil.
- Add desired seeds to the newspaper pot.
- Remove the tape before transplanting.

Vocabulary

Grow, Sprout, Sunlight

Book Suggestion

The Tiny Seed (Eric Carle) describes a seed's journey to becoming a flower. The story helps children understand the life cycle of a plant. During or after the reading, engage in a group discussion about the story.



Sprouting Tips

- Use high-quality seeds from a reliable source.
- Purchase only enough for one year as germination rates drop over time.
- Store extra seeds in a cool, dry, dark place such as an airtight container in the refrigerator.
- Do not allow seeds to dry out once germination has begun.

“I love to make plants!” (4-year-old)



Preparing Beds

Sensing and handling soil

Description

Preparing beds introduces children to high-quality, dark soil as a multi-sensory substance with a distinct smell and varied texture. What better way to learn about this intriguing material than by handling it? Encourage children to stick their hands in the soil to explore all the benefits that it can bring to the garden. Make sure hands get washed back inside.

Suggested Activities

Prepping from Last Season

- As the gardening season approaches, ask children to help clear the garden beds by pulling up weeds, dead plants, and debris.
- Explain the importance of weeding and how troublesome weeds can be in the garden.
- Discuss how recycling plants returns nutrients to the soil. If possible, compost old plant material. Do not compost weeds.

Digging in the Dirt

- Give the children small plastic trowels and hand-rakes to experience the pleasure of digging in garden soil.
- Discuss what the soil looks like, how it smells, and how it feels to touch. Encourage descriptive language.
- Describe the importance of soil for plant life and how fruits and vegetables receive water and nutrients from it. Ask the children to explain how the process works.
- Back in the classroom, ask children to draw a picture of how soil and water give life to plants.

Composting

- Start a classroom compost bin using a small resealable container.
- Prompt children to collect edible and natural material that can be composted and added to the container.

- Identify items that can and cannot be composted to enhance children's knowledge and to ensure compost won't be compromised.
- Add soil and water to create natural fertilizer. Periodically check compost bin and mix contents to aid decomposition. Once materials have decomposed, add compost to the garden.
- For more information, refer to the NLI/NC State Extension publication LOCAL FOODS: Childcare Center Production Gardens, 7. *Composting in Childcare Center Gardens* (<https://naturalearning.org/Gardening+Series>).

Vocabulary

Bed, Compost, Dig, Prepare, Rake, Recycle

Book Suggestion

Dig In! (Cindy Jenson-Elliott) highlights the many surprises children find when digging in dirt, including insects, stones, seedlings, and plants.



Soil Preparation Tips

- Conduct a soil test to learn what nutrients are needed. Contact your county Cooperative Extension Center for information on soil testing.
- Add 2.5 inches of organic matter and work into the soil.
- Once plants are installed, provide a 1- to 3-inch layer of organic mulch.

Feeding our soil to feed our planet!



4

Gardening Activities
PREPARING

Planting

Learning to nurture life

Description

Planting can begin with either seeds or transplants. Transplants are satisfying to use because the plant has already been nurtured by the children. Through planting, children start to take responsibility in caring for other living things. Ask if they have planted before and how it felt. Warm-season gardening starts after the last frost. Timing depends on the type of vegetable and whether it's grown from seed or transplant. Check with your local Cooperative Extension agency to learn more about planting calendars for your area.

Suggested Activities

Planting Seeds

- Discuss why it is much easier to grow some plants from seed, such as beans.
- Talk about spacing seeds so plants don't compete for growth. Use this analogy: if the children in the classroom had to share one cup of water each day, how would they feel?
- Distribute seeds in small cups and a pointed trowel to pairs of children.
- Discuss the best places to plant. One child drags a pointed trowel to create a shallow planting row. The other child, guided by the teacher, drops the seeds at intervals specified on the packet. Both children push a light covering of soil back over the seeds in the row.

Planting Seedlings

- Once weather permits, seedlings can be transplanted to outdoor raised beds. Use newspaper pot seedlings grown in the classroom or transplants from elsewhere.
- Review with the children how they started with seeds, sprouted them with water, grew seedlings in the classroom, and prepared the beds with good soil. Now the season has arrived for planting outdoors.
- Supply each child with their own seedling to plant and care for.

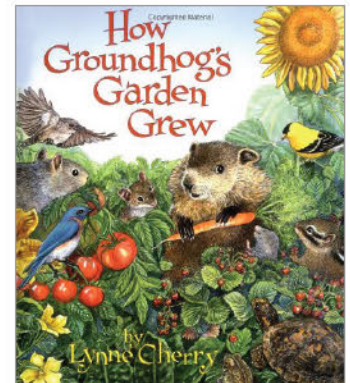
- Discuss what plants and children need to be healthy and grow strong. Is there anything plants need that children don't? And vice versa?
- Observe growing conditions such as sunlight, shelter, and protection from trampling. Ask children: why do we plant in raised beds?
- Ask children: why do we use mulch to cover the soil?
- Encourage children to water their seedlings.

Vocabulary

Care, Growth, Planting, Protect, Seedlings, Shelter, Transplant

Book Suggestion

How Groundhog's Garden Grew (Lynne Cherry) tells a story about a young groundhog learning how to plant and tend her very own garden through each season. Ask children about impressive aspects of the story. Discuss how it relates to their gardening experiences.



Planting Tips

- Plant small seeds only ¼ inch deep, larger seeds up to 1 inch deep.
- Do not allow the roots to dry out.
- Carefully remove plants from pots by squeezing sides. Tip plant headfirst between fingers. Keep root-ball/soil intact and cradle in hand to plant.
- Plant transplants in the soil at the same depth as they are in the pot.

Ready ... Set ... Dig in!



Gardening Activities
CARING

Watering

Experiencing the essential source of life

Description

Watering helps children learn that water is the source of life. If plants don't get watered, they will wilt and eventually die. Since children love to water, the danger is more likely over-watering, which deprives the roots of oxygen and causes death. Vegetables in well-drained soil are unlikely to be over-watered, making ideal conditions for children.

Suggested Activities

Daily Watering Trips

- Store child-size watering cans near the water source. Take trips to the garden each day to water the plants.
- Use a recycled gallon milk jug to fill watering cans to help children understand and compare relative measurements (volume and weight).
- Discuss the best time of day to water plants and how much water is needed for healthy plant growth.
- Learning how to water plants properly builds children's self-confidence and fine motor skills.

