

In this unit students will plant a vegetable garden filled with companion (buddy) plants, including tomatoes and basil, carrots and beans, lettuce and radishes, marigolds and nasturtiums. Key concepts include 'āina, companion planting, beneficial garden creatures and pests, decomposers, pollinators, nature's elements, photosynthesis, proper harvesting and vegetable washing, and healthy habits.

RECOMMENDED GRADE LEVEL

Grade 1

This unit is easily adaptable for other grade levels.

LESSON DELIVERY

This unit consists of four 45-minute lessons to be taught at 3 to 5 week intervals (about one lesson per month) over the course of one semester. Regular garden care and observations should take place between lessons, and teachers are encouraged to use the Lesson Extensions or create their own extension activities in order to connect the gardens with other classroom learning. This unit may be delivered in either the fall or spring.

GARDEN CARE

- Teachers and students are responsible for watering and weeding their garden. Regular applications of organic nutrients (vermicast) are scheduled as part of each lesson.
- Add **Garden Monitor** to the list of classroom jobs assigned; these students should visit the garden daily to water the soil, check on the gardens, and make observations.
- Set up a shared weekly watering schedule amongst grade level teachers and/or parents and garden docents to make sure the garden receives adequate moisture.
- Please do not use synthetic chemicals (pesticides, herbicides, and/or fertilizers) in or around school and home gardens. If necessary, use "OMRI" (organic certified) products only.
- Post the **Garden Agreements** in the classroom and review them often with students.



PRE & POST UNIT SURVEYS, TAKE HOME LETTERS, & STUDENT WORKBOOKS

- Pre and Post Unit Surveys measure student progress related to content knowledge, attitudes, and behavior change related to 'ĀINA Lessons.
- Take Home Letters contain suggested questions/activities for each lesson for families to help reinforce, engage, and learn along with their child.
- Student Workbooks include Student Worksheets and Take Home Letters, available for download at www.kokuahawaiifoundation.org/aina.
- Regular student observation time in the garden is encouraged with the use of individual Garden Journals or Folders, where drawings and writings can be kept by each student, or a Class Journal where weekly garden observations can be recorded by Garden Monitors.
- Plan to review and select examples of student work to be shared with the Kōkua Hawai'i Foundation.

LESSON EXTENSIONS

Gardens offer infinite, engaging learning opportunities, and teachers are encouraged to utilize them beyond these lessons. The lesson plans include a number of suggested activities (Lesson Extensions) designed for teachers and students to make the most of the gardening experience!

NEED HELP?

Contact the Kōkua Hawai'i Foundation with any questions or comments about this unit:

- aina@kokuahawaiifoundation.org
- (808) 638-5145



THE GOOD BUDDY GARDEN

Lesson 1	Lesson 2	Lesson 3	Lesson 4
Companion Plants	Garden Creatures	Nature's Elements	Harvest Party
SUGGESTED DELIVERY TIMES FOR FALL SEMESTER (3 to 5 weeks apart)			
September	October	November	December
SUGGESTED DELIVERY TIMES FOR SPRING SEMESTER (3 to 5 weeks apart)			
February	March	April	May
LESSON OVERVIEW			
Key Concepts <ul style="list-style-type: none"> • Companion plants • Garden Agreements • Planting seeds and transplants 	Key Concepts <ul style="list-style-type: none"> • Beneficial garden creatures • Garden pests • Pollinators and decomposers • Garden care 	Key Concepts <ul style="list-style-type: none"> • Elements of nature • Photosynthesis • Garden care • Harvesting 	Key Concepts <ul style="list-style-type: none"> • Harvest • Healthy habits • Gratitude • Celebrate!
Introduction Discuss and demonstrate how certain plant pairs help each other: Tomato/basil, lettuce/radish, beans/carrots, marigolds/nasturtiums. Review the Garden Agreements.	Introduction Discuss twelve types of garden creatures and whether they help or harm the garden plants. Discuss garden care and harvesting.	Introduction Discuss the natural elements of sun, air, water, and soil and the plant parts that use them.	Introduction Review the Good Buddy Garden key concepts and discuss the importance of eating whole, fresh vegetables and exercising while in the garden.
Activity 1: Mural Activity Create a Good Buddy Mural collectively by drawing the vegetable or flower plants shown on the Plant Buddy Sorting Cards.	Activity 1: Mural Activity Finish the Good Buddy Mural by adding garden creatures to the garden scene.	Activity 1: Living Sunlight Read the <i>Living Sunlight</i> story about the sun's energy, the process of photosynthesis, and the very important role of plants.	Activities 1 and 2: Garden Harvest and Harvest Party Hats Harvest and wash lettuce, basil, green beans, nasturtiums, tomatoes, radishes, and carrots. Create Harvest Party hats and put the garden bed to rest.
Activity 2: Planting Activity Prepare the soil and plant tomato and basil seedlings, and carrot, bush bean, lettuce, radish, marigold, and nasturtium seeds in the Good Buddy Garden.	Activity 2: Radish Harvest and Garden Care Weed, water, and feed the garden with vermicast. Look for garden creatures and harvest any available lettuce, green beans, and radishes and enjoy a fresh garden snack.	Activity 2: Garden Activity Weed, water, and feed the garden with vermicast. Observe nature's elements and harvest any available lettuce, green beans, basil, nasturtiums, tomatoes, and radishes. Add compost and mulch (optional).	Harvest Party Students share what they are thankful for before enjoying the garden harvest. Parents and other guests join in the celebration.
Follow Up Activities <ul style="list-style-type: none"> • Daily garden care and observations • Remove cover cloth when sprouts emerge (if used) • Student Worksheet: Garden Buddies • Journaling and discussion • Lesson Extensions • Take Home Letter 	Follow Up Activities <ul style="list-style-type: none"> • Daily garden care and observations • Student Worksheet: Our Healthy Garden • Display Good Buddy Mural • Harvest, wash, and eat fresh garden vegetables • Journaling and discussion • Lesson Extensions 	Follow Up Activities <ul style="list-style-type: none"> • Daily garden care and observations • Student Worksheet: Garden Plants Have Special Jobs • Harvest, wash, and eat fresh garden vegetables • Invite parents to the Harvest Party (Lesson 4) • Journaling and discussion • Lesson Extensions 	Follow Up Activities <ul style="list-style-type: none"> • Continue to care for the gardens and harvest vegetables and flowers; dry and save seeds • Place mulch over bare soil • Student Worksheet: Garden Reflection • Journaling and discussion • Lesson Extensions • Submit examples of student work to Kōkua Hawai'i Foundation

ACADEMIC STANDARDS GUIDE: GRADE 1 ALIGNMENT

Common Core Standards (CCSS), Language Arts		
1.RL.1	Reading Literature: Key Ideas and Details: Ask and answer questions about key details in a text.	Lesson 3
1.RI.1	Reading Informational: Key Ideas and Details: Ask and answer questions about key details in a text.	Lesson 3
1.RI.2	Reading Informational: Key Ideas and Details: Identify the main topic and retell key details of a text.	Lesson 3
1.W.1	Writing: Text Types and Purposes: Write opinion pieces in which they introduce the topic or name the book they are writing about, state an opinion, supply a reason for the opinion, and provide some sense of closure.	Lesson 3
1.W.3	Writing: Text Types and Purposes: Write narratives in which they recount two or more appropriately sequenced events, include some details regarding what happened, use temporal words to signal event order, and provide some sense of closure.	Lessons 1, 2, 3, 4
1.W.5	Writing: Production and Distribution of Writing: With guidance and support from adults, focus on a topic, respond to questions and suggestions from peers, and add details to strengthen writing as needed.	Lesson 3
1.W.8	Writing: Research to Build and Present Knowledge: With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.	Lessons 1, 2, 3, 4
1.SL.1	Speaking and Listening: Comprehension and Collaboration: Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups.	Lesson 3
1.SL.2	Speaking and Listening: Comprehension and Collaboration: Ask and answer questions about key details in a text read aloud or information presented orally or through other media.	Lesson 3
1.SL.5	Speaking and Listening: Presentation of Knowledge and Ideas: Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.	Lessons 1, 2, 3, 4

(Academic Standards Guide continues on page 4)

ACADEMIC STANDARDS GUIDE: GRADE 1 ALIGNMENT (CONTINUED)

Hawai'i Content & Performance Standards III (HCPS III)		
FA.1.1.1	How the Arts are Organized: Use various types of art media	Lessons 1, 2, 4
FA.1.1.2	How the Arts are Organized: Use the elements of line, shape, form, texture, color, and the principles of repetition and variety in artwork using a variety of art mediums	Lessons 1, 2, 4
FA.1.1.5	How the Arts Communicate: Use familiar subjects and experiences to create original works of art	Lessons 1, 2, 4
HE.K-2.1.2	Healthy Eating and Physical Activity: Explain the benefits associated with exercise	Lesson 4
HE.K-2.1.3	Healthy Eating and Physical Activity: Describe the benefits associated with a healthy diet	Lesson 4
HE.K-2.1.5	Personal Health and Wellness: Describe how individuals can promote and protect their own health	Lesson 4
HE.K-2.1.7	Personal Health and Wellness: Describe the benefits associated with personal cleanliness	Lessons 1, 2, 3, 4
HE.K-2.7.1	Advocacy Across Topic Areas: Describe ways to help others promote and protect their own health	Lesson 4
HE.K-2.5.4	Communication Skills Across Topic Areas: Describe how to be a good friend and responsible family member	Lesson 4
HE.K-2.6.2	Goal-Setting Across Topic Areas: Name a personal health goal and describe a plan to achieve it	Lesson 4

Next Generation Science Standards (NGSS)	
Science and Engineering Practices	
Obtaining, Evaluating, and Communicating Information: Communicate solutions with others in oral and/or written forms using models and/or drawings that provide detail about scientific ideas.	Lessons 1, 2, 3
Analyzing and Interpreting Data: Use observations to describe patterns in the natural world in order to answer scientific questions.	Lesson 1, 2, 3
Crosscutting Concepts	
Patterns: Patterns in the natural and human designed world can be observed and used as evidence.	Lessons 1, 2, 3, 4
Systems and System Models: Systems in the natural and designed world have parts that work together.	Lessons 1, 2, 3, 4

ABOUT 'ĀINA IN SCHOOLS

'ĀINA In Schools is a farm to school initiative that connects children to their local land, waters, and food to grow a healthier Hawai'i. In addition to encouraging the use of locally grown fruits and vegetables in school meals and snacks, the program includes standards-based nutrition, garden, and compost curricula that empower children to grow their own food, make informed food decisions, and reduce waste. 'ĀINA In Schools also provides field trips to local farms, chef cooking demonstrations in classrooms, as well as waste reduction, garden, and cooking educational opportunities for families and community members.



PUBLISHING INFORMATION

The 'ĀINA In Schools curricula includes Nutrition Education, Garden-Based Learning, and Waste Reduction lessons for kindergarten through sixth grade students.

