Garden Story Time
Program Manual

GARDEN STORY TIME

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HEALTHY YOUTH PROGRAM
Linus Pauling Institute | Oregon State University
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Introduction

About the Linus Pauling Institute
The mission of the Linus Pauling Institute is to promote optimal health through cutting-edge nutrition research and trusted public outreach. To accomplish this we will:

- Discover basic mechanisms underlying the biology of aging and the causes of metabolic and age-related diseases
- Develop effective approaches to slow aging and postpone metabolic and age-related diseases through diet, micronutrients, and phytochemicals
- Advance the principles of healthy living and healthy aging in the public arena, thereby empowering people everywhere to add years of health and vitality to their lives

Advancing healthspan, not just lifespan, is our passion.

Healthy Youth Program Mission
Empowering youth and their families to achieve optimal health through hands-on education.

The Healthy Youth Program is a wellness and healthy lifestyle program for children (preschool through grade 12) and their families. Most of our programs are based on vegetable gardens, linking a healthy and active lifestyle with a healthy and sustainable environment and providing fresh produce for families in need. We engage children and families through participatory education, hands-on activities, and interactive dialogue. All of our programs are youth and family centered, tailored to their unique needs, and build on the strengths of the participating youth and families for long-term success.

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About the Healthy Youth Program

How it All Started
Providing public education on the role of diet, lifestyle, and micronutrients in promoting optimal health, preventing disease, and increasing healthspan has been a major commitment of the Linus Pauling Institute (LPI) since its inception at Oregon State University in 1996. As part of LPI’s public outreach, the Healthy Youth Program was founded in 2009. Our goal is to educate children (preschool through grade 12) and families through evidence-based and hands-on activities. Our vision is for a community of healthy, happy and active children and families.

Our Program Philosophy
We believe that it is an investment in our future to give all children opportunities to eat healthful, nourishing foods. In our experience, kids are more willing to eat healthful foods when they grow it and cook it themselves. As part of LPI’s public outreach, we offer hands-on cooking, nutrition, and gardening programs for youth and their families.

Our programs are based on a Socio-Ecological Model, which recognizes the interwoven relationships between an individual and the environment. Health behaviors are determined by a myriad of influences, which shape -- and are shaped by -- the social environment. We recognize that children and parents are members of families, peer groups, neighborhoods, and communities. Each group has its own social norms, values, and rules, through which children and parents navigate. We believe that successful behavioral interventions must involve the whole family and must address the multiple barriers families face within their communities. To have an impact on children's lifestyle habits, including dietary and physical activity, we must also teach parents to adopt healthier lifestyle habits. All our programs are set out to shift the paradigm of healthy lifestyle habits, especially for low-income communities.
Our Approach

**Child-Centered and Strength-Based Approach**
Our youth programs are based on a child-centered and strength-based philosophy which focuses on the child’s strength and assets – not on the child’s weaknesses or deficits. It is our goal to engage in a relationship with each child that allows us to explore areas where a child is functioning well and feels good about him- or herself. Central to our program philosophy is our belief that every child is unique and has personal strengths and assets. The inability to demonstrate an emotional or behavioral skill is considered as an opportunity to learn and grow, not as an inherent failure.

Our programs are designed to help children develop emotional and behavioral skills, competencies, and characteristics that (1) create a sense of personal accomplishment, (2) contribute to satisfying relationships with other family members and peers, (3) strengthen the child’s ability to deal with adversity and stress, and (4) promote a child’s emotional and social development.

**Family Centered and Strength-Based Approach**
We engage in a relationship with the family to explore the areas in which the family is functioning well. We respect that every family member has his/her role in the family and that every family is unique. We incorporate the following principles:

- Let each family member know that they are an important member of the family and the group
- Make sure every family has a chance to contribute in their own way to the group and acknowledge their contribution
- Make sure you acknowledge and validate each family member’s experiences
  - For example: recognizing the joys and challenges of parenthood
- Focus on the strength and positive experience families already have, instead of on their weaknesses
- View a lack of certain behavioral and emotional skill as an opportunity to learn as opposed to a problem
- Acknowledge the important role families have in the growth and development of their children
- Teach parents to be role-models for their children
- Engage the parents and the children in joint activities that build upon the strengths of the family
- Empower families to be active caretakers of their children
About Garden Story Time

Overview

Garden Story Time is a parent/child interactive preschool, parenting, and environmental education program that inspires families to cook with their children, try new foods, and garden with children; children learn where their food comes from and develop a foundation for environmental stewardship.

Background

Experts agree that early childhood is a critical period to form healthy lifestyle habits and, therefore, presents itself as an important target for healthy eating and physical activity interventions. Studies have shown that dietary habits and preferences for food established during childhood persist into adulthood.

Objectives

- Teach parents about the importance of a healthy lifestyle including healthy dietary and physical activity habits
- Provide cooking and nutrition education for parents
- Teach parents how to involve their children in the cooking process
- Help parents develop strategies to have positive interactions with their children during meal times
- Empower parents to explore the outdoors and garden with children
- Teach parents to be role-models for their children

Class Information

- Each session is four weeks long. Classes are held one day a week for two hours.
- Garden Story Time is designed for parents (or caretakers) with children ages 2 ½ to 5 years old. Parents may bring younger siblings. In our garden space, we cap enrollment at 12 families.
- Staff and volunteers may be onsite for up to four hours; this includes time for the staff and volunteers to set-up before class and to clean-up after class. Additionally, some of the food needs to be prepared ahead of time to allow the preschool-aged cooks to have maximum success and involvement during the cooking process.
- It is ideal to have two assistants in addition to the instructor. Assistants help with set-up, clean-up and cooking preparation. They help children with crafts and facilitate the environmental education projects.

A Typical Day at Garden Story Time

- 9:30 – 9:50 AM Arrival and Art Project
- 9:50 - 10:10 AM Circle and Story Time
- 10:10 - 10:40 AM Rotating tasks: Harvest & Cook · Set the Table · Garden Explorations
- 10:40 - 11:10 AM Snack Time
- 11:10 - 11:30 AM Closing
Components of Garden Story Time

Arrival & Craft Project: The instructor greets all the children as they arrive. The assistants are waiting at the craft table to help the children and their parents with the crafts. All of the supplies are neatly laid out for the children. There is a sample of the craft for the parents to see. The children work on the craft with their parents and when they are finished, they can explore the garden with their parents or play with tractors.