Water Play

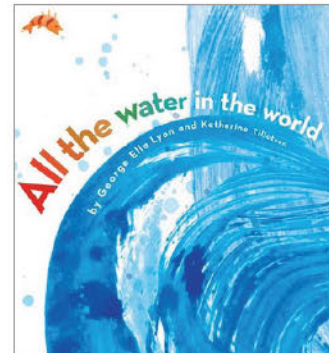
- Fill a water table with water. Add objects such as plastic cups, ladles, and measuring cups to encourage children to practice pouring, lifting, and measuring to enhance their psycho-motor skills.

Vocabulary

Lift, Measure, Pour, Water, Wilt

Book Suggestion

All the Water in the World (George Ella Lyon and Katherine Tillotson) is an inspiring poem about the importance of water for plants, animals, humans, and other living things. The poem includes facts about water and the need for water conservation for the health of all life on earth.



Watering Tips

- Water early in the day.
- Water the soil, not the plant. Many diseases move through water, so avoid splashing soil onto the plant.
- Water deeply in a wide area around the base of the plant to promote root growth.

Water, water, come and give life!



Gardening Activities
CARING

Weeding

Is there such a thing as a “bad” plant?

Description

Weeding engages children as active participants in garden management, helping to keep those pesky weeds under control. Weeding also introduces the topic of invasive plants, which under certain conditions, can take over and prevent other valued plants from growing.

Suggested Activities

Weeding

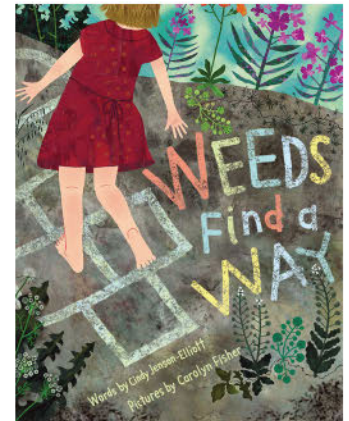
- Create “I’m a Garden Manager” badges for the children or ask them to make their own.
- Explain that weeds should be thought of as “plants growing in the wrong place.” In non-garden places like vacant lots, the same plants may not be called weeds. Plants such as dandelions, wild violets, and goldenrod may be weeds to one person, but attractive wildflowers or wildlife habitat to another. Check with your local Cooperative Extension center for information regarding weeds and invasive plants in your area.
- Discuss the differences between weeds and other common plants, including potential benefits. For example, dandelions are usually considered weeds, but they have attractive flowers that are edible and leaves that can be cooked or added to salads.
- The main disadvantage of weeds is that they can easily invade and take over a vegetable garden.
- Talk about playful weeds such as dandelions, daisies, buttercups, and speedwell. Play games with weeds. Gather and create a “weed museum” in the classroom.
- Introduce mulching as a good method for controlling weeds without using chemicals.
- Investigate mulch used in your garden and discuss other methods of preventing weeds.

Vocabulary

Invasive, Mulch, Removal, Weed, Wildflower

Book Suggestion

Weeds Find a Way (Cindy Jensen-Elliott) is a delightful tale about the weeds that children may encounter in nature. The book puts a charming spin on plants that we commonly try to get rid of.



Weed Tips

- Use 2 to 3 inches of mulch to prevent weed germination.
- Remove weeds while they are small, before they flower and set seed.
- Space desired plants so that leaves will just touch when mature—this will limit the amount of space available for weeds.
- Do not put weed seeds in your compost.

Weeding gardens and feeding our plants!



Observing Plant Growth

Beginning to build STEM skills

Description

Observing plant growth helps children gain early math and science skills as they observe, measure, and document how seeds grow into edible plants. As they work in the garden, children learn how to build planters, connect hoses for watering, understand the effect of the seasons, count seeds, measure growth, weigh produce, describe appearance, and discuss taste. These activities can be considered precursors of science, technology, and other STEM concepts.

Suggested Activities

Using Vegetable Growth as a Vehicle for Learning

- Most vegetables provide opportunities for learning and differ so much that comparison is always educational. For example, compare tomatoes to summer squash. Both produce fruit and foliage contrasting in color, shape, and texture.
- Vegetables grow quickly, providing an easy and informative way for children to experience and understand plant growth.

Observing Plant Growth

- Show children how to observe and measure plant growth using 12-inch rulers to compare different plants.
- Cherry or grape tomatoes are an effective choice because they grow quickly, are easy to measure, and have a distinct look when they are ripe. At the end of the experiment, they are delicious to eat!
- Encourage children to record their observations and create charts.
- Use open-ended questions to prompt critical thinking.

Understanding Life Cycles

- Discuss the life cycle of plants. Organize the children to collect leaves, seeds, and flowers.
- Using a reproducible worksheet, prompt children to glue each part of the plant on its appropriate place. Discuss completed work.

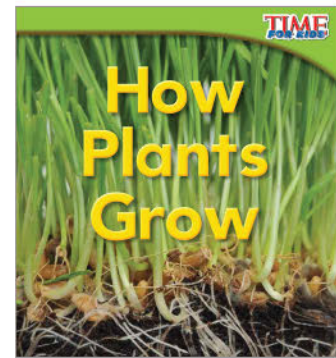
- Alternatively, or additionally, ask children to draw the plant life cycle.

Vocabulary

Compare (Similar/Same), Contrast (Differences), Life cycle, Measure, Observe, Plant

Book Suggestion

How Plants Grow (Dona Herweck Rice) is part of the series: TIME FOR KIDS Nonfiction Readers. The book provides a beginner's guide to the stages of plant growth and includes informative photos of seeds, roots, and leaves to illustrate plant growth in nature.



Plant Growth Facts

- **Roots** absorb nutrients and water, anchor the plant in the soil, provide support for the stem, and serve as food storage.
- **Stems** support buds, flowers, and leaves; contain the vascular system that transports food, water, and minerals.
- **Leaves** absorb sunlight to produce plant sugars in a process called photosynthesis. Each leaf develops as a flattened surface that provides a large area for efficient absorption of light energy.
- **Flowers** create more plants. Insect-pollinated flowers attract pollinators; wind-pollinated flowers produce large amounts of pollen.
- **Fruits** protect seeds and attract animals that can move the fruit far away from the parent plant. Some fruits rely on wind to disperse the seeds, like the fluff on a dandelion or the winged seed (Samara) of a maple tree.

I spy with my little eye ... a leaf float by!



Observing Garden Bugs

Anything that moves motivates children to learn!