All 'ĀINA In Schools curricula and materials are property of the Kōkua Hawai'i Foundation and are distributed to trained docents and teachers for use at schools participating in the 'ĀINA In Schools program. These curricula and materials may be reproduced for individual classroom use by schools participating in the 'ĀINA In Schools program or by registered users approved by the Kōkua Hawai'i Foundation. Reproduction of these curricula and materials is not permitted by unregistered users without the express written consent of the Kōkua Hawai'i Foundation.

The registration and training process helps Kōkua Hawai'i Foundation to gather teacher feedback on the curricula and to document how many children and schools are being reached through the lessons. Visit our website to become a registered user, sign up for trainings, and gain access to all Kōkua Hawai'i Foundation curricula and resource guides. Please direct questions about the 'ĀINA In Schools program and curricula to aina@kokuahawaiifoundation.org.

MAHALO

The Kōkua Hawai'i Foundation thanks the following organizations and individuals who have assisted with the development of the 'ĀINA In Schools curriculum and materials:

- **Kōkua Hawai'i Foundation:** Kaliko Amona, Lydi Morgan Bernal, Sarah Gelb, Kim Johnson, Julius Ludovico, Summer Maunakea, Debbie Millikan, Deanna Moncrief, Kelly Perry, www.kokuahawaiifoundation.org
- **The Green House:** Betty Gearen and Tia Meer, www.thegreenhousehawaii.com
- **GrowingGreat:** Marika Bergsund and Lori Sherman, www.growinggreat.org
- **Food for Thought:** Marty Fujita, www.foodforthoughtojai.org

Special thanks to the students, teachers, and volunteers who have participated and taught lessons in previous years and provided their valuable feedback to improve them.

Mahalo nui!

I have been at this school since grade: K 1 (circle one)

This Pre-Unit Survey is to see what you already know about these topics. It is ok if you don't know any of the answers. You will be learning about these topics this semester. Try your best and have fun!

1. Draw a **circle** around the pair of companion plants:



Sunflower & Radish



Tomato & Basil

2. Draw a **circle** around the element of nature that is important for photosynthesis:



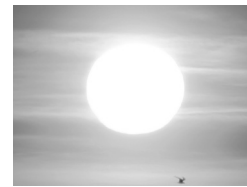
Water



Soil



Air



Sun

3. Draw a **circle** around a beneficial garden creature:



Ant









Snail



Bee

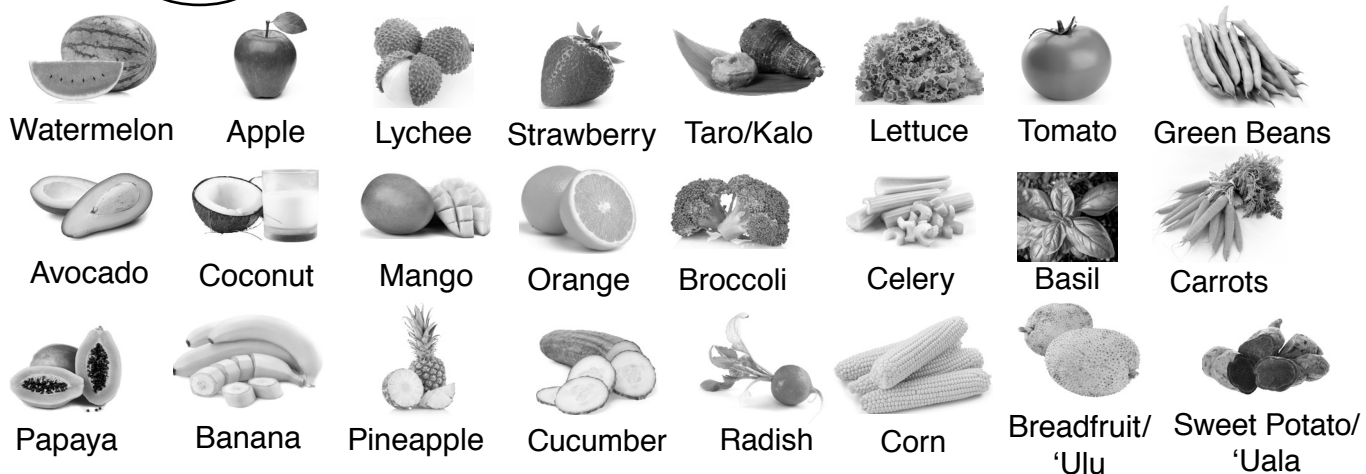
4. Do you like gardening? **Circle** ONE answer:  Yes  I don't know  No

5. Do you like eating fruits and vegetables? **Circle** ONE answer:  Yes  I don't know  No

6. Do you like cooking? **Circle** ONE answer:  Yes  I don't know  No

7. Do you like 'ĀINA Lessons? **Circle** ONE answer:  Yes  I don't know  No

8. Draw a **Circle** around all the fruits and vegetables you like to eat:



9. Draw a picture of what 'āina means to you.

Dear Parent or Caregiver:

This semester, 1st graders will be participating in four 'ĀINA In Schools Garden Lessons. 'ĀINA In Schools, a program of Kōkua Hawai'i Foundation, is a farm to school initiative that connects children to their local land, waters, and food to grow a healthier Hawai'i. Program components vary from school to school and include nutrition education, garden-based learning, farm field trips, chef visits, waste reduction, and family and community outreach.

Although the lessons are delivered once a month, the students will be engaged in between lessons with regular garden activities that include watering, weeding, making observations, and spending time in the garden.

Photos and Media Releases: By now each of you should have received a Kōkua Hawai'i Foundation Media Release Form. We hope that you have completed this form and have submitted it to your child's classroom teacher. From time to time, KHF takes photos/videos of our lessons to highlight activities that are noteworthy.

To keep yourself up to date on what your child is experiencing in 'ĀINA, we suggest putting this letter up on your refrigerator or bulletin board and talking with your child as the lessons are delivered. You can help reinforce, engage, and learn along with your child by discussing the the lessons and activities after each lesson. A lesson summary and suggested questions/activities for each lesson are listed below.

Mahalo!

In **The Good Buddy Garden** unit, students will plant a vegetable garden filled with companion (buddy) plants, including tomatoes and basil, carrots and beans, lettuce and radishes, marigolds and nasturtiums. Key concepts include 'āina, companion planting, beneficial garden creatures and pests, decomposers, pollinators, nature's elements, photosynthesis, proper harvesting and vegetable washing, and healthy habits.



Lesson 1 - Companion Plants

In this lesson, students will discover how "buddy" or companion plants work together when planted next to each other in the garden (keeping pests away, adding nutrients to the soil, providing shade for tender plants, and attracting beneficial insects). In groups, students will explain and demonstrate how the buddy plant pairs help each other. They will create a Good Buddy Mural and plant their Good Buddy Garden with tomato and basil, beans and carrots, lettuce and radish, marigolds and nasturtiums.

Questions to discuss with your child:

- What are companion plants?
- Name some pairs of companion plants.
- Explain how these companion plants help each other.

Suggested home activity:

- Start a good buddy garden
- Visit UH CTAHR's Publication and Information Central website (www.ctahr.hawaii.edu/site/info.aspx) for additional info on home gardening.

Lesson 2 - Garden Creatures

In this lesson, students will discover how certain creatures help or harm the garden by playing the Garden Creature Game. In the garden students will explore and discover the creatures that inhabit their garden. Students will add creatures to the Good Buddy Mural they began in Lesson 1 and harvest any available lettuce and radishes from the garden.

Questions to discuss with your child:

- What garden creatures did you observe?
- Describe how different creatures are beneficial or pests.

Suggested home activity:

- Learn more about garden creatures: what is their life cycle, what do they eat, and where do they live?



Lesson 3 - Nature's Elements

In this lesson, students will share garden observations and discuss the elements of nature that are important for the garden's growth: sun, air, water, and soil. In the garden they will harvest, wash and eat any available vegetables, and care for the garden by watering, weeding, and fertilizing with compost and vermicast. They will read the *Living Sunlight* story and learn about photosynthesis.

Questions to discuss with your child:

- Describe your observation of nature's elements in the garden today.
- What is photosynthesis?

Suggested home activity:

- Observe and describe the elements of nature and how they help the gardens.
- Discuss how seasonal changes affect plants and wildlife in Hawai'i compared to others parts of the world.



Lesson 4 - Harvest Party

In this lesson, students will review how companion plants, garden creatures, nature's elements, and people are good buddies that help each other. Students will discuss the health benefits of eating fresh vegetables and exercising, then make Harvest Party hats and harvest, wash, give gratitude for and enjoy the fresh vegetables from their Good Buddy Garden.

Questions to discuss with your child:

- How is the garden our good buddy?

Suggested home activity:

- Commit to daily exercise and healthy eating.
- Continue to grow fresh vegetables.



If you have any questions or are interested in becoming an ĀINA In Schools docent, please do not hesitate to ask.

To learn more about ĀINA In Schools at your child's school, please contact your school's ĀINA Team Coordinator, or contact:

ĀINA In Schools
Program

aina@kokuahawaiifoundation.org



DESCRIPTION

Students will discover how “buddy” or companion plants work together when planted next to each other in the garden (keeping pests away, adding nutrients to the soil, providing shade for tender plants, and attracting beneficial insects). In groups, students will explain and demonstrate how the buddy plant pairs help each other. They will create a Good Buddy Mural and plant their Good Buddy Garden with tomato and basil, beans and carrots, lettuce and radish, marigolds and nasturtiums.

TIME: 45 minutes

SUBJECTS: Fine Arts, Health, Language Arts, Science

LEARNING OBJECTIVES

After this lesson students will be able to:

- Describe the benefits of growing companion plants together in the garden.
- Identify ways plants help each other.
- Plant and draw a companion plants garden.



ACADEMIC STANDARDS*

CCSS, Language Arts: 1.W.3, 1.W.8, 1.SL.5

HCPS III: FA.1.1.1, FA.1.1.2, FA.1.1.5, HE.K-2.1.7,

NGSS: Patterns, Systems and System Models, Analyzing and Interpreting Data, Obtaining, Evaluating, and Communicating Information

Lesson Extensions: 1.RL.1, 1.W.1, 1.SL.1, 1.SL.2, Patterns, Analyzing and Interpreting Data

*A detailed list of the Academic Standards can be found in the Unit Overview document.

