

# 2nd Grade Sense of Plate Unit Plan

### **BACKGROUND:**

### Lesson Background:

This unit is designed so that inquiry and investigations of community and place (in terms of both culture and environment) drive educational experiences that are enriching and accessible. Hāmākua Harvest is a local non-profit organization that hosts a Demonstration Farm and Native Hawaiian Agroforestry project that highlight crops that are both culturally-significant to the Honoka'a community and ecologically-adapted to the climate of Hāmākua. It is helpful, but not required that students have some familiarity with gardening basics but these skills can be taught and reinforced throughout the unit. The unit has intense focus on HĀ in terms of "Sense of Hawai'i", "Sense of Aloha", and "Sense of Belonging" due to the community-based service and investigation. It aligns with STEMS2 because it explores social issues through multiple lenses (makawalu), creates a space in which students can be teachers and teachers can be students (A'o), and has students exploring their local culture and environment (Sense of Place).

#### **Unit Overview:**

Sense of Plate has second-grade students investigating the sources of foods that they, their families, and communities love to eat! In this social studies-focused interdisciplinary unit, students conduct interviews with families and local farmers to discover what foods grow well in their community and their cultural origins, grow those foods in their school garden, and share the fruit of their knowledge with their community through plants and a growing guide. Students will also begin to develop an understanding of food systems by examining the different impacts of locally-sourced and globally-sourced goods.

Unit Plan Title: Sense of Plate

# **Essential Question:**

How does culture and environment impact the foods we eat?

# Enduring Understanding(s):

- Students will understand that our natural environments and habitats influence what we can grow and eat locally.
- Students will recognize that "place" (culture and environment) influences what foods we like to eat and how we like to prepare those foods.
- Students will be able to explain the environmental, social, and economic impacts of locally-produced and globally-produced foods.



# Critical Skills and Concepts:

- Conducting research through observation, reading informational text, and conducting interviews.
- Propagating and caring for food-bearing plants.
- Comparing and contrasting different habitats based on what foods you can find in those habitats (farms, gardens, forests, fishponds, ocean, etc.)
- Sharing thoughts, reflections, and understandings in writing.
- Eating and purchasing locally-grown food has a different impact on the local economy and environment than food produced off-island.
- Food traditions are tied to place; early humans only ate foods that were able to be produced or found locally, so many traditional foods center

### Authentic Performance Task:

In the main culminating authentic performance task for this unit, students will create a "guide" with information on how to grow foods community members like and that can be grown in their place, a bit about the cultural origins and preparation methods of that food, as well as share the impact of growing/eating locally-produced foods. Each student will contribute one page about one plant of their choice that they will learn more about throughout the lessons and activities in the unit. Students will share this guide, along with seeds, cuttings, or starts of that plant with community members during the local Sunday farmers' market.

#### Authentic Audience:

Families and community members who attend the local farmers' market serve as the authentic audience in this unit. Families are engaged in students' learning from the first lesson with the family cultural foods interviews, and will be invited and encouraged to visit the students' plants and work at the class' materials distribution during the local farmers market. The great community will be engaged at the local farmers' market, where they will be able to take home plants, seeds, and/or cuttings, as well as the class guide for caring for those plants!

Families & community @ local farmers' market

### Other Evidence:

- Content of in-class discussions (formal and informal conversations)
- Student journal entries and/or turn and talk responses
- Anecdotes from families
- Health of plants starts



# Learning Plan:

- STEMS^2 Pillars:
  - o Makawalu: Students explore the impact of food systems from multiple lenses-cultural, economic, & ecological.
  - o Advocacy: Students advocate for people to consume more locally-grown food through their plant sale project.
  - o Sense of Place: Students explore how cultural and ecological factors influence how their "place" influences what they like to eat.
  - o A'o: Students teach the community about the benefits of eating local food using their local plant guidebook entries.
  - o Mo'olelo: Students learn from cultural stories told by family and community partners.

# **Unit Overview**

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<b>Lesson Description</b>	Learning Objectives & Standards Addressed	Location & Timing	
Lesson 1- What foods do you and you	Lesson 1- What foods do you and your family like to eat? (full lesson on p.9)		
Opening Text- When Lola Visits by Michelle Sterling  Classwork- Students discuss ingredients and animal/vegetable and cultural origins of our favorite foods.  Homework- Interview family	<ul> <li>Students will recognize that family and community culture impacts what foods we like to eat.</li> <li>Students will recognize the animal and vegetable origins or sources of foods.</li> <li>CSS.ELA-LITERACY.L.2.5.B Distinguish shades of meaning among closely related verbs (e.g., toss, throw, hurl) and closely related adjectives (e.g., thin, slender, skinny, scrawny).</li> </ul>	Week 1 Classroom 1-day lesson	
Lesson 2- What foods grow well in your community? (full lesson on p.12)			
Opening Text- What's on Your Plate? Exploring the World of Food by Whitney Stewart.  Classwork: Visit school garden and/or Hāmākua Harvest, INC Identify plants that are growing well, producing food, and match ingredients from their selected dish from lesson one.	-Students will understand that a place's climate affects what species can survive there.  CCSS.ELA-LITERACY.RF.2.4.A Read grade-level text with purpose and understanding.  2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats  Content Standard SS.2.3.13.4- Describe major geographic features of places using maps, photos, and other geographic representations	Opening Text daily between Weeks 1-2 Week 2 School Garden and/or Hāmākua Harvest 1-2 day lesson	
Homework- Show students pictures of "local" food labels at the local grocery store(s). Next time they go to the grocery store, tell them to take a look at the labels in the produce, meat, and fish section. What types of			