Description

Observing garden bugs motivates children to use tools to examine many fascinating critters living in the garden. Discussion of bugs (both beneficial and garden pests), can begin a conversation about habitat.

Suggested Activities

Exploring the Garden as a Bug Habitat

- Encourage children to roll over logs, lift flat surfaces, or dig for bugs in the ground to observe insect behavior.
- Ask children if all bugs are equally beautiful and likable. Who is afraid of insects? Why?
- Discuss the benefits of bugs as organisms sharing our ecosystem, including pollination and being food for other animals. Good bugs can eat bad garden bugs.

Celebrating Ladybugs (Coccinellidae)

- The great majority of bugs are good for the garden and keep the ecological balance in check. Most notably, ladybugs are one of the most popular beneficial insects because they feed on aphids, which are a common garden pest.
- Remember, having beneficial insects in the garden will lead to fewer pests. Learn to see aphids as ladybug food.

Composting with Earthworms (vermiculture)

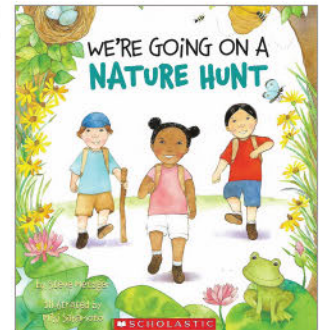
- Use earthworms and decomposed organic matter to enrich the soil and add nutrients. Encourage children to dig in and become active participants in keeping the garden healthy.
- For more information, refer to the NLI/NC State Extension publication LOCAL FOODS: Childcare Center Production Garden Series, 8. *Vermicomposting in Childcare Center Gardens* (<https://naturalearning.org/Gardening+Series>).

Vocabulary

Compost, Decompose, Habitat, Insect, Nature, Worm

Book Suggestion and Nature Hunt

In recognition of the classic book, *We're Going on a Bear Hunt*, read *We're Going on a Nature Hunt* (Steve Metzger). Organize a "bug safari" with the children in the garden. Together, identify different bugs and highlight garden pollinators and other animals that may be beneficial.



Garden Pollinators:

- | | | |
|------------|----------------|---------------|
| 1. Ants | 5. Birds | 9. Mosquitoes |
| 2. Bats | 6. Butterflies | 10. Moths |
| 3. Bees | 7. Flies | 11. Slugs |
| 4. Beetles | 8. Midges | 12. Wasps |

Insect Facts

- Insects go through a series of stages throughout their life cycles. They all begin as an egg, but some hatch as an instar and look like a small version of the adult. Others, like butterflies, hatch as a larva, become a pupa, and emerge as an adult, looking very different in each stage. It is important to recognize friends and foes in each of their life stages.
- Only a tiny percentage of bugs are pests.
- Rather than purchasing beneficial insects, it is much more effective to create a habitat in which they will thrive. If you build it, they will come.
- To attract predators, you must have a few pests for them to feed on.

Go bug out!



Gardening Activities HARVESTING AND EATING

Harvesting

Learning patience until things are ripe!

Description

Harvesting helps children imagine themselves as farmers as they enjoy the fruits and vegetables they have grown. For more information on harvesting, refer to the NLI/NC State Extension publication LOCAL FOODS: Childcare Center Production Garden Series, 3. *Growing Warm-Season Fruits and Vegetables in Childcare Production Gardens* (<https://naturalearning.org/Gardening+Series>).

Suggested Activities

Harvest Days

- Be sure to harvest fruits and vegetables as soon as they are ripe to avoid birds and other pests getting to them first.
- Harvest time provides opportunities to carefully observe the color, size, and texture of each type of fruit and vegetable before and after harvesting. Discuss how to pick without damaging the produce. Introduce words such as ripe and unripe, hard and soft, color-related words, and those listed in the vocabulary section shown here.

Creating a Farmer's Market

- After harvesting fruits and vegetables from the garden, create a pop-up farmer's market with the children where they can sell produce to their parents. This reinforces healthy eating practices, encourages math play while buying and selling, and promotes parent engagement.

Vocabulary

Crunchy, Edible, Gather, Hard, Pick, Produce, Ripe, Rough, Smooth, Soft, Sour, Sweet, Wash, Yield

Book Suggestion

It's Harvest Time! (Jean McElroy) is an engaging book that teaches children how fruits and vegetables grow. Use the fold-outs and photos to communicate harvesting practices, discuss plant identification, and introduce plant parts.



Harvesting Tips

- Most fruits and vegetables taste best if allowed to ripen on the plant. However, you may need to harvest a bit early to get them before the birds do.
- Fruits and vegetables often change color as they ripen.
- Harvest early in the morning and keep produce cool until consumed.
- Be gentle. If the vegetable is not easily twisted or pulled off, cut the stem to remove.
- Harvest frequently to prolong the bounty. Each plant's goal is to produce viable seed — once fruits fully mature, the plant no longer needs to produce flowers and fruit.
- Wash hands before and after harvesting.

It's harvesting time!



Gardening Activities HARVESTING AND EATING

Preparing

Enjoying the fruits (and vegetables) of our labor!

Description

Preparing food for snacks is a fun activity for children that counteracts adverse reactions to new tastes and builds a foundation for healthy eating habits. With a little imagination, many attractive snacks can be created.

For more information, refer to the NLI/NC State Extension publications LOCAL FOODS: Childcare Center Production Garden Series, 5 and 6. *Snacking and Cooking with Warm-Season Produce from Childcare Production Gardens* and *Snacking and Cooking with Cool-Season Produce from Childcare Production Gardens*. (<https://naturalearning.org/Gardening+Series>).

Suggested Activities

Washing Hands and Produce

- Food preparation involves learning about food safety and health.
- Make sure children understand the importance of washing their hands and produce thoroughly before eating. Help them practice properly washing both.
- Focus on washing away soil (and sometimes critters) that may be on the surface of food. Discuss how washing food helps to prevent illness.

Chopping Produce

- A good way for children to learn about preparing food is practicing how to properly cut fruits and vegetables. Use child-appropriate knives with adult supervision.
- Choose fruits and vegetables such as cucumbers, strawberries, green beans, and peppers, which are easy for children to chop.