KEY TERMS AND CONCEPTS

‘Āina - Land; that which feeds, nourishes, and sustains us (e.g., food, water, air)

Buddy - Helper, friend

Companion Plants - Plants that are grown together and enhance each other's growth or protect each other from pests

LESSON OUTLINE

I. Introduction (15 minutes)

1. Garden Review
2. Companion Plants
3. Companion Plant Groups
4. Group Activities Overview

II. Group Activities (25 minutes)

1. Mural Activity (12 minutes)
2. Planting Activity (12 minutes)

III. Closing (5 minutes)

LESSON MATERIALS

Community Supplies:

- Vermicast (about 1 cup per class)

Lesson Supplies:

- Plant Buddy Signs (4): Tomato/Basil, Beans/Carrots, Lettuce/Radish, Marigolds/Nasturtiums
- Plant Buddy Sorting Cards (30): 2 tomato, 2 basil, 4 beans, 4 carrots, 4 lettuce, 4 radish, 5 marigolds, 5 nasturtiums
- Garden Agreements Sign
- Thin permanent marker (for marking garden labels)
- Roll of drawing paper (1 per class, about 6+ feet x 12 inches for Good Buddy Mural)
- Potted transplants (1 tomato, 1 basil per class)
- Seeds: Radishes, lettuce, carrots, bush beans, marigolds, nasturtiums
- Water key with lanyard
- Student Workbook

Teaching Team to Provide:

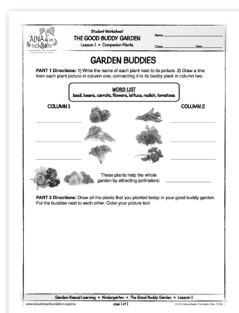
- Garden labels (16 per class, e.g., popsicle sticks or long strips cut from yogurt containers, see Advance Preparation)

School to Provide:

- Color markers and/or crayons
- Tomato cages or staking poles (1 per class, bamboo or other; 3 to 5 feet tall) plus twine for gently tying the tomato plants as they grow*
- 12 child-safe garden tools to loosen soil
- 5-gallon bucket and 5+ plastic cups for daily watering (and/or small watering cans)
- Optional: Cover cloth (sheet, burlap, or other) to cover newly planted seeds

*Optional: T-shirt strings may also be used as ties for tomato plants. Cut an old t-shirt into long strips, 1 inch wide.

Stretch to create string. Reduce, Reuse, Recycle!



Student Worksheet:
Garden Buddies

ACCOMPANYING DOCUMENTS

- ĀINA Pre-Unit Survey
- Take Home Letter
- Student Worksheet: Garden Agreements
- Student Worksheet: Garden Buddies

ADVANCE PREPARATION

- Discuss lesson preparation and presentation plans with your teaching team.
- Confirm teachers have administered ĀINA Pre-Unit Surveys prior to the first lesson.
- Make copies of the Student Worksheets and Take Home Letter, one per student if not using the Student Workbook.
- Invite additional parents or other adult helpers to attend the lesson if needed; the participation of at least three to four adults is required: two to help students plant in the garden and one to monitor the in-class mural drawing. Having four adults during the classroom introduction is ideal in order to lead each group of plant buddies.
- Get to know the garden! Allow students to explore their garden soil by having them dig with hands and tools and make careful observations. How does the soil feel and smell? What creatures live in our garden? In preparation for planting, loosen the soil and remove any weeds. Water the soil thoroughly one day before the lesson.
- Prepare the garden bed before class (see planting diagram on page 5):
 1. Loosen soil.
 2. Dig two holes on one side of each bed for the tomato and basil transplants.
 3. Make eight long rows (1" deep; at least 4" between rows).
 4. Label each row and hole using garden labels marked with names of the seeds and transplants to be planted (two of each: Carrots, lettuce, radish, beans, tomato, basil). Flowers will be scattered at the ends of the bed; flower labels are optional.

INTRODUCTION

15 MINUTES

“Aloha! We are... (state docent’s names) with the ‘ĀINA In Schools program. The ‘ĀINA In Schools program connects us to our food and land so we can live healthy lives and be great stewards of the environment. ‘ĀINA is an important Hawaiian word that means land and that which feeds, nourishes, and sustains us all, including food, water, and air.”

“When we come to visit you we will learn to take care of the ‘āina and to grow our own food.”

Get to know which ‘ĀINA components are being implemented at your school so you can briefly refer to them in this section.

For example, “Some other classes are exploring nutrition and food choices, some are reducing waste through composting, and some are visiting local farms to learn about where our food comes from.”



GARDEN REVIEW

Briefly review the following concepts (for students that have experienced the ‘ĀINA In Schools Unit: The Little Seeds, Big Plants Garden):

- “Last semester when we planted sunflowers and beans, how did you help your garden grow?” By visiting and watering the garden and giving it love.
- “How did nature help the garden grow?” With sun, rain, fresh air, and healthy, living soil.
- “How did the plants help us?” By giving us food to eat and seeds to plant and air to breathe.

“A helper is also called a friend, or BUDDY. Did you know that plants have buddies too, just like we do? Today we will plant a vegetable garden called the Good Buddy Garden and learn how certain plants help each other!”

“Plants that help each other are called COMPANION PLANTS because a companion is a helper or a friend. Can you say companion?”

COMPANION PLANTS

Hold up the Plant Buddy Signs as you discuss how the plant pairs help each other. In the garden the buddies will be planted next to each other.

Keep Bugs Away

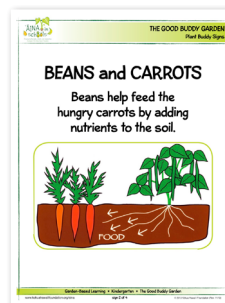
Tomato and Basil: Basil has a strong smell that some bugs don't like. Basil helps protect tomato plants by keeping bugs away and also making tomatoes taste better.



Plant Buddy Sign

Add Nutrients To The Soil

Beans and Carrots: Carrots need a lot of nutrients from the soil to grow and be healthy, and beans help carrots by adding nutrients (food) to the soil.



Plant Buddy Sign

Provide Shade For Tender Plants

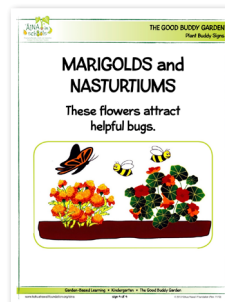
Lettuce and Radish: Radishes sprout quickly and help shade tender lettuce seedlings from the sun.



Plant Buddy Sign

Attract Helpful Bugs

Marigolds and Nasturtiums: These are a friend to all the plants in the garden. They keep harmful bugs away because of their strong smell and attract helpful bugs such as pollinators to the garden.



Plant Buddy Sign

INTRODUCTION

CONTINUED

COMPANION PLANT GROUPS

Give each student a Plant Buddy Sorting Card. Be sure to hand out the appropriate number of cards. Start with two of each, then hand out more if necessary: 2 tomatoes, 2 basil, 2-3 lettuce, 2-3 radish, 2-3 carrots, 2-3 beans, 2-3 marigolds, and 2-3 nasturtiums.



Plant Buddy Sorting Cards

Have each adult hold one of the four Plant Buddy Signs in different parts of the room. Ask each plant buddy group to stand up one at a time and join the adult with the corresponding sign (Tomato/Basil, Beans/Carrots, Lettuce/Radish, Marigolds/Nasturtiums). For example, explain to the group: "Tomatoes please stand up. What plant helps tomatoes?" Basil. "Basil plants join the tomatoes with Ms./Mr. _____."



Plant Buddy Sign

In their small groups have students discuss and act out how these buddy plants help each other. Optional: Have students act out one life cycle, where plants help each other once they grow up.

Have each small group share with the large group, verbally and through movement, how the buddy plants help each other.

- Basils shoo away harmful bugs while the tomatoes grow their fruits.
- Beans feed the soil while the hungry carrots eat/absorb/take in nutrients from the soil.
- Radishes grow up first and shade the little sprouting lettuce plants.
- Flowers shoo away harmful bugs and attract pollinators (bees and butterflies).

GROUP ACTIVITIES OVERVIEW

"During our Group Activities one group will draw a Good Buddy Mural and the other will plant seeds and transplants in our Good Buddy Garden, then we will switch." Students will draw and plant the buddy plant indicated on their sorting card. Divide the students into two groups according to their plant type before going outside:

- Group 1: Tomato, basil, beans, and carrots
- Group 2: Lettuce, radish, marigolds, and nasturtiums

Garden Agreements

Have students take a deep breath, then repeat and discuss the Garden Agreements as listed on the Garden Agreements Sign. Spend some time during this first lesson to review with students the examples on page 2 of the sign.

- I will be SAFE
- I will be KIND
- I will have an OPEN MIND
- I will use my TIME WELL



Have Group 1 begin with the mural activity and Group 2 begin with the planting activity.

GROUP ACTIVITIES

25 MINUTES

Rotate groups after 12 minutes. Regroup for closing.

MURAL ACTIVITY (12 minutes)

In the classroom students will create a Good Buddy Mural of their vegetable and flower friends. On the mural, each student will draw the vegetable or flower shown on their card next to their buddy. Encourage the students to draw the natural elements that the plants will need to grow, like rain, sun, and soil. In the next lesson they will finish the murals by adding garden creatures.



Optional: Students may work individually or with a partner to create a Good Buddy Garden scene on their own piece of paper.

Note: Keep the mural in a safe place inside the classroom for use during Lesson 2.

PLANTING ACTIVITY (12 minutes)

Gather in a circle around the garden. Share gratitude for the garden, our seeds, the sun, air, water, soil, and each other. Optional: Sing a garden/planting song. Note: Developing a routine protocol for entering the garden helps to cultivate a sense of respect and appreciation for this special place.

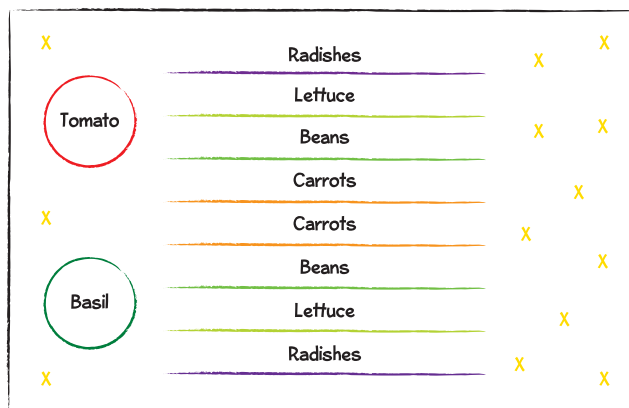


Planting Directions For Group 1 (see planting diagram):

Tomato and Basil

- On one side of the garden bed transplant a tomato plant and a basil plant next to each other (at least 2 feet apart).
- Before letting the students plant, do a demonstration. Transplanting must be done properly.
 1. Find the correct depth of the hole by placing the potted plant in the hole; the dirt level inside and outside the pot must match. Adjust depth as needed.
 2. Gently squeeze the pot and turn it upside down as you place your hand around the plant and over the potting soil, to support the plant as it comes out. Do not pull the plant out of the pot. Squeeze pot gently if needed.
 3. Hold the plant and potting soil with two hands; place it in the hole. Make sure the plant is upright and not leaning to the side. Take your time filling in the garden soil. Press downward with your fingers to fill in any loose soil (any air pockets may cause the roots to dry out).
 4. Place a staking pole next to the tomato plant. As the tomato plants grow, they should be tied gently to the staking pole using twine or t-shirt string.

Planting Diagram



X = Flowers (Marigolds & Nasturtiums)

GROUP ACTIVITIES

CONTINUED

Beans and Carrots

- Point out the four rows labeled carrots and beans (two rows of each).
- Give a pinch of carrot seeds to each carrot student; have them sprinkle seeds in their rows (bottom of trough) and cover with soil (about 1/8 inch deep).
- Give two to four bean seeds to each bean student; have them plant beans in their rows (bottom of trough, about 1 inch deep and 6 inches apart) and cover with soil.