Circle Time: During circle time the families will learn songs, play finger games and listen to stories. It is useful to select two to three songs and finger games that will be used for the duration of the class. This continuity provides familiarity for the children and allows everyone to learn the songs. It is best to create hand motions for each song. By using hand motions with the songs, children imaginatively participate in singing to a far greater extent than if there are no hand motions. (Think of singing the itsy bitsy spider with and without hand motions.) While many teachers give sheet music to the parents, it is most effective for the teacher to develop a repertoire of songs and finger games from memory. When the teacher is able to do this, the parents and children will quickly learn the songs and finger games. Generally, song sheets create a distraction, and prevent parents from fully participating and memorizing the songs. Circle time should be thematic, based on the summer and foods that grow in the summer.

Rotating Tasks: Families are assigned tasks upon arrival to Garden Story Time. Each week their tasks rotate, allowing each family the opportunity to try each task a few times during the class. One family sets the table with napkins, silverware and cups. Assigned families (typically three) help with the snack preparation. The remaining families explore the garden using environmental activity sheets.

Cooking and Harvesting: Assigned families cook with the instructor. During this time the group may be asked to gather together to harvest certain ingredients. While the assigned cooks may be tasked with collecting certain items, such as basil, tomatoes, peppers and zucchini, the entire group should be invited to harvest potatoes and carrots.

Garden Explorations: One area of the garden is set up with all of the supplies for garden explorations. There are laminated environmental activity sheets for the parents to borrow as they lead their children in
garden explorations. The families return everything they used to the same place before snack time.
Activities include:

- Insects: Friends or Foes?
- Searching for Insects: Catch and Observe
- Be an Excavator: Dig and Transport Soil
- Reading in the Garden Teepee
- Worms: A Farmer’s Best Friend
- Learn about Honey Bees
- Sensory Scavenger Hunt
- Watering the Garden
- Build a Fairy House

**Snack Time**: Children wash their hands and sit at the children’s table. Snacks are placed on plates and remain on the counter until all of the children are seated and quiet. The instructor may choose to sing a blessing and thank all of the helpers for setting the table and preparing the snack. Parents or assistants bring plates to the children. Children are encouraged to try new foods. While their snack may be an unfamiliar food, they are encouraged in a number of ways to try everything on their plate. Parents are encouraged to create a peaceful and quiet atmosphere for eating. When the children are finished, they bring their plates, cups, silverware, and napkins to the kitchen and place them in a dish bucket and put their napkins in a laundry bag.
Suggested Materials

- **Cooking Supplies:**
  - Toaster oven
  - Electric skillet
  - Electric griddle
  - Blender
  - Food processor
  - Large stock pot
  - Measuring cups and spoons
  - Mixing bowls
  - Basic kitchen utensils (spoons, spatulas, whisk, can opener, etc.)
  - Knives for parents
  - Safety knives for children (pumpkin carving knives)
  - Dishes
  - Cups
  - Silverware
  - Cloth napkins
  - Dish buckets
  - Hand towels
  - Hand soap
  - Dish soap
  - Sponges
  - Counter space or table for the children to work at
  - Foot stools for children to stand on

- **Play Area:** Tractors and trucks

- **Sitting Area:** Appropriately-sized tables and chairs are important for children to sit at for meal time and for craft time

- **Circle Time:** Carpet squares and a tarp to place them on for circle time

- **Gardening Supplies for Environmental Activities:**
  - Insect nets
  - Magnifying glass containers or magnifying glasses
  - Wheelbarrows
  - Small shovels
  - Trowels
  - Mini rakes
  - Books
  - Beach blanket
  - Small watering cans
  - Spray bottles
  - Small gardening gloves
Educator Resources

Preparing for Garden Story Time

Create cards for rotating tasks for cooking, setting the table, and garden explorations. Each week the name of a different family will be written on these cards with a dry erase marker. Make a task chart to ensure that tasks are rotated fairly.

Create a Welcome Board where the rotating task cards are posted.

Select crafts for each class: Each craft should be nature based. Ideas are included under Teaching Resources and Weekly Lesson Plans. Make a sample of each craft.

Select snack combinations for each class. Ideas are included in the attached lesson plans. Print out recipes to share with the parents. Grocery shopping will be done on a weekly basis. Some recipes may require preparation at home prior to class.

Nutrition education: While the children are eating, share nutrition information with the parents, including information about whole grains, sugar, vitamins and minerals, as well as information about picky eaters.

Registration: Upon registering, inform families of the specific details of Garden Story Time. This should include: directions, what to wear, expectations for behavior in the garden. Ask parents to provide information about food allergies, dietary restrictions, or behavioral issues.
Teaching Resources:

Arts & Crafts Ideas:
- *Crafts to make in the Summer* by Kathy Ross
- *Earthways* by Carol Petrash
- *EcoArt* by Laurie Winn Carlson
- *Little Hands Art Book* by Judy Press
- *Nature Art* by Jeanette Ryall
- *Nature Crafts* by Joy Williams

Circle Time Song Ideas:
- *Games Children Sing and Play: Singing Movement Games to Play with Children Ages 3-5* by Joan Carr Shimer and Valerie Baadh Garrett
- *Finger Plays for Nursery and Kindergarten* Emilie Poulsson
- *Lavender’s Blue Dilly Dilly* by Mary Thienes Schnemann
- *This is the Way We Wash-a-Day* by Mary Thienes Schnemann
- *Sing a Song of Seasons* by Mary Thienes Schnemann
- Sing Through the Seasons by Marlys Swinger
- *Sing Through the Day* by Marlys Swinger
- *Finger Plays for Nursery and Kindergarten* Emilie Poulsson