foods were labeled "local"?		
Lesson 3- Food & Place (full lesson or	n p.14)	
Opening Activity- Recap prior knowledge + content learned so far  Classwork: Sort the foods they like to eat by whether or not they grow well in Hawai'i, use research, prior knowledge, and observations from class assignments to determine this information.	Students will be able to recognize which of their favorite foods can be grown locally and which cannot.  Students will recognize that different species of plants and animals have different growing needs.  Content Standard SS.2.4.16.2  Investigate how people in your community rely on local and global resources to meet their daily needs	Week 3 Classroom 1-day lesson
Homework- N/A		
Lesson 4- Introduction to 'Ulu (full le	esson on p.16)	
No Ke Kumu 'Ulu by Kawehi Avelino Classwork: Learn about 'ulu (cultural origins, how it is grown/eaten); care for 'ulu trees; and taste 'ulu.  Homework- N/A	Students will understand the cultural and nutritional significance of 'Ulu as a food source for Hawai'i.  CCSS.MATH.CONTENT.2.MD.A.1- Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.  CCSS.MATH.CONTENT.2.OA.A.1- Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.  CCSS.MATH.CONTENT.2.NBT.A.2- Count within 1000; skip-count by 5s, 10s, and 100s.	Week 4 Classroom + School Garden and/or Hāmākua Harvest 1-2 days



Lesson 5- Grown Not Flown (full less	CCSS.ELA-LITERACY.RI.2.1 Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.  CCSS.ELA-LITERACY.RL.2.3 Describe how characters in a story respond to major events and challenges.  CCSS.ELA-LITERACY.RL.2.7 Use information gained from the illustrations and words in a print or digital text to demonstrate understanding of its characters, setting, or plot.  CCSS.ELA-LITERACY.L.2.5.A Identify real-life connections between words and their use (e.g., describe foods that are spicy or juicy).	
Opening Text- Before We Eat: From	-Students will be able to name cultural and ecological impacts of eating local v.	Week 5
Farm to Table by Pat Brisson	imported foods.	Classroom
Classwork- Learn about the supply chain for local v. imported foods.	Content Standard SS.2.2.14.1- Explain how human activities impact the environment	1-day
Homework- N/A	Content Standard SS.2.3.12.2- Examine how people are dependent on others for goods and services they cannot produce themselves	
	CCSS.MATH.CONTENT.2.MD.A.1- Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.	
Lesson 6- Grown Not Flown Pt.2 (full lesson on p.25)		
Opening Text-	-Students will be able to name cultural and ecological impacts of eating local v. imported foods.	Week 5



<ul> <li>Eating Local in Hawai'i</li> <li>Eat Local Today w/Ho         Farms- Foodland Hawai'i</li> <li>Michael Pollan- Why Eat         Local?</li> <li>Classwork- Explore cultural and         ecological impacts of eating local v.         importing foods. Students select a         plant that grows well in Hawai'i to         grow and share with the community.</li> <li>Homework- N/A</li> </ul>	Content Standard SS.2.2.14.1- Explain how human activities impact the environment	Classroom 1-day
Lesson 7-Planting Local Crops (full l	esson on p.29)	
Opening Activity- Class discussion about what plants need in order to grow.  Classwork: Students start their selected plants from seed or by cutting.  Homework- N/A	-Students will be able to successfully grow crops from cuttings and by planting from seed.  -Students will be able to explain what plants need in order to grow and thrive.  LS2.A: Interdependent Relationships in Ecosystems  - Plants depend on water and light to grow. (2-LS2-1)  NGSS Cross Cutting Concept: Structure & Function  - The shape and stability of structures of natural and designed objects are related to their function(s). (2-LS2-2)  Content Standard SS.2.4.8.3  Develop logical solutions to various community problems	Week 6 Classroom or School Garden 1-2 days
Lesson 8- Foods of Hāmākua (full lesson on p.32)		



Opening Text- Students check on their cuttings/seeds and water them if needed. Class discussion about what students are observing with their plants.  Classwork- Students each work on their entry for a guidebook of crops that grow well in Hāmākua, including details about cultural origins of plants, how they grow, and suggestions for how to prepare/eat them. Each student submission will also contain a statement about the benefits of eating local.	-Students will be able to provide community members with information about how to grow a specific plant; how it is used in a cultural context; and the benefits of eating locally-produced foods.  CCSS.ELA-LITERACY.W.2.7  Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations).  CCSS.ELA-LITERACY.W.2.8  Recall information from experiences or gather information from provided sources to answer a question.  CCSS.ELA-LITERACY.W.2.2  Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section.	Week 7 & 8 Classroom 2-3 days
Homework- N/A		
Lesson 9- Harvesting, Sharing, & Cel	lebrating (full lesson on p.38)	
Opening Text- Class discussion around advertising.  Classwork: Students prepare for plant sale at Sunday Farmers' Market in Honoka'a.  Homework- N/A	-Students will be able to up-pot plantsStudents will be able to create small posters to advertise for their plant sale.	Week 9 Classroom or School Garden 1 day



# Lesson #1- What foods do you and your family like to eat?

#### **Materials Needed:**

- -Chart paper (one per table group) a Venn diagram with three circles- "Fruits/Veggies, Meat, & Starches"- overlapping on "Mixed Dish"
- -Post-it notes
- -Colored pencils
- -When Lola Visits by Michele Sterling

#### **STANDARDS**

### CSS.ELA-LITERACY.L.2.5.B

Distinguish shades of meaning among closely related verbs (e.g., toss, throw, hurl) and closely related adjectives (e.g., thin, slender, skinny, scrawny).