Planting Directions For Group 2 (see planting diagram):

Lettuce and Radish

- Point out the four rows labeled lettuce and radishes (two rows of each).
- Give a pinch of lettuce seeds to each lettuce student; have them sprinkle lettuce seeds in their rows (bottom of trough) and cover with soil (about 1/8 inch deep).
- Give a pinch of radish seeds to each radish student; have them plant the radish seeds in their rows (bottom of trough, about 1/4 inch deep and 2 inches apart) and cover with soil.

Marigolds and Nasturtiums

- Give two to four nasturtium seeds and a generous pinch of marigold seeds to the students.
- Have them plant the nasturtium seeds about 1/2 inch deep near the tomato/basil ends of the beds and cover with soil. Marigold seeds should be sprinkled and spread out, then covered.



Water and Garden Care

- Check to make sure all seeds are covered with soil.
- If time allows, have students water and feed the garden with vermicast (about 1 cup per class dissolved in a bucket of water).
- Optional: Place a cover cloth over the garden bed to protect the seeds from the sun and birds. Students and teachers must check for sprouts every day and take the cloth off of the garden as soon as the sprouts emerge.



CLOSING

5 MINUTES

Gather all the students in the garden. Ask them to share about their experience.

Discuss with students:

- What are COMPANION PLANTS?
- Name the four pairs of companion plants that we planted today.
- Explain how these companion plants help each other.

“Please take good care of your gardens and make sure to water and visit them every day. It is very important that the soil stays moist so the seeds will sprout and grow! The seeds will begin to sprout in the next few days. Check for them by looking under the cover cloth every day! Take the cover cloth off of the garden as soon as the sprouts are showing.”

All students must wash their hands thoroughly with soap and water after working in the garden. Demonstrate the proper hand washing method: Wet, lather, and scrub hands and wrists with soap for 15 seconds (sing the ABC's), then rinse thoroughly. Be conscious of keeping hands clean after washing. Explain that washing our hands keeps us healthy!



FOLLOW UP GARDEN CARE

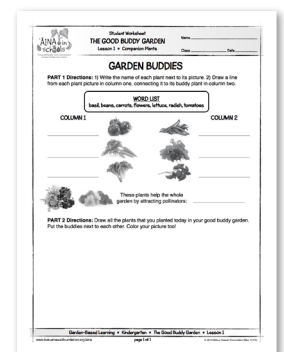
Follow Up Garden Care is the responsibility of the classroom teacher and students.

- Assign one or more **Garden Monitors** to water the garden and check for sprouts every day. Supplement as needed; it is critical that the soil stay evenly moist during sprouting. Feel the soil with your hand to a depth of about 2 to 3 inches to ensure that the soil is adequately moist.
- If the soil is covered with a cover cloth, remove it as soon as the first sprouts appear (within about 4 to 10 days). Hang to dry and store for future use.
- Remove weeds from in and around the garden bed.
- As the tomato plants grow, tie them gently to their staking poles using twine or t-shirt string.
- Students must wash their hands thoroughly with soap and water after working in the garden.

FOLLOW UP ACTIVITIES

Follow Up Activities are the responsibility of the classroom teacher.

- Have students complete the Garden Agreements and Garden Buddies Student Worksheets.
- Store the mural in a safe place for use during Lesson 2.
- Have students make daily or weekly garden observations and journal entries including notes, drawings, poems, stories, etc.
- Send home Take Home Letter.



Student Worksheet:
Garden Buddies

LESSON EXTENSIONS

Natural Diversity of Plants

(Analyzing and Interpreting Data)

1. As the sprouts grow in the garden, observe them closely with students to identify how the same kinds of plants differ from each other.
2. Take students on a “Natural Diversity Scavenger Hunt” around campus, observing, drawing, and making notes about the many different kinds of plants that are found.
3. Select one or more of the vegetable types growing in the garden, and explore the many varieties that exist and are grown by farmers in Hawai'i and around the world. For example, tomatoes come in many different varieties such as “Kewalo” or “Big Rainbow”, each with its own special characteristics. Many online resources exist for exploring more vegetable varieties, such as Hawai'i Seed Growers Network (www.hawaiiseedgrowersnetwork.com) and www.seedsavers.org.

What's In A Plant?

(1.RL.1, 1.W.1, 1.SL.1, 1.SL.2)

1. Read *Little Yellow Pear Tomatoes* by Demian Elaine Yumei with students to discover how a beloved garden plant holds many things inside itself, even the stars!
2. Have students ask and answer key details about the story and write opinion pieces about the book.

Life Cycle and Plant Part Review

(Patterns)

1. Observe and review the life cycle and plant parts with students. These topics were covered in previous 'ĀINA In Schools garden units (The Tops and Bottoms Garden and The Little Seeds, Big Plants Garden).
2. Have students observe and draw their garden plants each week in order to experience the life cycle of their plants. Have them label the plant parts in their drawings.





Student Worksheet
THE GARDEN AGREEMENTS

Name

Class Date

Directions: Draw a picture of you in the garden following the Garden Agreements.
Color the Garden Agreements on page 2.

I WILL BE SAFE

*

I WILL BE KIND

*

**I WILL HAVE
AN OPEN MIND**

*

**I WILL USE
MY TIME WELL**

GARDEN BUDDIES

Part 1 Directions: 1) Write the name of each plant next to its picture. 2) Draw a line from each plant picture in column one, connecting it to its buddy plant in column two.

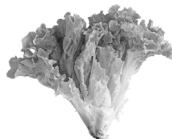
WORD LIST
basil, beans, carrots, flowers, lettuce, radish, tomatoes

COLUMN 1

COLUMN 2









These plants help the whole garden by attracting pollinators: _____



Student Worksheet
THE GOOD BUDDY GARDEN
Lesson 1 * Companion Plants

Name

Class Date

Part 2 Directions: Draw all the plants that you planted today in your good buddy garden. Put the buddies next to each other. Color your picture too!

DESCRIPTION

Students will discover how certain creatures help or harm the garden by playing the Garden Creature Game. In the garden students will explore and discover the creatures that inhabit their garden. Students will add creatures to the Good Buddy Mural they began in Lesson 1 and harvest any available lettuce and radishes from the garden.

TIME: 45 minutes

SUBJECTS: Fine Arts, Health, Language Arts, Science

LEARNING OBJECTIVES

After this lesson students will be able to:

- Identify garden creatures and describe how they help or harm the garden.
- Understand that healthy gardens are filled with a variety of plants and creatures.
- Properly harvest and wash their garden vegetables before eating them.
- Care for their gardens by watering, weeding, and feeding.

ACADEMIC STANDARDS*

CCSS, Language Arts: 1.W.3, 1.W.8, 1.SL.5
HCPS III: FA.1.1.1, FA.1.1.2, FA.1.1.5, HE.K-2.1.7,
NGSS: Obtaining, Evaluating, and Communicating Information, Patterns, Systems and System Models
Lesson Extensions: Analyzing and Interpreting Data

*A detailed list of the Academic Standards can be found in the Unit Overview document.

LESSON OUTLINE

- I. Introduction (15 minutes)
 1. Companion Plants Review
 2. Garden Creature Game
 3. Caring for the Garden
 4. Group Activities Overview
- II. Group Activities (25 minutes)
 1. Mural Activity (12 minutes)
 2. Radish Harvest and Garden Care (12 minutes)
- III. Snack and Closing (5 minutes)



KEY TERMS AND CONCEPTS

Beneficial - Good, helpful

Decomposers - Creatures that break down dead or decaying material into simpler forms of matter, recycling nutrients and creating soil (e.g., millipedes, sow bugs, slugs, and snails)

Harvest - To gather edible crops and seeds

Pest - An insect or animal that harms (hurts) plants

Pollinator - An insect or animal that carries pollen from one flower to another and helps to create seeds



LESSON MATERIALS

Community Supplies:

- Harvest basket
- Colander
- Large bowl
- 2 plastic dish tubs (for scrubbing radishes and washing hands)
- 3 scrub brushes
- Soap (squeeze bottle, for washing hands)
- Cutting board
- 2 large platters (for serving sliced radishes)
- 2 small bowls (for optional salad dressing)
- Vermicast (about 1 cup per class)

Lesson Supplies:

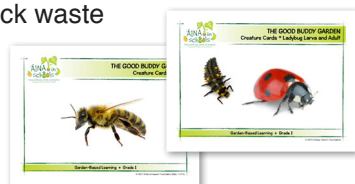
- Plant Buddy Signs (4)
- Plant Buddy Sorting Cards (30)
- Creature Cards (12): Bee, butterfly, ladybug, worm, toad, slug, snail, millipedes, centipede, sow bug, aphids, ant
- Garden Creatures Sign
- Harvest Song Sign
- Garden Agreements Sign
- Student Workbook

Teaching Team to Provide:

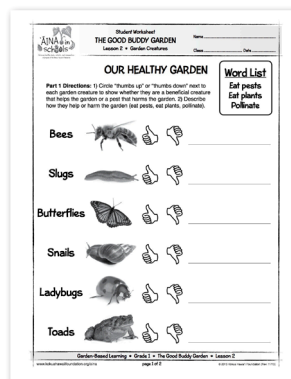
- 2 sheets or blankets, each big enough for 10 to 12 students to sit on
- Knife (for adult use only, for slicing radishes)
- Optional: Salad dressing for radish tasting

School to Provide:

- Color markers and/or crayons
- Good Buddy Mural (from Lesson 1)
- Bucket and cups for watering and snack waste



Creature Cards



Student Worksheet:
Our Healthy Garden

ACCOMPANYING DOCUMENTS

- Student Worksheet: Our Healthy Garden

ADVANCE PREPARATION

- Discuss lesson preparation and presentation plans with your teaching team.
- Make copies of the Student Worksheet, double sided, one per student if not using the Student Workbook.
- In preparation for the Group Activities, check the garden to see what vegetables are ready to harvest, including radishes, lettuce, and beans.
- Harvest 2 to 3 mature radishes from the garden for each class. Show them to students during the Introduction, then have a docent scrub, rinse, and slice them thin in preparation for the radish tasting during the Snack and Closing (teaching team to provide knife, for adult use only). Optional: Purchase or prepare salad dressing to accompany the radishes during the tasting.
- Have the Good Buddy Mural ready (from Lesson 1).



INTRODUCTION

15 MINUTES

“Today we will learn about some of the insects and animals that visit the garden and whether they help or harm (hurt) our garden plants. In the garden we will look for creatures that live in our garden! We will also finish the Good Buddy Mural from our last lesson.”

COMPANION PLANTS REVIEW

“Do you remember what we did in our last lesson? How did the companion plants help each other?” Use the Plant Buddy Diagrams to review how certain plants work together.