Book Suggestions (pick approximately ten):
- *A Garden for a Groundhog* by Lorna Balian
- *Apples and Pumpkins* by Anne Rockwell
- *Applesauce By Kurtz, Shirley Kurtz
- *The Apple Pie that Papa Baked* by Lauren Thompson
- *Apples* by Gail Gibbons
- *An Edible Alphabet* by Bonnie Christensen
- *An Earthworm’s Life* by John Himmelman
- *Apples, Apples, Apples* by Nancy Wallace
- *Be a Friend to Trees* by Patricia Lauber
- *Bear and Bunny Grow Tomatoes* by Bruce Koscielniak
- *Blueberries for Sal* by Robert McClouskey
- *Carrots* by Inez Snyder
- *Counting in the Garden* by Kim Parker
- *Counting in the Garden* by Emily Hruby
- *Delicious! A Pumpkin Soup Story* by Helen Cooper
- *Eating the Alphabet – Fruits & Vegetables from A to Z* by Lois Ehlert
- *Farmer’s Alphabet* by Mary Azarian
- *First Tomato* by Rosemary Wells
- *From Seed to Plant* by Gail Gibbons
- *From Seed to Pumpkin* by Wendy Pfeffer
- *From the Garden* by Michael Dahl
• *In the Trees, Honey Bees* by Lori Mortensen
• *Inch by Inch* by David Mallet
• *Jack’s Garden* by Henry Cole
• *One Bean* by Anne Rockwell
• *Over in the Garden* by Jennifer Ward

**Garden Exploration Ideas:**

- [http://growing-minds.org/](http://growing-minds.org/)
- [www.lifelab.org/](http://www.lifelab.org/)
- [http://www.kidsgardening.org/](http://www.kidsgardening.org/)

**Nutrition Information:**

- Share basic nutrition information about the following topics while eating snack and provide one handout (see pages 34-44) for each topic:
  - Whole Grains- *Why Whole Grains*
  - Refined Sugar – *Sugar and Energy Balance*
  - Picky Eaters- *Parenting Picky Eaters*
  - The Importance of Gardening with Kids- *Choosing, Storing, Preparing or Eating in Season*
Teacher Notes:

Prior to participant arrival:
- Set up tables and chairs
- Set up the craft project
- Lay out tarp for circle time
- Place carpet squares near the tarp
- Hang up activity cards for garden explorations
- Make sure all supplies are ready for garden exploration

Art Project
- Help guide families with project and find nature objects for project
- Write child’s name on the project
- Place finished project in a safe place
- Bring out tractors if some children have finished early
- Assistants clean up

Circle and Story Time
- Before Circle Time: Put away tractors
- After Circle Time:
  - Collect carpet squares
  - Fold up tarp after circle

Rotating Tasks: Harvest & Cook/Set the Table/Garden Explorations
- Bring tractors out after families are settled in to activities
- Assistants will:
  - help families with garden explorations
  - engage children who are having trouble or are easily distracted
  - make observations, share them with the children, ask them what they see
  - invite families to join them if they just seem to be wondering without an activity
  - make sure all supplies get returned to the activity card area (if there are stray supplies, please return)

Snack Time
- Bring out snack plates after children are seated and sing a song
- Encourage children to try their snacks if they’re having trouble or are distracted
- Children will take their own plates to the dishwashing station after snack
Assistant Notes:

Arrival and Art Project (20 min)
- Help guide families with project and finding nature objects for projects
- Help clean up

Circle and Story Time (20 min)
- Put away tractors
- Join circle and please participate
- Collect carpet squares in a pile
- Fold up tarp after circle

Rotating Tasks: Harvest & Cook/Set the Table/Garden Explorations (30 min)
- Bring tractors out after families are settled in activities
- Be available to help families with garden explorations
- Engage children who are having troubles or easily distracted
- If families just seem to be wandering without activity, invite them to join you in an activity
- Make observations, share them with the children, ask them what they see
- Make sure supplies get returned to the activity card area. If there are stray supplies, please return.

Snack Time (30 min)
- Bring out snack plates after children are seated and sing a song
- Encourage children to try their snacks if they’re having troubles or are distracted
- Children will take their own plates after snack

Garden Exploration, Bubbles and run through mist (20 min)
- Set out bubbles
- Choose an area to have a mister
For Assistants: Discipline and Expectations

Patience is golden with this age group. Nothing is urgent for them. Time, as we know it, doesn’t exist for them. We must slow down to be with them. Give children adequate time before wanting them to do something. Minutes don’t mean anything to children this age, but the length of a story or the time it takes to put away the tractors does.

Generally, two and three year olds don’t respond immediately to requests. Often they hear you, but “have to” finish whatever little project they’re working on (i.e. lining up cars). If you wait a moment or so, they’ll happily do as you asked. Give a little time before requesting a child to do “xyz” and expecting him to do it.

Four and five year olds are capable of responding immediately, and it’s always good to give them a heads up before you want something. “In two minutes it will be time to...” or “after this story it will be time to...”

Be clear with your expectations. “We’re going to start cleaning up in just a bit. We’ve got time for one more “xyz”, then we’ll need to “xyz.”

Discipline

- State what you want rather than what you don’t want.
  - Walk versus don’t run. Be gentle versus don’t hit.
  - When we say don’t, kids get what not to do, but don’t necessarily know what you want them to do.
- Acknowledge when they’re doing what you wanted them to, especially after they weren’t doing it and now are. This encourages them to want to do it more and reinforces good behavior.
- State what you want, rather than asking them (asking gives lots of opportunities for them to say no). It’s time to go versus are you ready to go?

Helpful Hints

- Distraction works wonders (especially for the 2-3 year olds)
- In cases of resistance:
  - Try giving the child two options (more than two tends to be too many).
  - If that fails, as it may, try something silly. This may provide just enough humor or surprise to make him forget what he was so worked up about.
- In the case of lingering:
  - State what you want, and give some perceived choice. While he doesn’t have a choice to continue the activity, he can choose what he wants to have with him. “It’s time to clean up. Do you want to carry the shovel or the rake?”
  - Entice him. “I have something special to tell you, but first you’ll need to bring that shovel to the fence.” Then you can tell him some little story that will excite him. You can make up a story about a tractor you saw or a little animal that did something sweet or unusual.
- State what’s acceptable/the limits, and where the place for his behavior is acceptable. “The table isn’t for jumping. You can either jump on the path or in the grass.”
Welcome Letter to Families

Hello Garden Story Time participants,

We are so excited to host your families at Garden Story Time over the next few weeks! A few detail pieces:

- INSERT INSTRUCTOR’S NAME will be leading Garden Story Time
- The class will be hosted every INSERT DAY, DATES AND TIMES.
- Garden Story Time meets at INSERT LOCATION AND ANY RELEVANT DIRECTIONS OR PARKING INSTRUCTIONS.
- There are shaded spaces at the garden, but please prepare your child for the weather. Apply sunscreen, bring a hat, water bottle, etc.
- Please have your child wear closed-toed shoes and clothes they are comfortable playing in.
- Snack will be prepared and shared at each class.
- If you have not yet mailed in a check, you are welcome to just bring it to the first class with you. Cost is $40 per parent/child duo and $10 for each additional child ages 2 and up (checks can be made payable to INSERT ORGANIZATION NAME).
Weekly Lesson Plans
Garden Story Time: Week 1

Stories:
- *Up, Down, and Around* by Katherine Ayres
- *Tops and Bottoms* by Janet Stevens

Craft: Vegetable and Fruit Prints

Materials Needed for Craft:
- Aprons
- Card stock
- Paint
- Paper plates
- Lemons
- Celery
- Brussels sprouts
- Items collected from the garden by the children

Snack: Pizza Smiles, Frozen Yogurt Grahams, Mint Citrus Tea
- [http://lpi.oregonstate.edu/sites/lpi.oregonstate.edu/files/pdf/hyp/pizza_smiles_0.pdf](http://lpi.oregonstate.edu/sites/lpi.oregonstate.edu/files/pdf/hyp/pizza_smiles_0.pdf)

Materials Needed for Snack:
- Recipe ingredients
- Oven
- Spatulas
- Pot holders
- Baking tray
- Tray for vegetables
- Cutting boards
- Knives

Make ahead of time: Frozen Yogurt Grahams and Mint Citrus Tea
Garden Story Time: Week 2

Stories:
- *Gigantic Sweet Potato* by Dianne De Las Casas
- *Flight of the Honey Bee* by Raymond Huber

Crafts: Nature Tiles; Solar Art
- [http://www.minimatisse.blogspot.com/2010/12/winter-clay-project.html](http://www.minimatisse.blogspot.com/2010/12/winter-clay-project.html) (more informative link?)

Materials Needed for Crafts:
- Nature Tiles
  - Air Dry Clay
  - Pen
  - Wide mouth Mason jar
  - Straw
  - Gathered plants, flowers, stones from the garden
- Solar Art
  - Nature Art paper
  - Gathered plants and flowers from the garden

Snack: Sweet Potato Hummus and/or Roasted Beet Hummus with crackers, carrots, cucumbers; Chocolate Beet Cake; Mint Apple Iced Tea
- [http://gotnourishment.com/2015/05/15/sweet-potato-hummus/](http://gotnourishment.com/2015/05/15/sweet-potato-hummus/)
- [http://lpi.oregonstate.edu/sites/lpi.oregonstate.edu/files/roasted_beet_hummus.pdf](http://lpi.oregonstate.edu/sites/lpi.oregonstate.edu/files/roasted_beet_hummus.pdf)
- Mint Apple Iced Tea recipe:
  - 2 cups packed mint leaves (pulled off stalk and washed)
  - 6 cups boiling water
  - 6 cups unsweetened apple juice
  - Pour boiling water over mint leaves. Add water. Cool.

Materials Needed for Snack:
- Recipe ingredients
- Food processor
- Spatula
- Bowls
- Spoon
- Tray for vegetables
- Cutting boards
- Knives
• Measuring spoons
• Measuring cups

**Make ahead of time:** Chocolate Beet Cake and iced tea
Garden Story Time Week 3

Stories:
- *In the Garden: Who's Been Here?* by Lindsay Barrett George
- *The Little Red Hen* by Paul Galdone

Crafts: Rose Petal Beads; Walnut Boats
- *Ecoart!* by Laurie Winn Carlson
- [www.two-daloo.com/walnut-shell-boats/](http://www.two-daloo.com/walnut-shell-boats/)

Materials Needed for Crafts:
- Rose Petal Beads
  - Pre-made dough: flour, salt, water, rose petals, bowl, spoon
  - Craft stick
- Walnut Boats
  - Walnut shells
  - Paper for sails
  - Crayons or markers for decorations
  - Melted wax or hot glue gun or beeswax
  - Tooth picks or craft sticks for masts
  - Glue
  - Water bin
  - String
  - Scissors

Snack: Zucchini Bites, Raspberry Lemon Tea, Zucchini Apple Cookies
- [http://www.food.com/recipe/raspberry-iced-tea-32450](http://www.food.com/recipe/raspberry-iced-tea-32450)

Materials Needed for Snack:
- Recipe ingredients
- Oven
- Spatula
- Pot holder
- Bowls
- Measuring spoons
- Measuring cups
- Trays
- Grater
- Cutting boards
- Knives
• Baking sheet

Make ahead of time: Tea, Craft Dough
Garden Story Time: Week 4

Stories:
- *Giant Peach Yodel* by Jan Peck
- *Those Amazing Ants* by Patricia Brennan Demuth

Craft: Water color paints on garden flag

Materials Needed for Craft:
- Water color paints
- Brushes
- Jars for water
- Water
- Aprons
- DIY garden flags
  - Cut muslin into small squares (approx. 8”x 8”) and, using a permanent marker, draw the outline of garden objects (vegetables, fruits, flowers, leaves, etc.) onto the muslin (before class). Children will paint the flags using watercolors (during class).

Snack: Broccoli Bites, Perfect Peach Smoothie, Peach Yogurt Popsicles

Materials Needed for Snack:
- Recipe ingredients
- Food processor
- Griddle
- Pot holder
- Bowls
- Measuring spoons
- Measuring cups
- Trays
- Cutting boards
- Knives
- Blender

Make ahead of time: Popsicles and Garden Flags
Environmental Activity Sheets
Insects: Friends or Foes?

A pest is any living thing (plant or animal) that bothers or annoys us, our pets or animals, damages things we value, or occurs where we do not want it. This is a broad definition, and in fact people do not always agree that something is a pest. A dandelion may be a pest to one person and a wildflower to another. It is important to remember that pests aren’t trying to hurt or bother us.