#### **OBJECTIVES**

Students will recognize that family and community culture impacts what foods we like to eat.

Students will recognize the animal and vegetable origins or sources of foods.

#### **INSTRUCTION**

# I. ANTICIPATORY SET (Primary Text/DO NOW)

How will you provide meaningful, engaging and instructional opportunities for your students to RELATE to the lesson objective(s)?

Optional: Teacher provides students with calamansi limeade to try a food from the story.

Read aloud the story book, When Lola Visits by Michele Sterling.

Have students raise their hand and wiggle their fingers (silently) when they hear the name of a food they like to eat or a fruit or vegetable that they recognize.

Highlight a few closely related words from the text and discuss nuanced meanings (ex: tumble, glossy, indigo, etc.)

# II. MAIN ACTIVITY (Secondary text + Comprehending text - MINI-LESSON)

How will you provide meaningful, engaging and instructional opportunities for your students to DEMONSTRATE the lesson objective(s)?



Once the story is over, the teacher will instruct students to turn & talk with a partner about a food that they like to eat with their family. As students are talking, the teacher will pass out 2 post-it notes to each student.

Next, students will spend 5 minutes individually writing down the names of and/or drawing 2 of their favorite foods on post-it notes. The teacher will model an example to show that their list could include whole dishes (ex: pancit) or specific ingredients (ex: mango, luau leaf). The teacher will also discuss that while many of us enjoy candy, for this activity we want to focus more on foods that help our bodies grow!

### III / IV. GUIDED PRACTICE (Creation of Text)

How will you provide meaningful, engaging and instructional opportunities for your students to RETAIN the lesson objective(s)?

Each table group will get one large sheet of chart paper of a Venn Diagram with the categories: Fruit/Vegetable, Meat, and Starch all overlapping on a category labeled "Mixed Dish". Students will then, as a group, sort out their favorite foods into the section that best represents that food. Teacher will model a couple examples to start.

Each group will then share-out some of the things they had in common and share any foods that they had a hard time categorizing. Groups will then post their chart paper on display in the classroom to use later in the unit.

Class will have a short wiggle break and then come to the center of the classroom to generate a list of questions to interview their family members about what foods they like to eat and why, and where they get their ingredients. Teacher will print out questions and send them home with students as homework.

Closing Journal Entry OR Turn & Talk: Think of the story at the beginning of class, are there any foods you like to eat that you make or eat with specific family members or during special times of the year?

# V. ASSESSMENT (Performance)

Identify assessments to measure lesson objectives. Match lesson assessment to each lesson objective.

In their final discussion or journal entry, students will be able to connect which foods they like to eat with their family and community culture(s).



During the sorting activity, students will show that they understand that foods are made up of ingredients that come from plants and animals.

HOMEWORK: Students will interview someone from their family using the questions we created as a class.

### **ACCOMMODATIONS**

How does your lesson accommodate for the following exceptionalities?

# **II. ENGLISH AS A SECOND LANGUAGE (ESL)**

- May need to provide context, modeling, and/or practice identifying "starches", especially if students have never had food/nutrition education.
- Students can draw their food items in addition to writing the names.



# Lesson #2- What foods grow well in your community?

#### **Materials Needed:**

- -Local Food Scavenger Hunt (attached separately below lesson plan)
- -Clipboards
- -Ipads (optional)
- -Pencils
- What's On Your Plate? Exploring the World of Food by Whitney Stewart.

#### **STANDARDS**

# CCSS.ELA-LITERACY.RF.2.4.A Read grade-level text with purpose and understanding.

**2-LS4-1.** Make observations of plants and animals to compare the diversity of life in different habitats

# SS.2.3.13.4- Describe major geographic features of places using maps, photos, and other geographic representations

#### **OBJECTIVES**

Students will understand that a place's climate affects what species can survive there.

#### **INSTRUCTION**

### I. ANTICIPATORY SET (Primary Text/DO NOW)

How will you provide meaningful, engaging and instructional opportunities for your students to RELATE to the lesson objective(s)?

During the 10 days leading up to the lesson, read one "section" of the book What's On Your Plate? Exploring the World of Food by Whitney Stewart.

For each section, have students identify which foods were traditionally cultivated in these countries/places and which were introduced by other cultures. Students will place images of these ingredients with the corresponding country/region of origin on a map in the classroom.

### II. MAIN ACTIVITY (Secondary text + Comprehending text - MINI-LESSON)

How will you provide meaningful, engaging and instructional opportunities for your students to DEMONSTRATE the lesson objective(s)?

The following investigation could take place either in a school garden or at a local farm; it could take place in-person or virtually! For this unit, the author planned to bring students to Hāmākua Harvest, INC, a nonprofit agriculture education organization in Honoka'a town that has extensive gardens and orchards full of plants adapted to Honoka'a's climate.



In either case, a guest expert (the garden teacher or farmer) would give a tour of the space and show the students what foods are growing. Students can either use iPads to take pictures of the foods/ingredients that they see, or clipboards w/pencils to write down names and make sketches of foods/ingredients that they see, and use the chart below adapted from the FEAST Curriculum 3-5 Lesson, "What Food Grows Well in This Place?". For students with developing ELA skills, the teacher can provide a list of possible foods/plants with pictures and students can circle the ones they see during the scavenger hunt/tour, along with the location descriptions. Give students the opportunity to share when they see an ingredient from their favorite foods or recognize any foods from the week's reading.