GARDEN CREATURE GAME

“Did you know that plants have other buddies too? Some creatures help our garden plants. They are called **BENEFICIAL** because they help, or benefit, our garden plants.” Show thumbs up. Have students repeat the word beneficial.

“Many beneficial creatures are **DECOMPOSERS** who help make soil and recycle nutrients by breaking down dead or decaying material (e.g., fallen leaves) into smaller and smaller pieces.”

“Other beneficial creatures are **POLLINATORS** who help create seeds by carrying pollen from one flower to another.”

“There are also some creatures that are not good buddies to our garden plants. They are called **PESTS** because they can harm our garden plants.” Show thumbs down. Have students repeat the word pest.

“Let's play the Garden Creature Game and learn which insects and animals help or harm the garden.”

Hold up the Creature Cards one at a time having students share:

1. What is the name of this creature?
2. Give it a thumbs up or thumbs down. Is it a beneficial insect that helps the garden? Or is it a pest that harms the garden?
3. Discuss the job of each creature, and how they help or harm our garden plants.

- **Bees** - (beneficial) Bees are pollinators. They help the flowers make new seeds.



- **Butterflies** - (beneficial) Butterflies are pollinators. They help the flowers make new seeds.



- **Slugs and Snails** - (pests) Slugs and snails love to eat plants in the garden. They love lettuce, beans, and carrots. It's important to keep them out of the garden. Outside of the garden, slugs and snails are helpful because they break down organic matter, thereby helping to recycle nutrients and create soil.



- **Worms** - (beneficial) Worms are decomposers, one of the best friends for the garden. They help to recycle nutrients in the soil and make the soil soft. They help the plants grow.



- **Ladybugs** - (beneficial) Ladybugs are pollinators, they also eat hundreds of garden pests each day (especially aphids).



- **Toads** - (beneficial) Toads help the garden by eating slugs and centipedes!



- **Millipedes (red and black types)** - (beneficial and pest) Millipedes are decomposers; they break down dead or decaying material into simpler forms of matter, creating soil. NOTE: When overly abundant, millipedes may feed on young sprouts (i.e., they are sometimes pests).



INTRODUCTION

CONTINUED

• **Sow Bugs** - (beneficial and pest) Sow bugs are decomposers; they break down dead or decaying material into simpler forms of matter, creating soil. NOTE: When overly abundant, sow bugs may feed on root crops (i.e., they are sometimes pests).



• **Ants** - (beneficial and pest) Ants are decomposers; they break down dead or decaying material into simpler forms of matter, creating soil. However, they sometimes also “farm” (cultivate and protect) aphids and other pests on plants in exchange for a sweet honeydew that these insects secrete.



• **Centipedes** - (beneficial and pest) Centipedes can bite, so they can be a pest. However, they eat other insects in the garden and help to maintain a healthy balance of life, so they are also beneficial. Be sure not to bother or touch them!



• **Aphids** - (pest) Aphids are very small soft-bodied insects that can harm garden plants by sucking the sap from their leaves. They are often found on the underside of leaves. Aphids have many natural predators, including adult ladybugs and their larvae.



“How can we tell the difference between millipedes and centipedes?”

- Centipedes move very quickly, and millipedes move slowly.
- Millipedes are usually smaller than centipedes (except for baby centipedes).
- Millipedes are OK to hold gently in your open hand (not closed fist).
- Do not touch centipedes! Ask an adult if you think you see one and they will remove any centipedes from the garden by trapping them in a bucket and moving them to a different location.

“Today we will go to the garden and discover what creatures live there!”

GROUP ACTIVITIES OVERVIEW

“Today we will also harvest, wash, and eat some of our radishes!” Show 2 to 3 harvested radishes. “After we have harvested we can help the garden by feeding it nutrients (food) from worms. This is called vermicast and it is very healthy for plants.” Show vermicast. “The more we give love and care to our garden, the more it will give back to us.”

Sing the Harvest Song twice with students so that they will remember to use two hands while harvesting and to wash their vegetables before they are eaten. Remind students when harvesting radishes to wiggle it like a loose tooth!

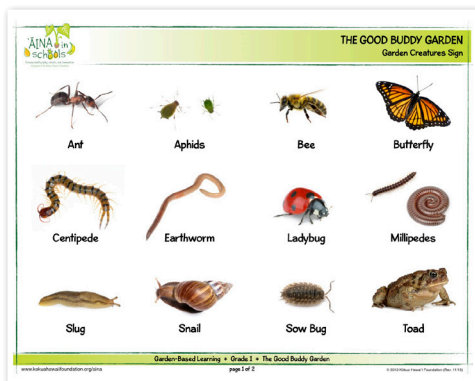
Garden Agreements

Have students take a deep breath, then review the Garden Agreements:

- I will be SAFE
- I will be KIND
- I will have an OPEN MIND
- I will use my TIME WELL



Divide the students into two groups before going outside. “One group will draw garden creatures in our Good Buddy Mural and the other will harvest and care for our garden, then we will switch.”



Garden Creatures Sign

GROUP ACTIVITIES

25 MINUTES

Rotate groups after 12 minutes. Regroup for closing.

MURAL ACTIVITY (12 minutes)

In the classroom students will finish their mural from Lesson 1 by drawing any garden creatures, including the ones that were discussed today (bees, butterflies, slugs, snails, worms, toads, ladybugs, millipedes, aphids, centipedes, sow bugs), especially ones that they observe in their garden.

RADISH HARVEST AND GARDEN CARE (12 minutes)

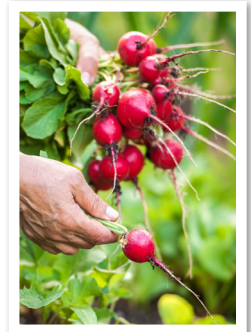


All students must wash their hands well with soap and water before coming to the garden to harvest. Keep the harvest basket clean by keeping it off of the ground. Garden produce must be washed before being eaten.

Harvest:

- Sing the Harvest Song with students.
- Harvest fresh lettuce leaves by gently twisting off one leaf at a time using two hands (hold the plant with one hand, gently twist off the leaf with the other).
- Harvest fresh green beans by using two hands to gently twist off any slender, fresh beans (hold the plant with one hand, gently twist off the bean with the other).
- Rinse and rub the leaves and beans under running water.

- Harvest any mature radishes. Shake or brush off any soil so that it stays in the garden bed. Scrub the radishes with scrub brushes and rinse them under running water.
- Be sure to leave enough for both groups to harvest.

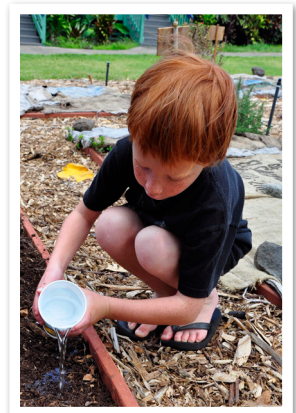


Garden Creature Exploration and Companion Plants Observation:

- Look for garden creatures. Hold friendly creatures very gently and be sure to put them back in their home.
- Observe the garden plants and discuss how they are helping each other.

Garden Care:

- Remove weeds.
- Have students in group 1 take turns watering the soil gently with their watering can or cups (like rain, not waterfalls; allowing the soil to “sip and swallow”).
- After all harvesting is finished, have students in group 2 add about 1 cup of vermicast to the garden. If the vermicast is moist, dissolve it in water and water the soil with the nutrient-rich water. If the vermicast is dry, sprinkle it over the soil and mix it in lightly.
- Remind students to water the garden thoroughly every day.



All students must wash their hands thoroughly with soap and water after working in the garden and before eating their snack.

CLOSING AND SNACK

5 MINUTES

Have the students be seated on the sheets or blankets in a circle near the garden. Ask them to share about their experience.

Discuss with students:

- What types of vegetables did you harvest today?
- What garden creatures did you observe?
- Describe how different creatures are BENEFICIAL or PESTS.

After washing hands, enjoy the garden fresh snack with students. Have students share what they are thankful for before eating.



Place the sliced radishes and any other fresh garden vegetables in a bowl or on a platter and fill the small bowls with dressing (optional). Students can choose the vegetables they like to eat and dip them in the salad dressing. No double dipping!

“Thank you for caring for your garden today and for harvesting the garden vegetables. In our next lesson we will harvest and eat more of our garden vegetables! Please continue to water and visit your garden every day!”

Students may take their radishes and any other available vegetables home to share with their families.

Have students place snack waste in a bucket and then add it to the school’s compost pile when finished.

FOLLOW UP GARDEN CARE

Follow Up Garden Care is the responsibility of the classroom teacher and students.

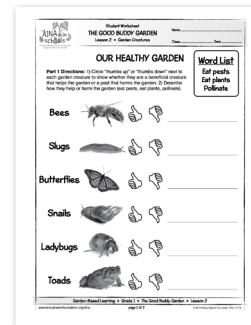
- Continue to have Garden Monitors and other students water and visit the garden daily.
- Remove weeds from in and around the garden bed.
- Continue to have students harvest, wash, and eat the garden vegetables (lettuce, radishes, beans, tomatoes, basil) as available. Save carrots for the Harvest Party (Lesson 4). Students must wash their hands before harvesting. Garden produce must be washed before being eaten.
- As the tomato plants grow, tie them gently to their staking poles using twine or t-shirt string.
- Students must wash their hands thoroughly with soap and water after working in the garden.



FOLLOW UP ACTIVITIES

Follow Up Activities are the responsibility of the classroom teacher.

- Have students complete the Our Healthy Garden Student Worksheet.
- Have students make daily or weekly garden observations and journal entries including notes, drawings, poems, stories, etc.
- Display the Good Buddy Mural in your classroom.



Student Worksheet:
 Our Healthy Garden

LESSON EXTENSIONS

Natural Diversity of Garden Creatures
 (Obtaining, Evaluating, and Communicating Information, Analyzing and Interpreting Data)

1. In the garden, have students gently collect and closely observe many garden creatures (e.g., millipedes, sow bugs, worms) of the same kind and identify how the same kinds of creatures differ from each other.
2. Have students draw, label, and describe the creatures they observe in the garden and write stories, poems, or songs about them.
3. Take students on a “Natural Diversity Scavenger Hunt” around campus, observing, drawing, and making notes about the many different kinds of animals that are found.
4. Learn more about one or more of the garden creatures discussed during the lesson. What is their life cycle, what do they eat, where do they live, where did they come from and when did they come to Hawai‘i?



OUR HEALTHY GARDEN

Word List

Eat pests
Eat plants
Pollinate

Part 1 Directions: 1) Circle “thumbs up” or “thumbs down” next to each garden creature to show whether they are a beneficial creature that helps the garden or a pest that harms the garden. 2) Describe how they help or harm the garden (eat pests, eat plants, pollinate).

Bees



Slugs



Butterflies



Snails



Ladybugs



Toads



Part 2 Directions: Answer the questions below about the radish that you harvested today from your Good Buddy Garden.