All living things have roles in the environment. Depending on their roles in food chains, living things can be producers, consumers, predators, prey, or decomposers. Each of these roles is important for food webs to function. But what happens when hungry aphids infest your entire kale crop, or rats steal your bell peppers? These situations make them pests.

A garden is a complex ecosystem teeming with life. While a few of the animals and insects that live in a garden can cause damage to the plants, there are also many creatures that can be found that are essential to the plant and ecosystem health.

Insects are the most common creatures we see in the garden. Many insects are pollinators that are essential for the production of fruit, vegetables, and flowers. Some insects are parasites or predators that prey on garden pests. These beneficial insects are the natural enemies of garden pests. Insects are an essential link in many food chains, providing food for other insects, birds, and animals.

Activity: Search for insects on the cards. Tell the children about the role that particular insect plays in the garden. Figure out if they are a friend or a foe in the garden. Talk about what it eats or is eaten by.

Materials needed: Insect Cards (need to make ahead)
Search for Insects: Catch and Observe

The most important part of collecting insects is to be very gentle. You’ll want to collect them but not harm them. Be careful to handle them so that wings and legs are not damaged. The children can collect them with their hands or with a net, and gently put them in a container to observe with magnifying glasses. Do not collect wasps or bees, as these insects may sting.

Activity: Collect a bug

Materials needed: Insect net, magnifying glass container or magnifying glass,

Look under leaves and on grasses; look closely on plants and the underside of their leaves. Help children carefully put the bug into the container with a lid. You can examine insects in the container or with a magnifying glass.

Using a net: brush the net through the weeds, bushes, and branches of trees, sweeping insects off the plants. After a few sweeps, students may flip the end of the net over the rim of the insect jar to trap the insects, flip it again to force the insects to the bottom of the net, and examine the catch using the magnifying lens.

Where do insects live? (everywhere) What determines where they live? (availability of food, water, light, shade, shelter) If you were to look under a log or a rock, what insects and other animals would you expect to find? (earwigs, snails, slugs) Would you find the same insects in a sunny spot? (probably not) Insects, like other animals, live in habitats that provide them with the food, water, and shelter they need.

What do you notice about the insects? Were the wings leathery or transparent? Does the insect have sucking or chewing mouthparts? Is the abdomen exposed or covered by the wings? Does the insect have two or four wings? Compare one insect to another. Use the pictures of garden insects to identify any insects they may not already know.
Be an Excavator: Dig and Transport Soil

Digging and turning over the soil is important because it aerates the ground and brings any pests to the surface for the birds to eat. It is good to mix leaves and debris into your soil. It makes healthy “food” for the plants.

**Activity One:** Dig in the dirt.

**Materials needed:** Shovels, hand held rakes or trowels

Children can dig in designated areas. The soil should stay in the general area they are digging. Please guide your child not to throw the soil with the shovel and also to be aware of who is near them, so that no one gets bonked with a shovel.

**Activity Two:** Transport dirt with the wheelbarrow

**Materials needed:** Wheelbarrow

Children can fill up a wheelbarrow and transport and dump it in a designated area. They can also dig or mix up the soil they transport with the existing soil.
Reading in the Garden Teepee

The garden teepee is available for a quiet spot to sit and read books. Please leave the books in the garden teepee upon leaving.

Observation: *What do you notice growing up the teepee sides?* Notice how high they are; be sure to look at them next week to see if they’ve grown any higher.
Worms: A gardener’s best friend
Adapted from Growing Minds ‘All About Worms’

Talk to your child about the benefits of worms.
Worms are important for our garden because they help make the soil better. Worms eat leaves and old vegetable matter to make the soil become healthier for the plants. Worms tunnel through the earth and let air into the soil like a rototiller. There can be 50 or 100 worms per square foot in your garden.

Some things to know about worms:
- Worms don’t have lungs like you and me, but instead they breathe through their skin.
- Worms also don’t have ears, but they feel sound through their whole bodies.
- Because earthworms do not have teeth, they use a gizzard to grind up large pieces of food.

Activity: Find a worm

Materials needed: Trowel, paper plate with a bit of dirt, one worm, a magnifying glass

Find an area of the garden that is covered with leaves or debris. This area will have more worms because the debris is a food source for the worm and keeps the soil moist (and worms like moist soil). Find soil or a part of the garden bed that isn’t too close to a plant. Using a trowel, dig around to find a worm. Place the worm on a paper plate with a bit of dirt. Ask your child to look closely at their worm. Can they tell which end is the worm’s head? How does the worm feel? How does it move? Encourage them to observe as much as possible about their worm. How many rings does the worm have around its body? Now put leaves next to the worm on the plate. What does the worm do?
Honey Bees
Adapted from Growing Minds ‘Honey Bees’

Communicate like a Bee

Explain that all animals have a means of exchanging information with one another. Some use visual signals, such as body movements or facial expressions, to convey meaning. Ask your child to think of all of the ways that animals communicate through sound or movement. How does a dog communicate? (Barks and whines, wags his tail, growls and show his teeth, and jumps to communicate). What about a cat? (Or another animal they are familiar with.) Animals also use signals we can’t see, such as important cues that can be detected by the sense of smell or taste. For example, dogs and cats mark their territories by urinating.

Bees buzz to tell other bees about where nectar is located. They also "dance" to communicate this information to their bee friends who live in their hive. When bees return to their hive, they bring back the flower’s scent as another tool to help other bees find it, so they also use scent to communicate!

When flowers are really far from the hive (more than 300 feet), the bee performs a waggle dance in the pattern of a figure eight. If flowers are close by, the bee simply circles around. Demonstrate (your version) of the honey bee dance to children and ask them to do each dance, too.

Activity: Find a place in the garden with flowers. Observe the bee. Tell your child about the work of the bees.

Busy Bees

- **Collecting Nectar:** All the bees we see are females, and they are called worker bees. They have a long tube (called a proboscis) that they use to gather their food (called nectar). Nectar is the sweet juices in the flowers. Worker bees store it in a part of their body called the honey sac.