Before students leave the garden/farm/site, the teacher will direct them to do the assessment and share their ideas with the garden teacher or guest expert.

Optional: If any foods from the farm or school garden can be harvested, washed, and eaten raw, students will have the opportunity to try them!

### III / IV. GUIDED PRACTICE (Creation of Text)

How will you provide meaningful, engaging and instructional opportunities for your students to RETAIN the lesson objective(s)?

#### Homework:

Once back in the classroom, the teacher will show students pictures of "local" food labels at the local grocery store(s). Next time students go to the grocery store, they will take a look at the labels in the produce, meat, and fish sectio and take note of what types of foods were labeled "local" or "Grown in Hawai'i". Alternatively, students can also observe the food plants in their neighborhood to see what is being grown locally. Students add what they see to their chart.

# V. ASSESSMENT (Performance)

Identify assessments to measure lesson objectives. Match lesson assessment to each lesson objective.

Journal entry OR Turn & Talk: Are there any ingredients from your favorite foods that you did not see in the school garden, at Hāmākua Harvest, at the farmers' market, or growing in our town? If so, what are some possible reasons why they are not grown in our town?

#### **ACCOMMODATIONS**

How does your lesson accommodate for the following exceptionalities?

# I. SPECIAL NEEDS (includes Gifted & Talented)

The What's on Your Plate text does not offer a lot of information about climate. May need to introduce typical weather patterns for each country prior to the reading.



Will also need to affirm and highlight that even though it is not a farm, the ocean is a food source! Same with forest for hunting.

Ask the farmer or garden teacher to share some of the challenges with growing certain crops year-round (ex: pest issues, weather patterns, elevation, and seasonality).

# **Local Food Scavenger Hunt Worksheet**

Food Plant	Location Found (ex: school garden, neighbor's garden,	Describe the Location (sunny, shady, wet, dry)



### Lesson 3- Food & Place

#### Materials Needed:

- -Homework journals
- -Post-its
- -Chart paper (one per table group), table w/three columns labeled-"Grown, Flown, & Unknown"
- -Various internet resources to identify foods grown in Hawai'i/those commonly imported.

#### **STANDARDS**

Content Standard SS.2.4.16.2 Investigate how people in your community rely on local and global resources to meet their daily needs

#### **OBJECTIVES**

Students will be able to recognize which of their favorite foods can be grown locally and which cannot.

Students will recognize that different species of plants and animals have different growing needs.

#### INSTRUCTION

### I. ANTICIPATORY SET (Primary Text/DO NOW)

How will you provide meaningful, engaging and instructional opportunities for your students to RELATE to the lesson objective(s)?

The teacher will facilitate class discussion using turn & talk to recap what students have learned so far in this unit:

- Name some food we can grow (or hunt/harvest) in our community.
- Name some of the places we can get food.
- Why do you think we do not see some of our favorite foods growing in our community?

### II. MAIN ACTIVITY (Secondary text + Comprehending text - MINI-LESSON)

How will you provide meaningful, engaging and instructional opportunities for your students to DEMONSTRATE the lesson objective(s)?

Students will revisit their listed foods from Lesson #1 of this unit and remove their post-its from their table group's chart paper. The teacher will then pass out a second chart paper with three new categories: Grown, Flown, & Unknown (use this opportunity to reinforce rhyming)!

Students will re-sort their favorite foods into these categories. If they finish early, they can do some research using resources such as the HDOA Buy Local, Buy Fresh Chart to see if they can find more information to help categorize any ingredients they listed as "unknown".

# III / IV. GUIDED PRACTICE (Creation of Text)



### How will you provide meaningful, engaging and instructional opportunities for your students to RETAIN the lesson objective(s)?

Table groups will present their completed charts to the whole class, highlighting what things they like are grown locally, which are not, and any unknowns they have. For each item, the students will share how they know if it is "Grown, Flown, or Unknown". If other students outside of that group have ideas about where to place the unknowns, the teacher can facilitate a discussion.

# V. ASSESSMENT (Performance)

Identify assessments to measure lesson objectives. Match lesson assessment to each lesson objective.

The presentation is an opportunity for the teacher to gauge if students met the learning outcomes.



### Lesson 4- Introduction to 'Ulu

#### Materials Needed:

- -No Ke Kumu Ulu by Kawehilani Avelino
- -Projector/monitor
- -Clipboards
- -Pencils
- -'Ulu math worksheet (attached below the lesson plan)
- -2 different color pads of post-it notes
- -4x 12oz bags of recipe-ready 'ulu

(Steam ½ and Cook ½ using this recipe)

-1x baker's ripe 'ulu

#### **STANDARDS**

**CCSS.MATH.CONTENT.2.MD.A.1-** Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.

**CCSS.MATH.CONTENT.2.OA.A.1-** Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

CCSS.MATH.CONTENT.2.NBT.A.2- Count within 1000; skip-count by 5s, 10s, and 100s.

### CCSS.ELA-LITERACY.RI.2.1

Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.

### CCSS.ELA-LITERACY.RL.2.3

Describe how characters in a story respond to major events and challenges.

### CCSS.ELA-LITERACY.RL.2.7

Use information gained from the illustrations and words in a print or digital text to demonstrate understanding of its characters, setting, or plot.