1. What is the radish's buddy plant in the garden?
a) carrots b) lettuce c) beans
2. What does the radish do to help its buddy plant?
a) feed it b) shoo away the bugs c) give it shade



3. With an adult, wash, slice and eat your radish. Radishes taste great in salads! What did your radish taste like?

4. Did you like it? Why or why not?

5. Look at your radish and draw a picture of it in the space below.

DESCRIPTION

Students will share garden observations and discuss the elements of nature that are important for the garden's growth: sun, air, water, and soil. In the garden they will harvest, wash and eat any available vegetables, and care for the garden by watering, weeding, and fertilizing with compost and vermicast. They will read the *Living Sunlight* story and learn about photosynthesis.

TIME: 45 minutes

SUBJECTS: Health, Language Arts, Science

LEARNING OBJECTIVES

After this lesson students will be able to:

- Explain how garden plants and creatures help each other and how people help the garden.
- Understand how the elements of nature help the garden.
- Understand the significance of the sun's energy in the process of photosynthesis to create food for plants, and the important role that plants play in helping to sustain life on Earth.
- Properly harvest and wash their garden vegetables before eating them.



ACADEMIC STANDARDS*

CCSS, Language Arts: 1.RI.1, 1.RI.2, 1.W.3, 1.W.8, 1.SL.5 **HCPS III:** HE.K-2.1.7 **NGSS:** Obtaining, Evaluating, and Communicating Information, Patterns, Systems and System Models **Lesson Extensions:** 1.RL.1, 1.W.1, 1.W.5, 1.SL.1, 1.SL.2, 1.SL.5, Analyzing and Interpreting Data

*A detailed list of the Academic Standards can be found in the Unit Overview document.

LESSON OUTLINE

- I. Introduction (10 minutes)
 1. Nature's Elements
 2. Group Activities Overview
- II. Group Activities (30 minutes)
 1. Living Sunlight (15 minutes)
 2. Garden Activity (15 minutes)
- III. Closing and Snack (5 minutes)

KEY TERMS AND CONCEPTS

Air - The invisible gaseous substance surrounding the earth, a mixture mainly of nitrogen and oxygen

Photosynthesis - One of the most important life processes on earth, by which plants convert water, carbon dioxide, and the sun's energy into sugars (carbohydrates; food) and oxygen

Soil - The upper layer of earth in which plants grow, a mixture of organic matter, minerals, air, and water

Sun - The star around which the earth orbits and which provides the light and energy that sustain life on earth

Water - A colorless, odorless compound of hydrogen and oxygen; when in its liquid state forms the seas, lakes, rivers, and rain and is the basis of the fluids of living organisms

LESSON MATERIALS

Community Supplies:

- Harvest basket
- Colander
- Large bowl
- 2 plastic dish tubs (for scrubbing radishes and washing hands)
- 3 scrub brushes
- Soap (squeeze bottle, for washing hands)
- Cutting board
- 2 large platters (for serving vegetables to eat)
- 2 small bowls (for optional salad dressing)
- Vermicast (about 1 cup per class)

Lesson Supplies:

- Book: *Living Sunlight: How Plants Bring the Earth to Life* by Molly Bang and Penny Chisholm
- Nature's Elements Signs (4): Sun, air, water, soil
- Harvest Song Sign
- Garden Agreements Sign
- Student Workbook

Teaching Team to Provide:

- A sheet or blanket big enough for 10 to 12 students to sit on
- Knife (for adult use only, for slicing radishes)
- Optional: Salad dressing for vegetable snack

School to Provide:

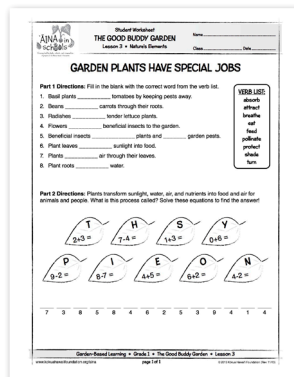
- Bucket and cups for watering and snack waste
- Optional: Compost (about 1/2 bucket per class)
- Optional: Mulch (about 1 bucket per class)

ACCOMPANYING DOCUMENTS

- Student Worksheet: Garden Plants Have Special Jobs

ADVANCE PREPARATION

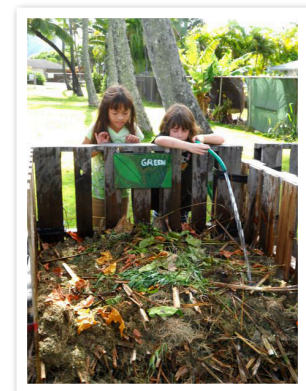
- Discuss lesson preparation and presentation plans with your teaching team.
- Make copies of the Student Worksheet, one per student if not using the Student Workbooks.
- In preparation for the Group Activities, check the garden to see what vegetables are ready to harvest, including radishes, lettuce, and beans.
- Review the *Living Sunlight* book. Optional: Read the "Notes About This Book" on the last four pages of the book for more detailed information about the important concepts discussed.
- Optional: Harvest compost and mulch from the school's compost and mulch piles.



Student Worksheet:
Garden Plants Have
Special Jobs



Harvest Song Sign



Aerobic composting on campus reduces waste, creates a valuable soil amendment, and offers many exciting learning opportunities.

INTRODUCTION

10 MINUTES

Invite students to share any garden observations they have made. Ask them to describe some of the ways the plants and creatures in the garden are helping each other (“good buddies”).

“People help gardens grow too. What can we give to our garden to help it grow?” Desired answers: Water, nutrients, love, speaking kindly and singing, etc.

“Today we will help our garden by giving it compost and vermicast in order to add nutrients and life to the soil.”

“What does our garden give to us in return?” Desired answers: Vegetables, beauty, fresh air, etc.

“Today we will harvest some of our garden vegetables!” Sing the Harvest Song with students.
“We will wash our hands well before harvesting and wash our vegetables well before eating!”

NATURE'S ELEMENTS

“Nature helps the garden grow too. How?” Discuss nature’s elements and the parts of plants that utilize them. Show the Nature’s Elements Signs.

Sun: “The SUN sends energy to the earth, giving it warmth and light. What part of the plant absorbs the sun’s energy? Leaves absorb energy from the sun and turn it into food! This process is called PHOTOSYNTHESIS. Today we will read a beautiful book about how the sun brings life to plants and people!”



Air: “Plants breathe AIR in and out through their leaves. Plants clean the air and make it fresh for us to breathe.”



Water: “What part of the plant absorbs WATER? The roots. Water is essential for all life. How does nature water the garden? The plants and soil receive water from the clouds when it rains. If there is no rain, we can help the garden by giving it water.” Optional: Discuss where faucet water comes from: Rain to groundwater to pumps and pipes!



Soil: “Roots absorb nutrients (food) from the SOIL. Roots hold onto the soil so the plant can grow healthy and strong. Which garden creatures help create soil? Soil dwellers such as millipedes, sow bugs, and worms.”



GROUP ACTIVITIES OVERVIEW

“In the garden today one group will read the *Living Sunlight* book and discuss the very important role of plants, and the other group will harvest, explore, and care for the Good Buddy Garden, then we will switch.”

Garden Agreements

Have students take a deep breath, then review the Garden Agreements:

- I will be SAFE
- I will be KIND
- I will have an OPEN MIND
- I will use my TIME WELL



Divide the students into two groups before going outside.

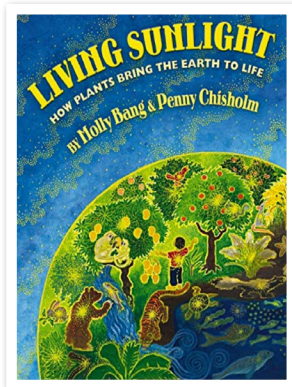
GROUP ACTIVITIES

30 MINUTES

Rotate groups after 15 minutes. Regroup for closing.

LIVING SUNLIGHT (15 minutes, on a blanket near the garden)

Have the students be seated on the sheet or blanket in a circle near the garden. Read *Living Sunlight: How Plants Bring the Earth to Life* by Molly Bang and Penny Chisholm. This book demonstrates the presence of the sun's energy on Earth, the very important role of plants, and the process of PHOTOSYNTHESIS. Have students ask and answer questions about key details in the book and identify the main topics.



GARDEN ACTIVITY (15 minutes)

All students must wash their hands well with soap and water before coming to the garden to harvest. Keep the harvest basket clean by keeping it off of the ground. Garden produce must be washed before being eaten.

Harvest:

- Sing the Harvest Song with students.
- Each student may carefully harvest fresh lettuce and basil leaves, nasturtium flowers (edible), beans, tomatoes, and radishes from their class' garden. Leave carrots for the Harvest Party (Lesson 4).
- Have an adult prepare the radishes for the snack by scrubbing, rinsing, and slicing them thin.
- Rinse and thoroughly rub/scrub the vegetables under running water. Students may snack on them during the closing or take them home.
- Be sure to leave enough for both groups to harvest.



Garden Creatures, Companion Plants, and Nature's Elements Observation:

- Look for garden creatures. Hold friendly creatures very gently and be sure to put them back in their home.
- Observe the garden plants and discuss how they are helping each other.
- Observe the elements of nature (sun, air, water, soil), how they help the garden, and what parts of the plants interact with each element.



Garden Care:

- Remove weeds.
- Have students take turns watering the soil gently with their watering can or cups (like rain, not waterfalls; allowing the soil to "sip and swallow").
- After all harvesting is finished, add about 1 cup of vermicast to the garden. If the vermicast is moist, dissolve it in water and water the soil with the nutrient-rich water. If the vermicast is dry, sprinkle it over the soil and mix it in lightly.
- Optional: Add handfuls of compost around the base of plants and gently mix it into the soil. Brush compost off of the leaves. Place mulch over the soil to preserve moisture and discourage weeds.
- Remind students to water the garden thoroughly every day.

All students must wash their hands thoroughly with soap and water after working in the garden and before eating their snack.



CLOSING AND SNACK

5 MINUTES

Have the students be seated on the sheets or blankets in a circle near the garden. Ask them to share about their experience.

Discuss with students:

- What types of vegetables did you harvest today?
- Describe your observation of nature's elements in the garden today.
- What is PHOTOSYNTHESIS?

After washing hands, enjoy the garden fresh snack with students. Have students share what they are thankful for before eating.



Place the sliced radishes and other fresh garden vegetables in a bowl or on a platter and fill the small bowls with dressing (optional). Students can choose the vegetables they like to eat and dip them in the salad dressing. No double dipping!

“Thank you for caring for your garden today and for harvesting the garden vegetables! In our next lesson we will have a Harvest Party! We will harvest our carrots and make Harvest Party hats. Please continue to water and visit your garden every day!”

Students may take any remaining vegetables home to share with their families.

Have students place snack waste in a bucket and then add it to the school's compost pile when finished.

FOLLOW UP GARDEN CARE

Follow Up Garden Care is the responsibility of the classroom teacher and students.

- Continue to have Garden Monitors and other students water and visit the garden daily.
- Remove weeds from in and around the garden bed.
- Continue to have students harvest, wash, and eat the garden vegetables (lettuce and basil leaves, nasturtium flowers, beans, tomatoes, and radishes) as available. Save carrots for the Harvest Party (Lesson 4). Students must wash their hands before harvesting. Garden produce must be washed before being eaten.