- **Collecting Pollen:** Bees also collect pollen. Pollen is the yellow powder that comes from flowers. Bees returning to the hive often carry balls of pollen in their pollen baskets (stiff hairs on their legs). Honey bees mix pollen with nectar to form beebread. Beebread is used to feed baby bees (larvae) in the hive.
  - **Observations:** Can you see the bee’s honey basket?

- **Making Honey:** In their hive, honeybees put the nectar into the honeycomb. Nectar has to be dry in the hive to store for the winter. To dry the nectar they fan the honeycomb with their wings. This becomes honey! The bees then cover the honey with beeswax.
Sensory Garden Scavenger Hunt

Here’s what to do:

1. Explore the garden and find the four stations listed below.
2. Follow the directions at each station and record your answers on this piece of paper.

Have fun!

Station #1 - SIGHT: Collect seven items from the garden. These items could be stones, bark, leaves, flowers, or even a bug. What are their colors? Are they shiny or dull? Are they dark or light, rough or smooth, scented or unscented, scratchy or soft?

Station #2 - SMELL: Collect leaves from three different herbs. Smell each one. Rub them together with your fingers. Does it smell stronger or not? Which is your favorite smell?

Station #3 - TASTE: Taste one vegetable from the garden. Find vegetables that are mature and ripe like snap peas, a piece of kale, cabbage, or broccoli.

Station #4 - SOUND: Find a quiet place to sit and listen to the sounds of the garden. Can you hear a honeybee buzzing? What else do you hear in the garden?
Water the Garden

Adapted from Growing Minds ‘Watering the Garden’

Talk to your child about the things that every plant needs to survive. They need:

- **Warmth:** *How do plants receive the warmth they need to grow?* (Sun)
- **Healthy Foods:** Plant roots need to absorb healthy nutrients. *Where do plants take their nutrients from?* (Soil, earth, dirt)
- **Water:** Plants need water almost every day, just like people need water. *How does nature provide water for plants? What do gardeners need to do if it hasn’t rained?* (Water the plants)
- Tell students about two of the key things gardeners use when they are watering their plants: a watering can (hold one up) and their fingers. Gardeners use their fingers to test the soil, and the watering can to bring water to the plants.

**Activities: Is the plant thirsty?**

**Longer Attention Spans:** Test the soil and water the plants.

**Materials needed:** Buckets with soil, watering can

The children are going to learn how to do a soil test to determine if something needs to be watered.

Guide your child to feel the dry soil and the wet soil. *How does each of them feel? Cool, warm, crumbly, clumpy? How does each of them appear? Light, dark?*

Find a garden bed. Gently put your fingers in the soil of the garden bed without disturbing the plants. *Does the soil feel wet or dry? Do they think it needs to be watered?*

Plant roots take in the water. The water then travels up the stem to quench the plant’s thirst. *Where should we water the plant? Where the flower or fruit or vegetable grows, or on the leaves, or as close to the roots as possible?* (Roots) Water the plants near the roots. Have students retest the soil with their fingers to feel the difference in how it feels after watering.

**Shorter Attention Spans:** Water the plants.

**Materials needed:** Watering can

Water the plants. While a plant can be watered anywhere, plants prefer to drink water from the soil near their roots. (See above for more information.)
Build a Fairy House

Fairies are magical little creatures and, if you’re lucky enough, they may even come and live in the garden. Legend has it that if you build a fairy home, you might attract a fairy to live in it. Some people even leave little plates of food or tiny cups of water for the fairies. Fairies are said to be most active around this time of year, and come out to play after we sleep.

Creating the space for a fairy home: Fairies love places with dappled sunlight, a bit of shade and a bit of sun. They love places that are beautiful. It is important to create a nice space for them before your build their home. Look around at the space. Do any plants need to be trimmed back? Are there any flowers that are wilted or dried, and should be picked?

Building a Fairy Home: Now that you’ve created a nice place to build a fairy home, think of what you want to build... A house, a bedroom, a kitchen, a swimming pool, etc.

Collecting Supplies: Collect items for your building project: bark, stones, sticks, broad leaves, flowers, grasses. Is there something you want to bring from home next time to make it even more special?
WHY WHOLE GRAINS?

What are whole grains?
White bread and pasta are made of refined grains. Refined grains have been processed to remove a lot of their nutrients and fiber.

Whole grains have not been processed and are better for your body. They contain many vitamins, such as the B vitamins.

Whole grains also have lots of fiber-important for a healthy digestive system. Fiber also helps you feel full longer.

Where can you get whole grains?
- Whole-grain breads and pasta
- Whole-wheat and corn tortillas
- Whole-grain cereals such as Cheerios and Shredded Wheat
- Brown rice
- Quinoa
- Couscous
- Oatmeal
- Popcorn
- Whole-grain crackers
Sugar and Energy Balance

Let’s face it, sugar is yummy. It can be added to certain foods to make them sweet and delicious. However, eating too much added sugar can be bad for your body. Added sugars are sugars and syrups that are added to food or drinks when they are processed or prepared. This does not include the natural and healthy sugars that are found in fruits.

To keep your body healthy, limit foods that have added sugar.

The foods and drinks that have the most added sugar are:

- Soda, energy drinks and sports drinks
- Candy
- Cakes
- Cookies
- Pies and cobblers
- Desserts made of dairy products like ice cream
- Fruit drinks
- Pastries and donuts

- Donuts and other treats are yummy but they have lots of added sugars. You can enjoy them occasionally, but try to limit your donuts, cookies and cakes.

- Fruits have healthy natural sugars, so don’t worry about eating too much.
Is your child refusing to eat anything but chicken nuggets and peanut butter and jelly sandwiches? Does your toddler like to play rather than eat anything at the dinner table? If your child is a picky eater, you are not alone. Many parents worry about what their children eat and whether they get enough nutrients. Until your child's food preferences mature, consider a few of these suggestions to avoid mealtime battles.

Include your children in the cooking process. Children are more likely to be adventurous eaters by taking a role in the cooking process, as they are eager to try foods that they have prepared. Preschool children often have more enthusiasm for eating when they have the opportunity to build their meal. They love selecting toppings for pizza, burritos, fajitas, tacos, rice bowls, wraps, vegetable soup, smoothies, and fruit salad.