### CCSS.ELA-LITERACY.L.2.5.A

Identify real-life connections between words and their use (e.g., describe foods that are spicy or juicy).

#### **OBJECTIVES**

Students will understand the cultural and nutritional significance of 'Ulu as a food source for Hawai'i.

#### INSTRUCTION

### I. ANTICIPATORY SET (Primary Text/DO NOW)

How will you provide meaningful, engaging and instructional opportunities for your students to RELATE to the lesson objective(s)?

At the end of the previous lesson, students identified the types of foods that are not grown (or hunted/harvested) in their community. To open this lesson, each group of students will copy their 2 ingredient post-it notes from their "Grown, Flown, & Unknown" charts, and will be asked to sort them back on to our our Lesson #1 venn diagram by their food group (fruits/veggies, starch, meat, or mixed dish). The class will then look at which food category has the most non-local ingredients and use that as a launching point to discuss the value of a crop like 'ulu as a locally-sourced starch option.

## II. MAIN ACTIVITY (Secondary text + Comprehending text - MINI-LESSON)

How will you provide meaningful, engaging and instructional opportunities for your students to DEMONSTRATE the lesson objective(s)?

# Read No Ke Kumu Ulu

- Identify the Who, What, When, Where, & Why to identify key details of the story.
- Recap story by asking how Kū responded to the famine in his community?

# 'Ulu Care @ School Garden or Field Trip Site w/'Ulu Trees:

This is a good lesson to co-teach with a school garden teacher, or an experienced community partner volunteer with gardening experience.

# Caring for 'Ulu Trees

- Depending on the size and maturity of the trees, students can gather information on the following:
  - o Measure height of baby 'ulu trees
  - Count # of fruits on the trees
  - Count # of flowers on the trees



- Depending on the needs of the trees, students can do the following:
  - Weed around the trees
  - Spread compost and/or mulch around the trees

### **Post Field Trip Lesson:**

- Have students watch this video from the Hawai'i 'Ulu Co-op on cooking w/'ulu
- Have students wash their hands and then give them 'ulu to try in three separate ways:
  - Steamed (plain)
  - o Raw (baker's ripe)
  - Steamed & lightly fried w/shoyu and coconut oil
- Have students vote (using talleys on the board). Have a class discussion to create a word bank of terms used to describe the taste and texture of foods.

## III / IV. GUIDED PRACTICE (Creation of Text)

How will you provide meaningful, engaging and instructional opportunities for your students to RETAIN the lesson objective(s)?

After students have had a chance to taste their 'ulu and vote, give the students a wiggle break and then revisit the 'ulu math worksheet (attached below) to review the answers as a class.

## V. ASSESSMENT (Performance)

Identify assessments to measure lesson objectives. Match lesson assessment to each lesson objective.

**Exit Ticket:** Teacher will give students two post-it notes. On one, the teacher will instruct students to write one thing that makes 'ulu culturally important to Hawai'i. On the second, they should write one thing that makes 'ulu an important food source. Students will add their post-it notes to the board.



Student Name:			
1) Measure three diffe	rent 'ulu trees using feet. Rou	nd your answer to the nearest inch.	
Tree #1 -	Tree #2-	Tree #3-	
2) Which tree is the tal	lest? How much taller is it tha	n the next tallest tree?	
3) Count the number of	of fruit and flowers you see on	the same three trees.	
Tree #1	Tree #2	Tree #3	
Fruit-	Fruit-	Fruit-	
Flowers-	Flowers-	Flowers-	
4) For each tree, add t this season.	he fruits and flowers to create	a rough estimate of how much food the	e tree will produce



Tree #1 - Tree #2 - Tree #3-

5) Which tree has the most fruit and flowers? It is also the tallest tree, yes or no?

6) What do you think these numbers tell us about 'Ulu trees as a food source?



#### Lesson 5-Grown Not Flown Pt.1

#### **Materials Needed:**

- -Before We Eat: From Farm to Table by Pat Brisson
- -Meter sticks (one per table group)
- -Ball of yarn
- -Scissors (one per table group)
- -Blank yarn nametag "role" cards (6-8 per table group)
- -Small cups
- -Bag of beans

#### **STANDARDS**

Content Standard SS.2.2.14.1- Explain how human activities impact the environment

Content Standard SS.2.3.12.2- Examine how people are dependent on others for goods and services they cannot produce themselves

**CCSS.MATH.CONTENT.2.MD.A.1**- Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.

#### **OBJECTIVES**

Students will be able to name cultural and ecological impacts of eating local v. imported foods.

#### **INSTRUCTION**

# I. ANTICIPATORY SET (Primary Text/DO NOW)

How will you provide meaningful, engaging and instructional opportunities for your students to RELATE to the lesson objective(s)?

Read <u>Before We Eat: From Farm to Table</u> by Pat Brisson. Have students count the number of rhymes they hear, or raise their hand when they hear two words that rhyme.

# II. MAIN ACTIVITY (Secondary text + Comprehending text - MINI-LESSON)

How will you provide meaningful, engaging and instructional opportunities for your students to DEMONSTRATE the lesson objective(s)?



Teacher will create a t-chart on the board and ask students to list out the roles for each human involved in the process of getting both "Grown" and "Flown" foods from the farm (or ocean, forest, etc.) to the consumer. The teacher will encourage students to refer to the different characters from the book. For the "Grown" item, the chart should end up with at least the following roles, but students may think of more - Farmer, Truck Driver, Pilot or Ship Captain, Stevedore (person who unloads the grocery store), Truck Driver, and Grocery Store produce clerk. Do the same thing for a "Grown" item; there should be significantly fewer roles here.