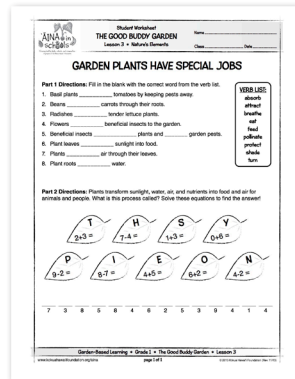
- As the tomato plants grow, tie them gently to their staking poles using twine or t-shirt string.
- Students must wash their hands thoroughly with soap and water after working in the garden.



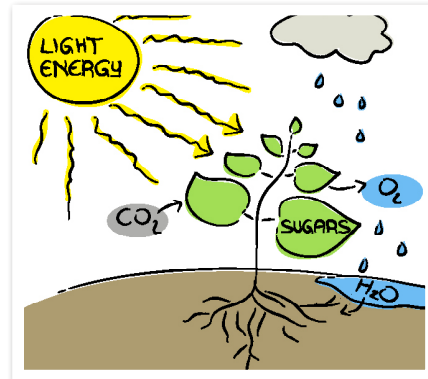
FOLLOW UP ACTIVITIES

Follow Up Activities are the responsibility of the classroom teacher.

- Have students complete the Garden Plants Have Special Jobs Student Worksheet.
- Have students make daily or weekly garden observations and journal entries including notes, drawings, poems, stories, etc.
- Discuss photosynthesis with students.



Student Worksheet:
Garden Plants Have
Special Jobs



LESSON EXTENSIONS

Gardening With Nature

(1.W.5, 1.SL.5, SC.1.1.1, SC.1.2.2, Analyzing and Interpreting Data)

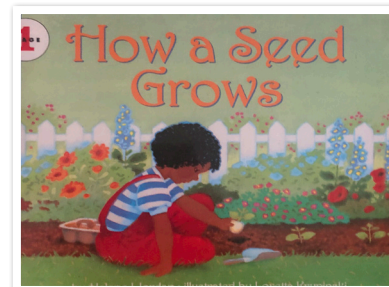
1. Have students observe and describe the elements of nature and how they help the gardens. Draw pictures and write poems, stories, and songs.
2. Have students measure and record daily/weekly temperature and rainfall with a thermometer and rain gauge in the garden.
3. Discuss how seasonal changes affect plants and wildlife here in Hawai'i, compared to other parts of the world.



How a Seed Grows

(1.RL.1, 1.W.1, 1.SL.1, 1.SL.2)

1. Read *How a Seed Grows* by Helene J. Jordan with students to discover the different stages of a seed's growth!
2. Prepare planter pots using egg shells like in the story, or use easy to acquire materials such as old pots or reusable containers.
3. Have students observe the seeds at different stages of growth. Discuss with students how the seeds are changing.



GARDEN PLANTS HAVE SPECIAL JOBS

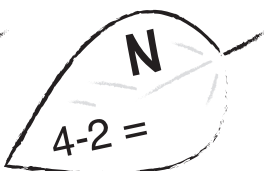
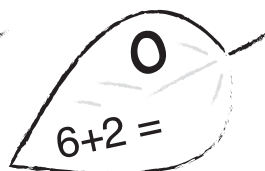
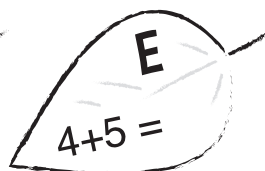
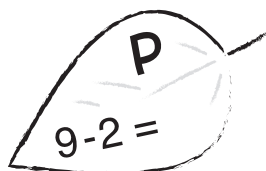
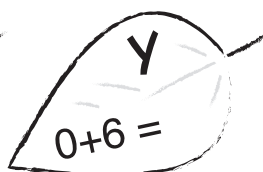
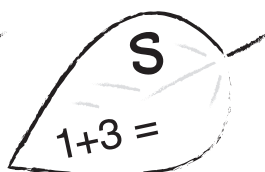
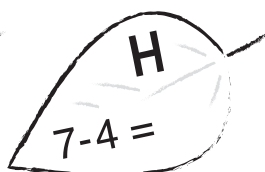
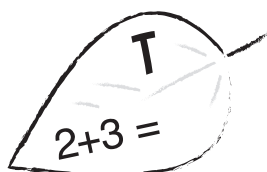
Part 1 Directions: Fill in the blank with the correct word from the verb list.

1. Basil plants _____ tomatoes by keeping pests away.
2. Beans _____ carrots through their roots.
3. Radishes _____ tender lettuce plants.
4. Flowers _____ beneficial insects to the garden.
5. Beneficial insects _____ plants and _____ garden pests.
6. Plant leaves _____ sunlight into food.
7. Plants _____ air through their leaves.
8. Plant roots _____ water.

VERB LIST:

absorb
attract
breathe
eat
feed
pollinate
protect
shade
turn

Part 2 Directions: Plants transform sunlight, water, air, and nutrients into food and air for animals and people. What is this process called? Solve these equations to find the answer!



7 3 8 5 8 4 6 2 5 3 9 4 1 4



Student Worksheet
THE GOOD BUDDY GARDEN
Lesson 3 * Nature's Elements

Name

Class Date

Part 3 Directions: Draw a picture of you and your Good Buddy Garden plants in nature's elements.

DESCRIPTION

This is the Harvest Party celebration! Students will review how companion plants, garden creatures, nature's elements, and people are good buddies that help each other. Students will discuss the health benefits of eating fresh vegetables and exercising, then make Harvest Party hats and harvest, wash, give gratitude for, and enjoy the fresh vegetables from their Good Buddy Garden.

TIME: 55 minutes**

SUBJECTS: Fine Arts, Health, Language Arts

LEARNING OBJECTIVES

After this lesson students will be able to:

- Understand the health benefits of spending time in the garden and eating fresh vegetables.
- Identify carrot, bean, radish, lettuce, tomato, basil, nasturtiums, and marigold plants and their roles as companion plants.
- Understand how garden creatures and nature's elements help the garden.
- Properly harvest and wash their garden vegetables before eating them.
- Recognize that gardens are a wonderful source of food, health, sharing, and celebration.

ACADEMIC STANDARDS*

CCSS, Language Arts: 1.W.3, 1.W.8, 1.SL.5
HCPS III: FA.1.1.1, FA.1.1.2, FA.1.1.5, HE.K-2.1.2, HE.K-2.1.3, HE.K-2.1.5, HE.K-2.1.7, HE.K-2.7.1
NGSS: Patterns, Systems and System Models
Lesson Extensions: HE.K-2.5.4, HE.K-2.6.2

*A detailed list of the Academic Standards can be found in the Unit Overview document.

LESSON OUTLINE

- I. Introduction (15 minutes)
 1. Good Buddy Garden Review
 2. Harvesting For Health!
 3. Group Activities Overview
- II. Group Activities (30 minutes)
 1. Garden Harvest (15 minutes)
 2. Harvest Party Hats (15 minutes)
- III. Harvest Party (10 minutes)**



KEY TERMS AND CONCEPTS

- Gratitude** - To be grateful or give thanks
Harvest - To gather edible crops and seeds
Seed Saving - The practice of harvesting, drying, and saving seeds for future planting



**Note: This lesson is designed so that the Introduction and Group Activities take place within 45 minutes. If time permits, the Harvest Party may be extended and multiple classes and invited guests (parents, administrators, etc.) may gather to enjoy the celebration together.

LESSON MATERIALS

Community Supplies:

- Stapler and extra staples
- Harvest basket
- Colander
- Large bowl
- 2 plastic dish tubs (for washing vegetables and hands)
- 3 scrub brushes
- Soap (squeeze bottle, for washing hands)
- 2 large platters (for serving vegetables to eat)
- 2 small bowls (for salad dressing)

Lesson Supplies:

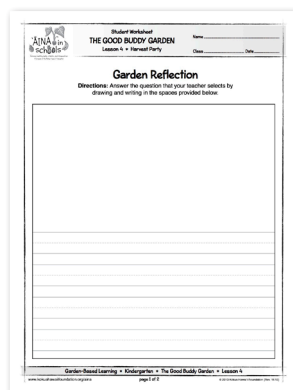
- Creature Cards (12)
- Harvest Song Sign
- Garden Agreements Sign
- Paper for making Harvest Party hats (see Advance Preparation)
- Student Workbook

Teaching Team to Provide:

- 2 sheets or blankets, each big enough for 10 to 12 students to sit on
- Optional: Salad dressing (purchase or prepare 1 large bottle per school)
- Optional, if necessary: Fresh local vegetables (1/2 head of lettuce per class, 1 bag of cherry tomatoes per class, 1 bag of green beans per class, 1 bunch of cut carrots per class) from grocery store, farmers' market, or other gardens
- Optional: Pipe cleaners to staple to Harvest Party hats as antennae

School to Provide:

- Color markers and/or crayons
- Bucket and cups for watering and snack waste



Student Worksheet:
Garden Reflection

ACCOMPANYING DOCUMENTS

- Harvest Party Invitations
- Student Worksheet: Garden Reflection
- ĀINA Post-Unit Survey

ADVANCE PREPARATION

- Discuss lesson preparation and presentation plans with your teaching team.
- If parents and/or administration are being invited to attend this lesson, print, cut, and send Harvest Party Invitations home with students one week before the lesson.
- Make copies of the Student Worksheet, one per student if not using the Student Workbook.
- Prepare the Harvest Party hats (1 per student) by cutting the paper into strips, approximately 24 inches long by 1.5 inches wide.
- Arrange the sheets or blankets in a circle for snack time.
- Set up the washing station with wash bins, clean water, scrub brushes, and soap (for washing hands).
- Optional: Purchase and/or prepare any necessary food items (salad dressing and vegetables; see Lesson Materials: Teaching Team To Provide).
- Optional: Make sample Harvest Party hats to show students that incorporate creature patterns. Ladybug = red with black spots, bee = yellow and black stripes.



Harvest Party Invitations

INTRODUCTION

15 MINUTES

“Today is our Harvest Party! We will go to the garden to harvest, wash and eat our vegetables, make Harvest Party hats, and put the garden bed to rest.”

GOOD BUDDY GARDEN REVIEW

Review with students:

- How are the plants good buddies to each other?
- How are beneficial creatures good buddies to the plants?
- How are nature’s elements good buddies to the garden?
- How is the garden our good buddy?

HARVESTING FOR HEALTH!

“What does HARVEST mean?” Desired answer: To pick or gather our vegetables from the garden.

“We will wash our hands well with soap and water before harvesting.” Sing the Harvest Song with students and use it to review the steps for proper harvesting (i.e., holding the plant with one hand and gently picking the vegetables with the other).

“What kinds of vegetables will we harvest today?” Accept a few student answers.

“Why is it important to eat whole, fresh vegetables?” Desired answers:

- They are close to the source and filled with vitamins and minerals (nutrients) that our bodies need in order to work properly and to stay healthy.
- Vitamins and minerals make our immune system strong (keep us from getting sick), keep our skin and our eyes healthy, make our bones and muscles strong, and help us grow!