Measuring Ingredients

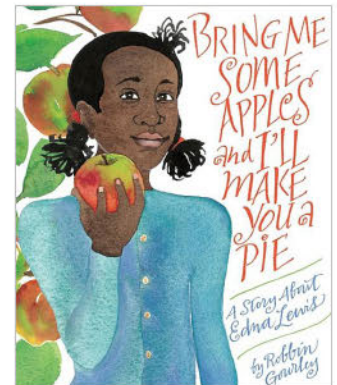
- Food preparation is a great opportunity to start learning different measuring methods and units. Set up the activity with scales, measuring cups, and spoons of different sizes.
- Weigh different types of fruits and vegetables — a large tomato compared to a leaf of lettuce or a single bean — so that children begin to understand relationships between size, shape, and weight.
- Children can assist by learning to pour, mix, shake, spread, knead, peel, stir, squeeze, dip, and mash different ingredients to make tasty snack options.

Vocabulary

Chop, Crunchy, Cut, Mash, Measure, Peel, Pour, Produce, Shake, Snack, Sour, Stir, Squeeze, Sweet, Tasty, Wash, Weigh

Book Suggestion

Bring Me Some Apples and I'll Make You a Pie (Robbin Gourley) is a delightful tale about preparing delicious apples right from your own backyard. This book tells the story of famed chef Edna Lewis and her focus on the farm-to-table movement.



Preparing is caring!



Gardening Activities HARVESTING AND EATING

Snacking

Yummy!

Description

Snacking helps children learn how fruits and vegetables taste — maybe ones they have never tried before. Patience will be rewarded after a child accepts and enjoys a particular vegetable or fruit after previously refusing it many times. For more information, refer to the NLI/NC State Extension publication LOCAL FOODS: Childcare Center Production Garden Series, 5 and 6. *Snacking and Cooking with Warm-Season Produce from Childcare Production Gardens* and *Snacking and Cooking with Cool-Season Produce from Childcare Production Gardens* (<https://naturalearning.org/Gardening+Series>).

Suggested Activities

Organizing a Picnic

- Make snack time fun by organizing a picnic outdoors. Plan ahead of time with the children and make sure everyone has a role in creating the event.
- Children can help pack the picnic basket with food and supplies.
- Ask children to select the picnic spot: on a lawn or deck, around picnic tables, under a tree. Bring a blanket if needed.
- Encourage children to tune into their senses by asking them to identify things they see, smell, or hear outdoors.

Setting the Table (or blanket)

- Use a printable table setting. Encourage children to decorate place mats for their lunch or snack time.
- Prompt children to help set the table by placing their plate, cup, napkin, spoon, fork, and knife in the designated spots on their place mat.
- Laminate or cover place mats with contact paper to add protection so children can reuse daily.

Enjoying Healthy Birthday Party Snacks

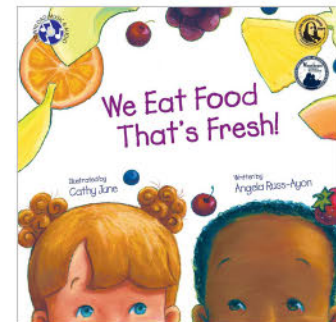
- Birthday celebrations do not need to be restricted to cake and ice cream.
- Celebrate by having healthy snack choices to support children's healthy development.
- Tasty examples include fruit salads, pretzels, nonfat vanilla frozen yogurt, fruit and vegetable smoothies, fruit kabobs, vegetables with dip (hummus, pesto, and guacamole), and many others!

Vocabulary

Bitter, Celebration, Picnic, Salty, Snack, Sour, Sweet, Taste

Book Suggestion

We Eat Food That's Fresh (Angela Russ-Ayon and Cathy June) introduces young children to stimulating food experiences, exciting children's interest in fruits and vegetables. Children are encouraged to try new foods that they may have never experienced before.



Yummy! Buen provecho! Bon appétit!



Gardening Activities HARVESTING AND EATING

Taking Home

Sharing is caring!

Description

Engaging families with take-home gardening experiences, fresh produce, and recipes conveys the importance of their child learning about food. Suggest simple, healthy, and fun food-related activities for children and parents to do at home.

Suggested Activities

Planting at Home

- Provide parents with seeds or classroom seedlings and directions on how to plant at home with their children.
- Share resources that highlight the positive impacts of healthy eating and physical activity on childhood development.

Taking Field Trips

- Encourage family field trips to a local farmer's market, community garden, garden center, pick-your-own, or special food gardening event. Such trips can be fun ways to experience different fruits and vegetables and motivate adoption of healthy lifestyles.
- Share opportunities on social media, bulletin boards at the entrance to your center, and via newsletters.
- Ask children to share their experiences of family field trips.

Strong Together

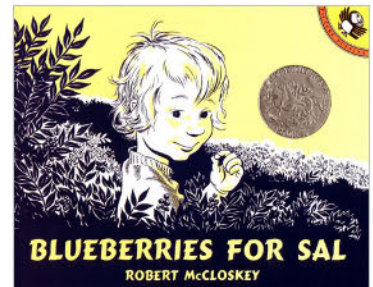
- A family garden encourages both healthy eating habits and physical development.
- Schedule a family gardening day or evening at the center with resources focused on in-ground, raised bed, and container gardening. Encourage parents to visit the Natural Learning Initiative Green Desk for more information: (<https://naturalearning.org/greendesk>).
- Assure families that gardening does not require a big effort, but rather fun, short-term projects that foster healthy eating habits, strong interpersonal relationships, and physical activity.

Vocabulary

Family, Home, Market, Together

Book Suggestion

Blueberries for Sal
(Robert McCloskey)
tells a wonderful story of how a little girl and her mother go blueberry picking. A warming story of how a child and parent bond over food.



Home is where the garden is!

Natural Learning Initiative

Time to Harvest

Warm Season



Basil

Helpful tips

- The fragrant aroma and taste of basil comes from the oils contained in the leaves. For the strongest flavor, harvest right before the plant goes to flower, preferably in the morning.
- To harvest, cut the stem just above a leaf joint when leaves are about 2 inches long. Be sure to snip off any flowers to promote leaf growth.
- To dry, cut and tie stems loosely in small bunches and hang upside down in a dry, shaded location.
- To freeze, place leaves in zip-lock bags, or freeze inside ice cube trays filled with water or olive oil. Add to stews, meats, and soups!



Berries

Helpful tips

Blackberry

- Blackberries can be stored and refrigerated in containers for up to a week.
- Blackberries produce fruit primarily during the summer season.
- The average harvesting size for blackberries is 1 inch wide.

Blueberry

- Most blueberry plants do not bear fruit until they are three years old.
- Blueberry season lasts primarily from late spring to early summer.
- The average harvesting size for blueberries is 1/2 inch wide.