Students will revisit their "Grown, Flown, & Unknown" charts. As a class, select one item from the "Flown" category. Use a map to identify where the "Flown" item is coming from and calculate the miles using google maps. Use a ball of yarn or string and use a measuring stick to measure out the number of miles in which each mile represents a millimeter. Ask students to think about the impact that shipping this food might have on people and the environment.

### III / IV. GUIDED PRACTICE (Creation of Text)

How will you provide meaningful, engaging and instructional opportunities for your students to RETAIN the lesson objective(s)?

Next, split the groups in half; one half of the groups will select one item from the "Grown" category on their charts and one half will select one item from the "Flown" category on their charts. Each group will identify the origin of their food item (teacher may need to provide info or model how to google search for where most of that food item is grown). If possible, it might be good to have some of the dry good items from Lesson #2 on-hand so that students can look at the food labels to discover their origin. Once they discover the origin, they can use google maps to calculate the miles it had to travel to get to Honoka'a. Then, they will use a meter stick to measure out and cut a string that represents the number of miles (where 1 millimeter = 1 mile). Each group will tape their strings to the board and write the name of their food next to their string.

# V. ASSESSMENT (Performance)

Identify assessments to measure lesson objectives. Match lesson assessment to each lesson objective

Next, explain each group will get a turn coming up to the front to act out the supply chain that brings their food from the farm to the grocery store. Explain that a supply chain is the steps and processes for how products get from the producer (person who harvests and makes the product) to the consumer (person who takes it home). Students will decide their roles and write them out on the nametags. If you want to get really creative, you can have simple costumes to help denote the roles (ex: trucker hat for truck driver, gloves for Stevedore, apron for grocery store clerk, etc). They can also make up lines if they wish!



Before each group acts out their supply chain, the teacher introduces the idea that each person involved in the process needs to get paid. Each group will get a small cup of beans that represents the consumer's \$. With the first group, the teacher will model that the consumer hands the grocery store clerk all of the beans, and each person takes 1 bean as the item is passed down the line. Have each group take note of how many beans the farmer is left with at the end. Repeat this exercise with each group (some groups might need extra students so they can select volunteers to fill the roles). At the end, compare the number of beans the farmers are left with, comparing the grown to the flown items. Ask students to consider how the size of the supply chain impacts both humans and the environment; refer back to some of the ideas shared in the videos at the beginning of class.

#### **ACCOMMODATIONS**

How does your lesson accommodate for the following exceptionalities?

### I. SPECIAL NEEDS (includes Gifted & Talented)

For an added challenge, students can use play money with real denominations and practice making change as they pass the item down the line.



### Lesson 6-Grown Not Flown Pt.2

#### Materials Needed:

-Guidebook page content worksheet (attached below lesson)

-Internet resources and Hawai'i-based gardening books

#### **STANDARDS**

Content Standard SS.2.2.14.1- Explain how human activities impact the environment

Content Standard SS.2.4.8.3- Develop logical solutions to various community problems

### **OBJECTIVES**

Students will be able to name cultural and ecological impacts of eating local v. imported foods.

# **INSTRUCTION**

## I. ANTICIPATORY SET (Primary Text/DO NOW)

How will you provide meaningful, engaging and instructional opportunities for your students to RELATE to the lesson objective(s)?

**Watch the following videos:** Ask students to look/listen for benefits to eating locally-grown foods, particularly how it helps people and the environment.

- Eating Local in Hawai'i
- Eat Local Today w/Ho Farms- Foodland Hawai'i
- Michael Pollan- Why Eat Local?

# II. MAIN ACTIVITY (Secondary text + Comprehending text - MINI-LESSON)

How will you provide meaningful, engaging and instructional opportunities for your students to DEMONSTRATE the lesson objective(s)?

After watching the videos, have students brainstorm ideas for how we can help our families and communities eat more locally-grown food! Jot down ideas on a large chart paper.

If students do not do it already, the teacher can propose or guide students toward the idea that we can grow plants to share with our families/community. Discuss with the students whether we want to give these plants away or sell them; if we sell them, where should the money go?



### III / IV. GUIDED PRACTICE (Creation of Text)

How will you provide meaningful, engaging and instructional opportunities for your students to RETAIN the lesson objective(s)?

Students return to their seats. Each student will review their group's "Grown, Flown, & Unknown" charts and select one item from either the "Grown" category that they want to try and grow to share with community members. Once they make their decision, they will move their post-it note to a new chart paper on the board titled, "Guidebook Plants".

Next, using the internet or gardening books, students will answer the following questions in their <u>guidebook page content worksheet</u> (attached below):

- What is the best way to start your plant (does it grow from a seed or a cutting from a mature plant?)
- What are its ideal growing conditions (does it need shade, full sun, lots of water, no water?)

Teacher will model the process for students using 'ulu.

### V. ASSESSMENT (Performance)

Identify assessments to measure lesson objectives. Match lesson assessment to each lesson objective.

- Turn & Talk + Journal Entry:
  - List 2 ways that eating locally-grown foods impacts the environment
  - List 2 ways that eating locally-grown foods impacts our local economy



Student Name:	Plant Selected:
What is the best way to start your plant? Does it grow from a seed or a cutting?	
What are its ideal growing conditions?	Shade/Full Sun (select one)  Wet/Dry (select one)  Other Details:
Where is this plant from? Which <b>culture</b> (s) use this plant in their cooking?	
What kind of food can you make with this plant?	
What are the benefits of growing and eating this plant?	