Eat together as a family. Children learn a great deal by watching how we interact with food. When our children watch us try unfamiliar foods, it encourages them to do the same. Children need to learn how to eat well, and they learn this through positive role modeling. When we create a pleasant eating atmosphere without pressuring them to eat, our children are more likely to relax and try new foods. Be aware that picky eating may be a disguise for something else, such as food intolerances or allergies, sensory issues, distraction, or stress. If parents are having heated conversations, the child might be too uncomfortable to eat. If kids aren’t getting the attention they want, they may realize that they get parents’ attention by not eating. If the TV is on during meals, children can become overstimulated, making it harder for them to try new foods.

Eat what your kids eat. A good rule of thumb is to keep foods in your house that you want your children to eat. “If you don’t want your child to eat it, don’t bring it home,” says David Ludwig, M.D., Ph.D., the director of the New Balance Foundation Obesity Prevention Center at Boston Children’s Hospital and the author of Ending the Food Fight. “When it comes to food, one of the pillars of parenting is to protect the home environment.” Ellyn Satter, a dietitian and eating specialist, believes that it’s our job as parents to provide wholesome food, and that it’s the children’s job to decide whether to eat and how much to eat (without threats or rewards). She believes it’s important to give children choices; choices between carrots or cucumbers, not between chips or vegetables, or between cookies and fruit. Jennifer Shu, co-author of Food Fights, states, “Let them choose the clothes they wear, not the foods they eat. Kids get so used to mac and cheese, they forget that asparagus isn't so bad.”

Eat seasonal produce. When fruits and vegetables are picked at their peak ripeness and eaten shortly after they are harvested, they are more delicious. Compare eating a strawberry bought at the grocery store in February to a strawberry bought in late June at the farmers market. Children may readily eat sweet red peppers from the farmers market in the summer but turn their noses up at their cousins bought from the store and served in the middle of winter. By eating seasonal produce, kids are able to taste the natural sweetness of fruits and vegetables.
One of the problems with the standard American diet, infused with junk food, is that hyper-sweetened foods tend to keep taste buds in an immature state. When kids become accustomed to such a diet, fruit doesn’t taste sweet and vegetables seem almost inedible. This is a modern phenomenon due to having an unnatural and unhealthy food supply.

If you have the space and time, you might consider planting a small garden. Children are often excited to try a new vegetable if they planted the seed, watered it, and eagerly watched the plant sprout, blossom, and bear fruit. Typically, children want to try a bite of what magically grew from the ground.

Understand that kids are nascent eaters. As adults, we have had decades to develop a diverse palate, while our children’s tastes are still developing. Children have twice as many taste buds as adults. They can distinguish the slightest bitterness or spiciness in vegetables. As they get older, their taste buds die off, and foods are no longer as pungent. You can take children’s preferences into consideration when preparing meals without having to prepare separate meals for them. For example, if you are serving rice bowls with beans, sautéed vegetables, olives, avocado, and cheese, the child’s version might include added diced tomatoes, while the adult’s version will include spicy salsa.

While some say it takes a child about ten tries before they accept a new food into their eating repertoire, Ellyn Satter believes it may be closer to 30 times for some children. You might request that your child tries a few bites of a new food before deciding whether (s)he doesn’t like it. For example, if your child declares not to like salmon, acknowledge her/him by saying I see you don’t like salmon today. When we believe that our children won’t eat certain foods and start catering to this, it doesn’t allow them the opportunity to change. Likewise, when we label our child a picky eater, it becomes much harder for them to change.

Don’t expect children to eat everything on their plates. Provide them with a realistic portion and hope that they will try everything. One of the worst things that a parent can do to a picky eater is to force her/him to eat because this will pair that particular taste or food with a stress response. Children may start to avoid eating that food because it is associated with stress.

Eat at set meal and snack times. Children who appear to be picky eaters may simply not be hungry. A child might be full from eating too many snacks or drinking too many beverages in between scheduled meal times. If young children have portable snack containers and boxes of juice, then they may not have the opportunity to actually become hungry. Children are small people and they often eat small portions. Because they may not eat a large quantity of food, we want to make sure they are getting the most out of every bite. To ensure this, offer nutritious and balanced snacks—for example, a plate with hummus, vegetables, fruit, cheese, and nuts.

Consider all of the senses. Eating is a sensory experience. We are influenced by the way food smells, feels, looks, and tastes. Some children can be persuaded to eat food that they like to look at. Some picky eaters have been known to change their ways if their meal looks appetizing or is made into interesting shapes. Others will gladly eat unfamiliar foods on a special plate, while still others are influenced by their imaginations; maybe their favorite character from a book or movie likes a certain food.
Some children really are born picky eaters. There are some children who are simply more selective eaters. According to the Genetic Science Learning Center at the University of Utah, there may be a genetic component to picky eating. Taste is a combination of one’s taste buds, genetic bias, sensory perceptions, and one’s cultural and environmental experience with food. Some people are born with hypersensitive taste buds. These “supertasters” cannot tolerate bitter foods, such as cruciferous vegetables, or overly sweet foods. A picky eater might retain their taste buds longer than the average child or they might have a gene that makes them more sensitive to bitter foods. Fortunately, their sense of smell may decrease with age, making these foods more palatable as they enter adulthood.

In general, many young children are picky eaters. Thankfully, most will outgrow this behavior by the time they are around five years of age. David Ludwig states that “children are born with a fear of unfamiliar foods, which protects them from eating something toxic. But they're also programmed to develop an increasingly broad set of taste preferences. If not, children would die of starvation after weaning.” Like many things related to parenting, patience really is a virtue.
Choosing, Storing, and Preparing Vegetables

Choose Vegetables that are...