Strawberry

- The fruit will be mature when it turns red in color.
- Strawberry season typically begins in late spring, but it depends on the weather.
- The average harvesting size for strawberries is 1 1/2 inches wide.



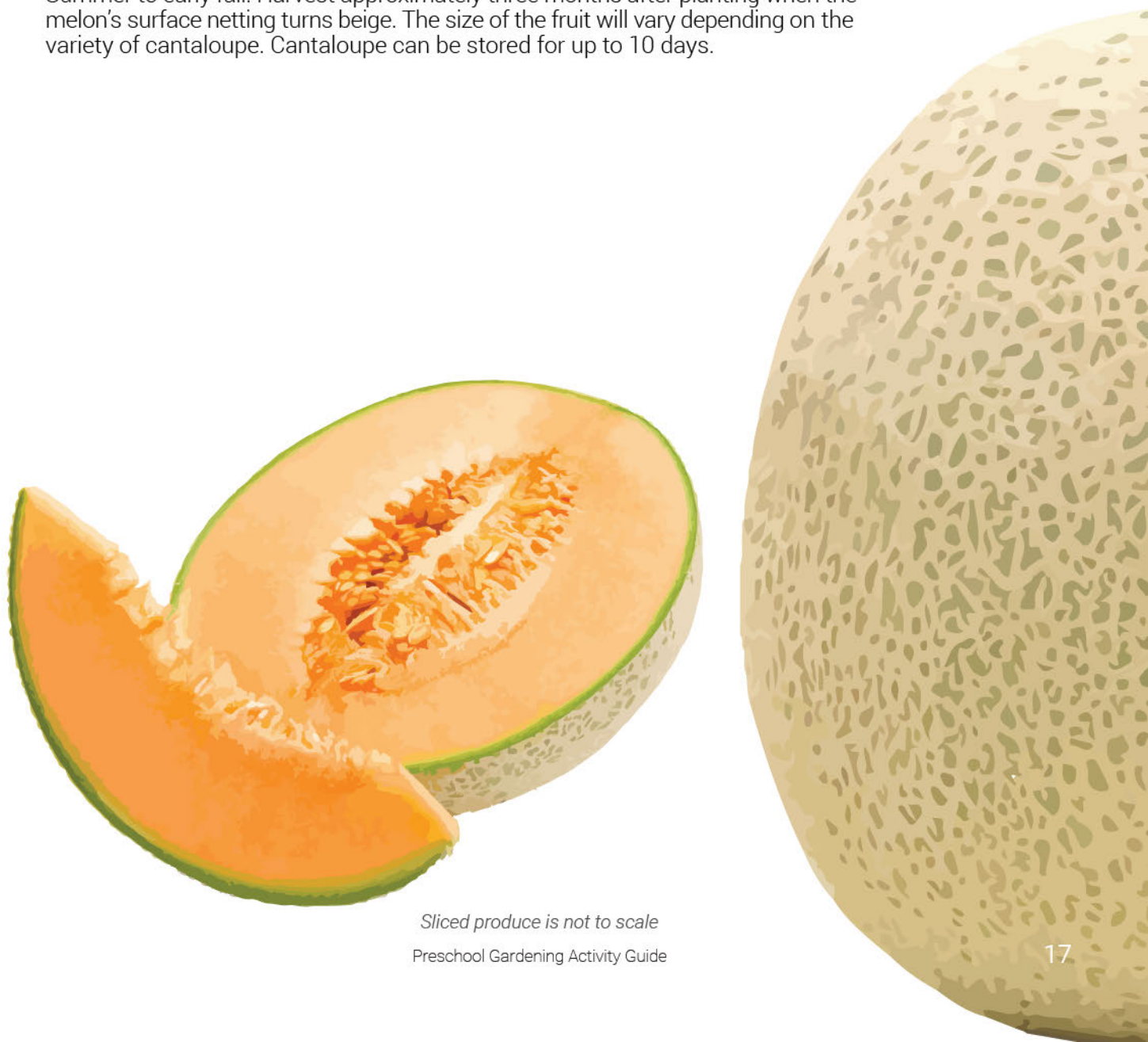
Cantaloupe

Helpful tips

- Cantaloupe can be picked once fully ripened, changing in color from green to a subtle beige.
- Once ripened, cantaloupes can be picked from the stem with little resistance.
- The blossom end (belly button) of the cantaloupe will become soft and produce a light, sweet aroma when ripe and ready to pick.

Harvest

Summer to early fall. Harvest approximately three months after planting when the melon's surface netting turns beige. The size of the fruit will vary depending on the variety of cantaloupe. Cantaloupe can be stored for up to 10 days.



Sliced produce is not to scale

Natural Learning Initiative
Warm Season

Cherry Tomatoes

Helpful tips

- Tomatoes are available in a variety of colors.
- Leave the tomatoes on the plant as long as possible before picking to make sure they have fully ripened. Tomatoes are sweetest at their deepest hue.
- Store harvested tomatoes at room temperature to prevent flavor loss. Tomatoes will store longer if stems and caps are left in place.

Harvest

Early summer to mid-fall. Tomato plants begin to produce fruit two months from the planting date. Allow tomatoes to ripen on the vine when possible. Cherry tomatoes are ripe when they take on their final color and are around 1 to 2 inches in diameter.



Cucumber

Helpful tips

- Wear gloves when harvesting because both the fruit and plant are prickly.
- Cucumbers will be slender at maturity, reaching between 1 to 1 ½ inches in diameter depending on the variety.
- Flavor will be mildly sweet with a crisp, crunchy texture.

Harvest

Pick during the summer season when cucumbers are at least 3 inches long and a dark-green color, before they begin to turn yellow. Use pruners or a knife to remove the fruit without damaging the stem. Cucumbers mature quickly, so be sure to check the plants every day. They can be stored in a refrigerator for up to one week.



Green Beans

Helpful tips

- Green bean stems are fragile, so use two hands when picking pods.
- Beans can be stored and refrigerated for up to a week.
- Beans ripen around two months after the planting date.

Harvest

Harvest from early summer to early fall, as soon as beans are about 3 to 4 inches long and slightly rounded. Leaving beans on the plant for too long results in tough pods with hard seeds.