1) are	started from (seed/cutting)	·
2) It needs(partial shade/full sur	and prefers (a lot/little)	water
3) This plant is from use this food in their cooking	and	
4) You can make !!		using this plant. It
5) One benefit is growing and e	eating this plant is	



# **Lesson 7- Planting Local Crops**

#### Materials Needed:

- -Seeds for students' selected plants
- -Cuttings for students' selected plants
- -Potting soil
- -Compost
- -4-inch pots
- -seed trays w/plugs
- -Clippers or scissors,
- -Popsicle sticks
- -Sharpies

#### **STANDARDS**

# LS2.A: Interdependent Relationships in Ecosystems

■ Plants depend on water and light to grow. (2-LS2-1)

## **NGSS Cross Cutting Concept: Structure & Function**

• The shape and stability of structures of natural and designed objects are related to their function(s). (2-LS2-2)

# SS.2.4.8.3- Develop logical solutions to various community problems

#### **OBJECTIVES**

Students will be able to successfully grow crops from cuttings and by planting from seed.

Students will be able to explain what plants need in order to grow and thrive.

#### **INSTRUCTION**

# I. ANTICIPATORY SET (Primary Text/DO NOW)

How will you provide meaningful, engaging and instructional opportunities for your students to RELATE to the lesson objective(s)?

Teacher will lead a class discussion, asking students, "What do plants need to grow?".

# II. MAIN ACTIVITY (Secondary text + Comprehending text - MINI-LESSON)

How will you provide meaningful, engaging and instructional opportunities for your students to DEMONSTRATE the lesson objective(s)?



**Teacher Prep:** Refer to students' worksheets from the previous lesson and procure the seeds for all of the students' selected plants. For students whose plants grow from cuttings, first see if that plant is available in your school garden. If not, procure those cuttings. Teachers can work with a school garden teacher or experienced community partner volunteer if they need help! Also recommend that potting soil is spread out into smaller buckets or containers so that there is one container for every two students.

This is a good lesson to co-teach with a school garden teacher, or an experienced community partner volunteer with gardening experience. This lesson could take place in the school garden, or outside the teacher's classroom. Ideally, if the teacher is able to co-teach with a school garden teacher or community partner volunteer, students will be able to rotate in through two stations. If not, each station can be completed with an entire class. This can also be broken up into two separate lessons if need be!

#### Station #1:

Vegetative Propagation (Growing Plants from Cuttings)

Teacher will model for the students how to create a cutting from a mature plant, including safe tool use. (See this resource for tips).

Take 5-6 inch cutting (or use nonstandard measurement such as the length of a student's hand) and remove the lower leaves. Teacher will point out the nodes to the students; explain that this is where a plant will either make leaves or new roots, depending on whether or not it is exposed to moisture and dirt, or air and sunlight. Next, fill up a 4-inch pot one-quarter full of a potting soil and compost mix, place the cutting, and then cover the rest of the way with soil. Make sure that at least 2-3 nodes are above the soil line. Label a popsicle stick with the name of the plant type and put it in the pot. Water!

For students who selected plants that reproduce this way, they make cuttings for their specific plant. For the other students, they can assist with making cuttings with their peers.

### Station #2:

Starting Seeds

Teacher will model for the students how to plant seeds. (See this resource for tips).

Begin by filling the seed trays with potting soil so that each plug is overflowing. Water the tray, and the soil will settle (this is a



teaching moment-Why did the soil go down? Because the water displaced the air that made the soil fluffy). Explain that the size of the seed determines how deep it should be planted; big seeds are planted deep while small seeds sit just below the surface. Recommend doing two students per tray: one is responsible for making the holes and one is responsible for placing the seeds. Once seeds are placed, students can grab more soil to cover their seeds. Next they will label a popsicle stick with the name of the plant type and water the seeds.

For students who selected plants that reproduce this way, they plant seeds for their specific plant. For the other students, they can assist their peers with planting seeds.

Once all students are finished planting, ask them to decide where we should keep the plants, based on what plants need to survive. They should end up somewhere with protection from wind and heavy rain, while still getting some sunlight.

## III / IV. GUIDED PRACTICE (Creation of Text)

How will you provide meaningful, engaging and instructional opportunities for your students to RETAIN the lesson objective(s)?

N/A

# V. ASSESSMENT (Performance)

Identify assessments to measure lesson objectives. Match lesson assessment to each lesson objective.

Turn and talk or journal entry: Students answer the question, what will your plant (or seed) need in the upcoming weeks in order to grow?



### Lesson 8- Foods of Hāmākua

#### Materials Needed:

- -Guidebook page content worksheet from previous lesson
- -Internet resources and Hawai'i-based gardening books
- -Plants

#### **STANDARDS**

#### CCSS.ELA-LITERACY.W.2.7

Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations).

#### CCSS.ELA-LITERACY.W.2.8

Recall information from experiences or gather information from provided sources to answer a question.

#### CCSS.ELA-LITERACY.W.2.2

Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section.

#### **OBJECTIVES**

Students will be able to provide community members with information about how to grow a specific plant; how it is used in a cultural context; and the benefits of eating locally-produced foods.