**Colorful** - The deeper, more vibrant varieties are higher in phytonutrients such as anthocyanins and antioxidants:
Lettuce and salad greens, corn, potatoes, carrots, beets, sweet potatoes, tomatoes, peas, beans, red cabbage, red onions, lentils, black beans, small dark red beans, dark red kidney beans, pinto beans

**Strongly Flavored Varieties** are higher in beneficial phytonutrients:
Salad greens, onions, chives, kale

**Fresh** - Eat within a couple days of purchase to avoid the loss of nutrients:
Broccoli, Brussels sprouts, asparagus, leeks, salad greens, kale, corn, cauliflower, artichokes

**Optimum Storage**
*Crisper drawer of the refrigerator in a re-sealable plastic bag with 10-20 tiny holes:*
Lettuce and salad greens, broccoli, Brussels sprouts, scallions, chives

**To preserve flavor, store at room temperature:**
Tomatoes, sweet potatoes, potatoes

**Cooked Versus Raw**
*Cook to have more available nutrients (roasted, steamed, or sautéed):*
Onions, carrots, beets, tomatoes

**Eat raw or steam for less than five minutes to get more nutrients:**
Broccoli, Brussels sprouts, cabbage, cauliflower, kale, lettuce and salad greens, peas, green beans, artichokes, asparagus

**Smaller Varieties Have More Nutrients:**
Onions, tomatoes

Adapted from *Eating on the Wild Side* by Jo Robinson

Updated August 2016
Special Tips on Selecting Vegetables

Garlic, Shallots, Scallions, and Leeks
- Shallots and scallions (green onions) are more nutritious than most onions.
- Garlic contains allicin, a compound with strong anti-bacterial properties. To get maximum amounts of allicin, slice, mince, or press cloves and then let them rest for ten minutes before exposing to heat.
- Use the bulbs and the greens of leeks. The green portions have more phytonutrients than the white portions.

Corn
- Steam, grill, or microwave corn. When corn is boiled, valuable nutrients leach into the cooking water. Corn cooked in its husk retains the most nutrients.
- Canned and frozen corn can be as nutritious as fresh. Canning reduces its vitamin C content, but does not destroy phytonutrients.
- Cook with whole-grain cornmeal to benefit from the nutrients in the bran and the germ. Keep cornmeal refrigerated.

Potatoes
- Eat the skins which contain 50 percent of the antioxidant activity in the entire potato. Its high fiber content slows the digestion of starch and sugar, giving the potato a lower glycemic value.
- New potatoes do not raise blood sugar as much as mature potatoes do. In addition to eating the skins, lower the glycemic index of potatoes by (1) eating them with some type of fat (2) chilling them for twenty-four hours after they’ve been cooked, and (3) flavoring them with vinegar.

Beans and Peas
- Choose pod peas over shelled peas; they have more nutrients and fiber.
- Canned beans are higher in antioxidants than home-cooked beans. The heat of the canning enhances the nutritional content.
- Some people have difficulty digesting a type of carbohydrate in beans called oligosaccharides. Choose varieties that are low in this compound, such as lentils and pinto beans. Another remedy is to discard the soaking liquid before cooking them.

Adapted from Eating on the Wild Side by Jo Robinson
Choosing, Storing, and Preparing Fruit
Choose Fruits that are...

**Colorful** - The deeper, more vibrant varieties are generally higher in phytonutrients such as anthocyanins and antioxidants:
Red apples, black raspberries, dark red cherries, blue, black or red plums, red, purple, and black grapes, deep-colored oranges, red and pink grapefruits, deep red watermelons

**Eat the skin for greater amounts of phytonutrients:**
Apples, peaches, nectarines, plums, apricots

**Fresh** - Eat when freshly harvested and fully ripe to avoid loss of nutrients:
Strawberries, cranberries, cherries, grapes, peaches, nectarines, plums, apricots

**Frozen** - Almost as nutritious as fresh; thaw quickly to preserve nutrients:
Blueberries, blackberries, strawberries, raspberries

**Optimum Storage**
Best stored in the refrigerator:
Apples, blueberries, blackberries, raspberries, grapes

To increase antioxidants, store at room temperature for a couple days before eating:
Strawberries, uncut melons

Adapted from *Eating on the Wild Side* by Jo Robinson
Special Tips on Selecting Fruit

Apples
- Choose cider or cloudy apple juice. Cloudy juice has up to four times more phytonutrients than clarified juice.

Blueberries
- Cooking and canning blueberries can increase their phytonutrient content.

Stone Fruits (Peaches, Nectarines, Plums, Apricots)
- Buy ripe or nearly ripe stone fruits. Stone fruits that are exposed to cold temperatures when they are immature may never fully ripen, or their flesh may turn brown, dry, or leathery.
- Look for ripe fruit that has a creamy yellow or white background with only traces of green. White-fleshed peaches and nectarines are richer in phytonutrients than yellow-fleshed varieties.

Oranges
- Deeply colored juice with pulp offers more nutrition than paler juices without pulp. Inexpensive juices, including those made from concentrate can have more phytonutrients than premium brands.

Melons
- Small seedless watermelons are more nutritious than large heirloom varieties. The skin of a ripe watermelon has lost its gloss and the “ground spot” is yellow. Listen for a deep sound when you thump it.
- Honeydew melons are the sweetest and least nutritious melons. The orange-fleshed honeydew is an exception; it has more beta-carotene than most varieties of cantaloupe.

Tropical Fruits
- Bananas are relatively high in sugar, lower in phytonutrients than all but a few fruits, and have a relatively high glycemic load. Bananas do provide some fiber, and are a good source of potassium.
- The extra-sweet, more golden varieties of pineapples are more nutritious than the traditional variety. They have more beta-carotene and vitamin C.

Adapted from Eating on the Wild Side by Jo Robinson
Eating in Season

Eating Seasonally
You may have heard of eating seasonally. What does this mean? During different times of the year there is different weather. In each of the seasons, different fruits and vegetables grow better than others. There are plants that like cold weather and others that need a lot of sun and heat. When you eat seasonally, it means eating fruits and vegetables that grow and can be harvested where you live or close to where you live at that time. It usually means that they taste better, too! Also, eating in season helps you to eat a large variety of fruits and veggies-important for good health.

What’s in Season?
In Oregon, you find many different kinds of delicious fruits and vegetables every season! Here are some examples:

Winter:
Beets, bok choy, kale, cauliflower, hazelnuts, walnuts, cabbage, and winter squash

Spring:
Asparagus, lettuce, rhubarb, mushrooms, peas, garlic, radishes, and strawberries

Summer:
Apricots, peaches, cherries, plums, peppers, blueberries, melon, and tomatoes

Fall:
Apples, corn, beets, carrots, Brussels sprouts, pears, grapes, and broccoli