Marigold

Helpful tips

- Marigolds may be yellow or orange. Their edible flowers have a bitter, spicy, herbal flavor.
- Marigold blooms grow to be approximately 2 inches wide.
- Be sure to deadhead the blooms (snipping flowers just above the top two leaves on the stalk), before they brown, to keep your plant blooming from spring to frost.
- If you allow seeds to develop, blooming will cease.
- Marigolds work as a natural pest repellent. Make sure to plant them close to vegetables to protect them from infestations.



Natural Learning Initiative
Warm Season

Pepper

Helpful tips

- Initially, peppers are green before ripening fully to red, orange, or yellow. You can eat the peppers before or after they have fully ripened.
- Fully ripe peppers average 4 to 4½ inches tall and will be sweeter in taste.
- Pepper plants will continue producing fruit throughout the summer season.

Harvest

Midsummer to fall. Cut the stem, rather than pulling, which can break branches and damage the plant. Store peppers up to three weeks in a reusable produce container or bag in the refrigerator.



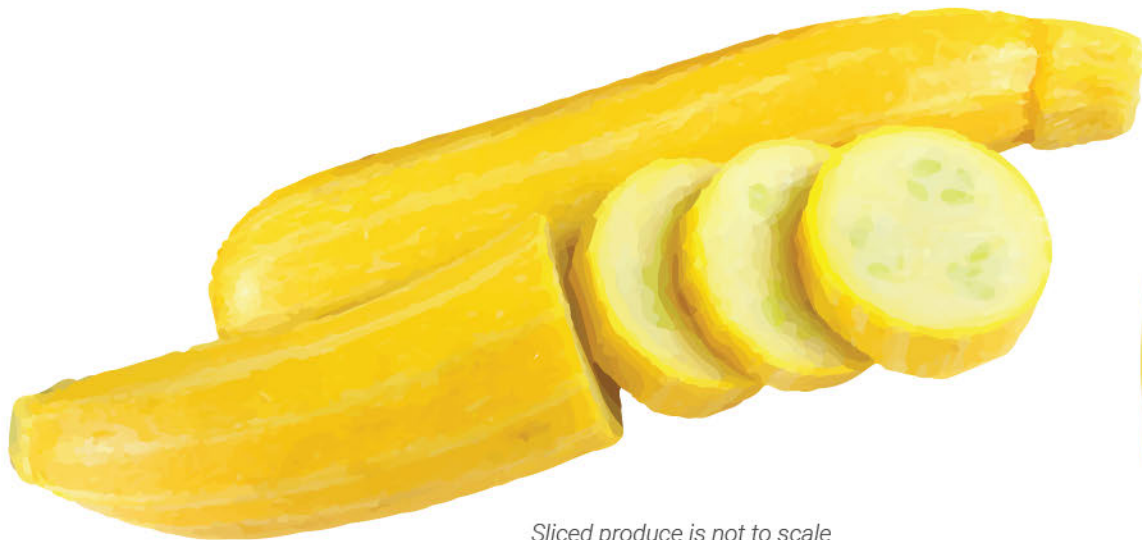
Squash

Helpful tips

- Squash is ready to pick when the remaining flower petals on the end of each fruit are small, brown, and can be easily pulled off.
- Pick the squash before it gets too big and begins to lose its flavor.
- Remember to wear gloves when harvesting because both the fruit and plant are prickly.
- Most squash plants will produce fruit within 50 days of planting and will continue producing throughout the summer.

Harvest

Harvest during the summer season. Squash are most tender when picked at 5 to 6 inches long. Removing fruit before it becomes too large will encourage continued production of flowers and fruit. Store summer squash in a reusable produce container in the refrigerator for up to one week.



Sliced produce is not to scale

Watermelon

Helpful tips

- Remember to wear gloves when harvesting because both the fruit and plant are prickly.
- Watermelon plants take approximately two and a half months to begin producing fruit.

Harvest

Midsummer to fall. Watermelons are ripe when the tendril closest to the fruit on the vine begins to dry out and turn brown, and the underside of the melon turns a light yellow. In addition, thumping a ripe melon produces a muffled, hollow sound as opposed to the clear metallic ringing of immature melons. Watermelon can be stored for a week at room temperature and two to three weeks in the refrigerator.



Sliced produce is not to scale

Zucchini

Helpful tips

- Zucchini will produce fruit within 30 days of planting and will continue to produce throughout the summer.
- Fully ripe zucchini is a uniform dark-green color across the whole fruit.
- The stem has almost no spines and is easy to harvest.
- Zucchini can be used to make bread, sliced into “noodles,” baked as “chips,” or simply roasted in the oven!

Harvest

Summer season. Zucchini are most tender when picked at 4 to 8 inches long. Store in the refrigerator in a reusable produce container for up to one week.



Sliced produce is not to scale

Natural Learning Initiative

Time to Harvest

Cool Season



Broccoli

Helpful Tips

- A head of broccoli is actually a series of small flowers, called florets. If left unharvested, florets will bloom into small yellow flowers.
- For best flavor, harvest in the morning before the soil temperature raises.
- When watering broccoli, avoid wetting the developing head to prevent disease and ensure a successful growing process.

Harvest

Cut broccoli floret in mid to late fall when it reaches a desirable size (usually around 3 inches wide). After cutting the main floret, additional smaller florets (1 to 2 inches across) will begin to grow and can be harvested until the plant begins to flower. Broccoli may be stored in the refrigerator in a perforated bag for up to a week.



Brussels Sprouts

Helpful Tips

- Plant six to ten weeks before the first frost of the season.
- Brussels sprouts require cool weather and are slow to grow, but they produce for an extended time. This makes them a favorite fall to winter crop because they are very resistant to frost.
- Brussels sprouts share the *brassica oleracea* family with other vegetables such as broccoli and cauliflower.

Harvest

Individual brussels sprouts are ready to harvest when they are 1 to 2 inches in diameter. Sprouts ripen starting at ground level and should be snipped off when they are the appropriate size. Bag and store unwashed sprouts in the refrigerator. The leaves are also edible and can be prepared similarly to collards.