“Are we exercising when we are in the garden? Why is exercise important?” Desired answers:

- In the garden we move around and stay active and fill our lungs with fresh air.
- Exercising keeps our bodies and minds healthy and strong.

“Is it easy and fun to grow a vegetable garden? Raise your hand if you have a garden at home.” Accept a few student answers.

“Great! If you don’t already have a garden, raise your hand if you want to ask your family to start one...even a small container garden.”

GROUP ACTIVITIES OVERVIEW

“In the garden today, one group will harvest and another group will make Harvest Party hats, then we will switch. After that we will enjoy our fresh garden snack together!”



“You can pretend to be one of the garden creatures by drawing its pattern on your hat!” For example: ladybug = red with black spots; bee = yellow with black stripes. Show students the Creature Cards. Optional: Make sample hats to show. “You can also pick some flowers or leaves to staple onto your Harvest Party hat.”

Garden Agreements

Have students take a deep breath, then review the Garden Agreements:

- I will be SAFE
- I will be KIND
- I will have an OPEN MIND
- I will use my TIME WELL



Divide the students into two groups before going outside.

GROUP ACTIVITIES

30 MINUTES

Rotate groups after 15 minutes. Regroup for the Harvest Party.

**GARDEN HARVEST**

(15 minutes) All students must wash their hands

well with soap and water before coming to the garden to harvest. Keep the harvest basket clean by keeping it off of the ground. Garden produce must be washed before being eaten.

Harvest:

- Express GRATITUDE by giving thanks to the plants, sun, air, water, soil, creatures, people, etc.
- Gently harvest the vegetables. Discuss the companion plants and how they help each other.
- Soil-free vegetables (lettuce, beans, basil, nasturtiums, tomatoes) may be placed in the basket or taken directly to the washing station.
- Carrots and radishes should be taken directly to the scrubbing station (do not place in the basket) after excess soil is brushed off into the garden.
- Be sure to leave enough for both groups to harvest.
- Discuss and practice SEED SAVING by harvesting seeds from the garden (beans, lettuce, radish, tomato, basil, marigolds, nasturtiums). Dry them by laying them out over newspaper in the classroom. When dry, send them home with students for planting or label and store in airtight containers (e.g., jars) in the refrigerator for future planting.

Wash:

- Lettuce, beans, basil, nasturtiums, tomatoes: Rub each leaf, pod, flower, or fruit with your fingers under running water or mix and wash them together in the colander.
- Carrots and radishes: In the dish tubs with clean water, use the scrub brushes to remove the soil from the roots. Scrubbing side to side helps get the soil out of the grooves of the carrot roots. Then rub and rinse the vegetables under running water.
- Place clean vegetables in the large, clean bowl.

Putting the Garden Bed to Rest:

- Lay the compostable plant material over the soil as a mulch to protect the soil from the sun, or place it in the school's compost bin and cover the soil with mulch (e.g., wood chips) for protection. It is important to cover the soil, preferably with organic matter, in order to preserve moisture and soil life and discourage weeds.

HARVEST PARTY HATS (15 minutes)

- Have students put their name on the hat, then color the paper to match the type of garden creature they want to be (ladybug, bee, butterfly, toad, etc.).
- Show students the Creature Cards so they can see what the creatures' skin patterns look like. Example: Ladybug = red with black spots; bee = yellow with black stripes.
- When they finish their hat, measure the hat to fit the student's head, then staple the ends together (two prongs on the outside so as not to catch hair).
- Optional: Staple pipe cleaners onto the hats as antennae.
- Discuss the special job of each creature and suggest that they either fly or hop, and pollinate or pretend to eat bugs when they go out to the garden.



HARVEST PARTY

10 MINUTES

Have the students wash their hands well with soap and water. Optional: Use the plastic dish tubs with clean water and soap to create a hand washing station near the garden.

If parents and/or staff attend, consider the following options for engagement:

- Place lesson materials on display (e.g., Signs).
- Have students present about what they have learned from The Good Buddy Garden.
- Have students take parents on tours of the garden.
- Sing the Harvest Song or other garden songs together.

Have the students be seated on the sheets or blankets in a circle near the garden. Ask for students and adults to share about their experience.

Discuss with students:

- What types of vegetables did you HARVEST today?
- How is the garden our good buddy?
- Invite students and adults to express their GRATITUDE before eating.

Arrange the garden vegetables on the food platters and fill the bowls with dressing (optional). Students can choose the vegetables they like to eat and dip them in salad dressing. No double dipping!

“Today we had a wonderful celebration where we got to eat the delicious food you grew in your garden. Are you excited to take some of your vegetables home to your family? Are you excited to eat more vegetables? Would you like to grow more of the food that you eat every day? You can! Let’s give ourselves a round of applause for a job well done! Let’s give a round of applause for our garden!” If there is leftover garden produce you may divide it among the students to take home or share with other classes and school staff.

Have students place snack waste in a bucket and then add it to the school’s compost pile when finished.



FOLLOW UP GARDEN CARE

Follow Up Garden Care is the responsibility of the classroom teacher and students.

- This is the final lesson of the semester so it is time to put the garden to rest. Use mulch materials to cover the soil, protecting it from the sun and discouraging weeds.
- Continue to have your students water and visit the garden at least once a week to help keep the soil alive and to harvest any remaining produce and seeds. Students must wash their hands before harvesting. Garden produce must be washed before being eaten.
- Harvest, dry, and save seeds from the garden (beans, lettuce, radish, tomato, basil, marigolds, nasturtiums). Dry them by laying them out over newspaper in the classroom. When dry, send them home with students for planting or label and store in airtight containers (e.g., jars) in the refrigerator for future planting.
- Cut fresh flowers for your classroom, for families, or to share with other teachers, staff, and students at your school.
- Students must wash their hands thoroughly with soap and water after working in the garden.

FOLLOW UP ACTIVITIES

Follow Up Activities are the responsibility of the classroom teacher.

- Finish/embellish the Harvest Party hats if desired.
- Review this semester's garden experience with students, including key concepts for the unit, which are 'āina, companion planting, beneficial garden creatures and pests, decomposers, pollinators, nature's elements, photosynthesis, proper harvesting and vegetable washing, and healthy habits.



- Have students complete the Garden Reflection Student Worksheet.
- Have students create a final journal entry about their garden experience this semester. Have them share their work with the class.
- Administer the 'ĀINA Post Unit Survey immediately following the final lesson and review.
- Save and submit examples of student work to Kōkua Hawai'i Foundation.



LESSON EXTENSIONS

Forming Healthy Habits
(HE.K-2.5.4, HE.K-2.6.2)

1. Have students name a personal health goal and describe a plan to achieve it (especially with respect to growing gardens, exercising, and eating fresh, whole foods).
2. Discuss with students how they might share what they have learned about gardening and eating healthy foods with their friends, families, and their school community. Create cards, posters, songs, stories, poems, videos, etc. for this purpose.





You're invited to our

GARDEN HARVEST PARTY!

Date:

Time:

Place:

Please join us as we celebrate and enjoy
our bountiful garden harvest!

www.kokuahawaiiifoundation.org/aina



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Student Worksheet
THE GOOD BUDDY GARDEN
Lesson 4 * Harvest Party

Name

Class Date

Garden Reflection

Directions: Answer the question that your teacher selects by drawing and writing in the spaces provided below.



Student Worksheet
THE GOOD BUDDY GARDEN
Lesson 4 * Harvest Party

Name

Class Date

For Teachers: Choose one of the following opinion questions for students, or create your own, regarding their gardening experience this semester.

**Do you like having a garden?
List three reasons why.**

**What did you enjoy most
about the garden?**

**What other types of plants would you
like to grow in the garden?**

**What is your favorite pair of
companion plants?**

**What is your favorite kind of
garden creature?**

**What is your favorite kind of
vegetable to eat?**

I have been at this school since grade: K 1 (circle one)

1. Draw a **circle** around the pair of companion plants:



Sunflower & Radish



Tomato & Basil

2. Draw a **circle** around the element of nature that is important for photosynthesis:



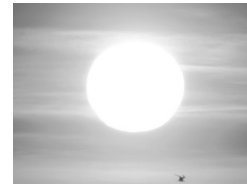
Water



Soil



Air



Sun

3. Draw a **circle** around a beneficial garden creature:



Ant









Snail



Bee

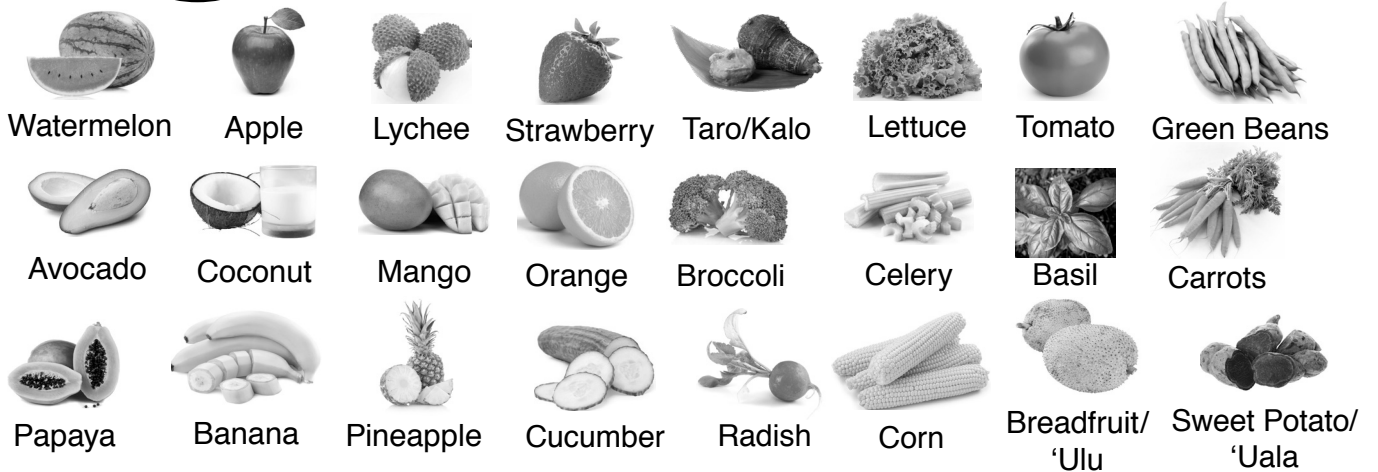
4. Do you like gardening? **Circle** ONE answer:  Yes  I don't know  No

5. Do you like eating fruits and vegetables? **Circle** ONE answer:  Yes  I don't know  No

6. Do you like cooking? **Circle** ONE answer:  Yes  I don't know  No

7. Do you like 'ĀINA Lessons? **Circle** ONE answer:  Yes  I don't know  No

8. Draw a **Circle** around all the fruits and vegetables you like to eat:



9. Draw a picture of what 'āina means to you.