Brussels sprouts plant is not to scale

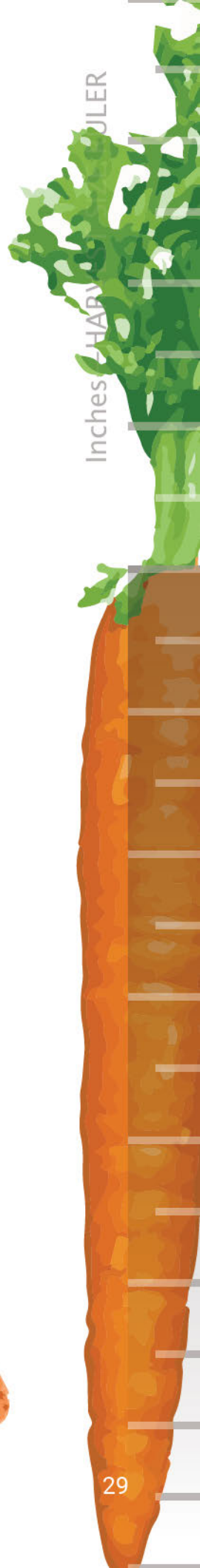
Carrots

Helpful Tips

- Most varieties of carrots are pest and disease-resistant.
- Carrots are grown from seed and take around eight to ten weeks to mature, depending on the variety.
- Plant additional seeds every three weeks for multiple harvests.

Harvest

Carrots are ready to harvest when they reach a diameter of $\frac{1}{2}$ to 1 inch and an average length of 7 inches. They will also begin to rise slightly out of the soil when ripe, with their orange “shoulders” just visible. Mulch fall carrots and leave them in the ground to harvest as needed over winter, or remove the tops and store for four to six months at 33°F and high humidity.



Chard

Helpful Tips

- Leaves can be eaten raw or cooked.
- The gold standard for multicolored Swiss chard is the cultivar 'Bright Lights'. It produces shades of yellow, purple, orange, and red.
- Chard stems are also edible. Cut the stems off the chard leaves and cook them like asparagus.

Harvest

Individual leaves are ready to harvest four to six weeks after planting when they are 8 to 12 inches long. To extend the harvest, pick the larger exterior leaves first, leaving the smaller interior leaves to continue growing. Chard may be stored in a reusable produce container in the refrigerator for up to two weeks.



Leaf bundle is not to scale

Collard Greens

Helpful Tips

- Many people eat collard greens on New Year's Day to celebrate wealth and prosperity in the coming year.
- In some cultures, people have traditionally cooked collards with fatback, but there are healthy recipes that leave out the fat, using vinegar and spices for flavoring.

Harvest

Collard leaves taste best when the leaves are less than 10 inches long. Pick larger exterior leaves from midfall through spring or until the plant starts to flower. Collard greens become sweeter after the first frost, so wait to harvest until after the first cold night. Collards can be stored up to two weeks in a reusable produce container in the refrigerator.



Leaf bundle is not to scale

Kale

Helpful Tips

- Small, tender kale leaves can be eaten uncooked, used in salads, or simply as a garnish. Large, more mature leaves are ideal for cooking recipes.
- Make kale chips as a tasty treat for children to enjoy. Bake kale leaves after tossing with salt and olive oil for a nutritious snack.
- To make kale tastier, massage the leaves to soften their texture and flavor. Children can join in by tearing leaves into bite size pieces, placing leaves in a bowl and massaging the leaves with oil or simple vinaigrette.

Harvest

Leaves can be harvested at any size up to 10 inches long. There will be a medium-sized harvest from fall to early winter, followed by a larger spring harvest until the plant starts to flower. To extend the harvest, pick the largest leaves from the exterior, allowing the smaller central leaves to continue to grow. Wash and chill immediately after harvest. Kale becomes sweeter after the first frost, so wait to harvest until after the first cold night. Kale can be stored up to two weeks in a reusable produce container in the refrigerator.



Leaf bundle is not to scale

Lettuce

Helpful Tips

- Lettuce comes in many different varieties with a wide range of textures and colors.
- Due to the high water content of lettuce (95 percent), it is best eaten fresh.
- To maximize health benefits, choose leaves that are darker in color as they contain more nutrients.

Harvest

Harvest lettuce as it grows, cutting individual leaves for a salad mix or harvest the entire head once it matures. Salad mix or leaf lettuce can be harvested when the leaves are as small as 2 to 3 inches long. Full size leaves can be harvested when they are as large as 5 to 6 inches long. To extend the harvest, pick the largest leaves from the exterior of the lettuce head, allowing the smaller central leaves to continue to grow. For harvesting a head of lettuce, allow the plant to mature and cut the head at the base. Head lettuce may be stored up to two weeks, leaf lettuce up to four weeks.



Inches—HARVEST SIZE RULER

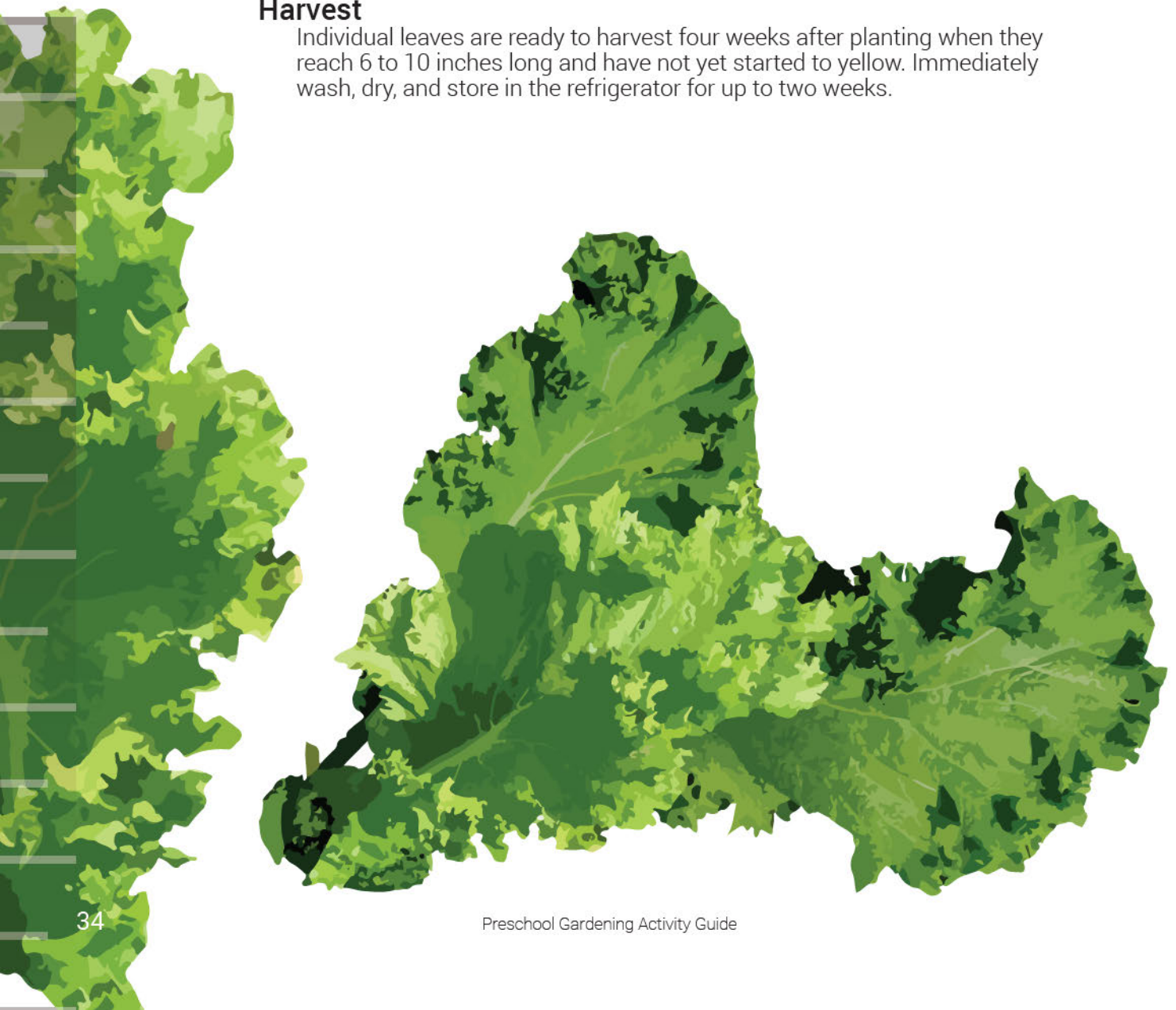
Mustard Greens

Helpful Tips

- Mustard greens are used as a cover crop between growing seasons to prevent erosion, inhibit weeds and pests in the soil, reduce compaction, and retain nutrients.
- Mustard seeds can be harvested in midsummer if plants are grown in spring.
- To harvest seeds, cut the stalk from the plant below the seed pods and gather them in a paper bag. Set the bag aside in a warm place for a few weeks. Once the stalks have dried and the pods begin to split open, the seeds can be extracted.

Harvest

Individual leaves are ready to harvest four weeks after planting when they reach 6 to 10 inches long and have not yet started to yellow. Immediately wash, dry, and store in the refrigerator for up to two weeks.



Onions

Helpful Tips

- The bulb of an onion is a short underground stem with fleshy modified leaves that we see as the layers of the onion.
- When cutting an onion, it releases compounds that make eyes water. Chill the onion or soak it in cold water before cutting to minimize the impact.
- One way to get rid of 'onion breath' is by eating parsley.

Harvest

Onions are ready when the bulbs have reached the desired size (average bulb diameter is 4 inches) and three-fourths of the green tops of the plants have yellowed and started to fall over. Harvest during the summer by pulling bulbs out of the soil, shaking the soil off, and cutting the stalks within 1" of the bulb. Allow onions to air dry in the shade for two to three weeks before storing in shallow boxes or mesh bags in a cool, well-ventilated space. Ideal storage conditions are 50°F and 55 percent humidity.

Inches—HARVEST SIZE RULER



Spring Onions/Scallions/ Green Bunching Onions

Helpful Tips

- Spring onions can be “companion plants” when planted among other crops because they release a scent that masks the smell of surrounding plants. The scent confuses insects and may cause pests to avoid your garden.
- Harvest scallions when they are 6 to 8 inches tall with a pair of scissors by snipping part of the green leaf off the plant.
- Healthy, fresh spring onions will grow roots if the base is placed in a jar of water. Once rooted, they can be transplanted outside.

Harvest

Fall to early winter and spring to early summer, when bulbs reach $\frac{1}{2}$ inch in diameter. Dig below the onions with a garden fork to easily pull them out. Store in reusable produce containers in the refrigerator for up to two weeks.



Peas (Sugar and Snow)

Helpful Tips

- Eat pea pods raw, seasoned with salt, steamed, stir-fried, or blanched.
- Peas grown on a well-anchored teepee can create a fun, shady setting for play.
- The pea pods grow out of tiny white flowers. You can see what is left of the blossom at the tip of the pod. Remove this tip before eating the pods.

Harvest

Late spring to early summer. Pea pods can be picked earlier to be eaten, or left on the vine until they are round (length should be close to 4 inches) and can be shelled. The quality of fresh peas declines rapidly, so shell and eat them soon after harvest. They will last about a week in a reusable produce container in the refrigerator.



Radish

Helpful Tips

- Radish is a recommended first plant in any children’s garden because of its durability and rapid growth. Most radishes are ready to harvest within a month of planting, typically when the diameter has reached 1 inch.
- Radishes come in fun colors, including bright cultivars called “Watermelon” and “Easter Egg.”
- Since radishes sprout so quickly, they work well for simple science experiments that explore growing conditions and germination rates.

Harvest

Harvest from early fall until the first frost and early spring to early summer. Radishes are ready to harvest when you can see their rounded tops peeking through the soil. They mature very quickly and are usually ready to harvest within four to six weeks after planting. Radishes make great container vegetables.



Spinach

Helpful Tips

- Spinach is best eaten fresh. It loses nutritional value with each passing day. When boiled, many of the nutrients leach into the water.
- Spinach is a good source of vitamin C, vitamin A, and minerals including iron.
- Baby spinach leaves have a sweeter flavor and more tender texture than full-grown leaves.

Harvest

Individual leaves are ready to harvest four to six weeks after planting when they reach at least 4 inches long. Pick from the exterior of the plant to extend the harvest period. Spinach may be stored up to two weeks in a reusable produce container in the refrigerator.



Our Gardening Activities

Month _____

Year _____

		Preparing				Caring	
							
		Examining seeds/plants	Sprouting seeds	Preparing beds	Planting	Watering	Weeding
Week 1	M ____						
	Tu ____						
	W ____						
	Th ____						
	F ____						
Week 2	M ____						
	Tu ____						
	W ____						
	Th ____						
	F ____						
Week 3	M ____						
	Tu ____						
	W ____						
	Th ____						
	F ____						
Week 4	M ____						
	Tu ____						
	W ____						
	Th ____						
	F ____						
Week 5	M ____						
	Tu ____						
	W ____						
	Th ____						
	F ____						

Caring		Harvesting				Weekly Notes
						
Observing plant growth	Observing garden bugs	Harvesting	Preparing	Snacking	Taking home	List of activities