#### INSTRUCTION

# I. ANTICIPATORY SET (Primary Text/DO NOW)

How will you provide meaningful, engaging and instructional opportunities for your students to RELATE to the lesson objective(s)?

The teacher will have students check on their cuttings/seeds and water them if needed. Teacher facilitates a small class discussion in which students share what changes they see in their plants/seeds!

# II. MAIN ACTIVITY (Secondary text + Comprehending text - MINI-LESSON)

How will you provide meaningful, engaging and instructional opportunities for your students to DEMONSTRATE the lesson objective(s)?

This lesson will likely need to take place across 3-4 class periods. It is complete once students finish their worksheets and complete their paragraphs for the guide book. If students are struggling with the writing portion, they can use the paragraph w/sentence stems at the bottom of the worksheet to help guide their writing.



Start by asking students how we can make sure that people who receive our plants know how to grow them! While this unit provides resources for making a digital or printable guidebook using a worksheet and sentence stems, teachers and their students can get creative and make short videos or other media clips to disseminate the information.

In addition to using the internet, seed packets, and local gardening books, students can also refer to their family interview from the Lesson #1 homework and their journals to answer the worksheet prompts!

### III / IV. GUIDED PRACTICE (Creation of Text)

How will you provide meaningful, engaging and instructional opportunities for your students to RETAIN the lesson objective(s)?

N/A

### V. ASSESSMENT (Performance)

Identify assessments to measure lesson objectives. Match lesson assessment to each lesson objective.

Guidebook entry assessment tool (see attachment below lesson)



Student Name:		
<b>Note:</b> This assessment is modeled after the "Growth Cycle" from the 'Āina Aloha competencies and was created by Dr. Keiki Kawaia'a'e.		
Overall Project- Health	n of Propagated Plants	
Hua	Кири	
☐ Majority of seeds and/or cutting, all appear healthy, and the student was able to support other students with preparing and/or caring for their plants	☐ Majority of seeds and/or cuttings did not sprout; or if they did they are struggling	
Pua	Liko	
☐ Majority of seeds and/or cuttings sprouted and appear healthy	☐ Majority of seeds and/or cuttings sprouted, although many do not appear to be thriving.	



# **Overall Project- Participation**

Hua	Кири
☐ Student participated in all of the class discussions, activities, and writing assignments, consistently sharing creative, well-developed thoughts and explanations of their thinking.	☐ Student participated in all (or most) of the class discussions, activities, and writing assignments, reiterating what they learned.
Pua	Liko
☐ Student participated in all (or most) of the class discussions, activities, and writing assignments, often sharing creative, well-developed thoughts and explanations of their thinking.	☐ Student participated in all (or most) of the class discussions, activities, and writing assignments, sometimes sharing creative, well-developed thoughts.



# Guidebook Entry- Explanation of Cultural & Ecological Benefits of Selected Plant

Hua	Кири
Student's guidebook entry shares multiple, detailed cultural and ecological benefits of eating and growing their selected plant, including personal connections or stories related to those benefits.	☐ Student's guidebook entry shares some cultural and ecological benefits of eating and growing their selected plant
Pua	Liko
Student's guidebook entry shares multiple, detailed cultural and ecological benefits of eating and growing their selected plant	☐ Student's guidebook entry shares some detailed cultural and ecological benefits of eating and growing their selected plant.



# **Guidebook Entry- Explanation of Selected Plant's Growing Conditions**

Hua	Кири
☐ Student's guidebook entry provides detailed information on the propagation method and ideal growing conditions for their plant and how those growing conditions affect the taste and/or quality of their selected plant.	☐ Student's guidebook entry provides basic information on the propagation method and water/sunlight needs for their selected plant.
Pua	Liko
☐ Student's guidebook entry provides detailed information on the propagation method and ideal growing conditions for their plant (including water/sunlight needs, elevation, etc.)	☐ Student's guidebook entry provides detailed information on the propagation method and water/sunlight needs for their selected plant, including any ranges or nuances in those needs.



# Lesson 9- Harvesting, Sharing, & Celebrating

#### Materials Needed:

- -Potting soil mixed with compost
- -4-inch pots
- -popsicle sticks
- -sharpies

#### **STANDARDS**

N/A

#### **OBJECTIVES**

Students will be able to up-pot plants.

### **INSTRUCTION**

# I. ANTICIPATORY SET (Primary Text/DO NOW)

How will you provide meaningful, engaging and instructional opportunities for your students to RELATE to the lesson objective(s)?

At this point, the students' content for the guidebook should be complete. Teacher will ask the students what else they need to do or create to help make the plants and the project visible and exciting at the market!

# II. MAIN ACTIVITY (Secondary text + Comprehending text - MINI-LESSON)

How will you provide meaningful, engaging and instructional opportunities for your students to DEMONSTRATE the lesson objective(s)?

Create a list of the tasks to accomplish before market, include anything from the opening class discussion, but definitely include the following:

- 1) Up-pot all of the successful seedlings into 4-inch pots
- 2) Make sure all plants are labeled.
- 3) Create signs or advertising posters for plants
- 4) Whatever else students think of!

The teacher can choose to create stations, or go through all of the tasks as a whole class!



This is another good lesson to co-teach with the school garden teacher or community partner. This should be done no later than a week prior to the plant distribution event, but can be completed up to two weeks ahead of time.

### III / IV. GUIDED PRACTICE (Creation of Text)

How will you provide meaningful, engaging and instructional opportunities for your students to RETAIN the lesson objective(s)?

# **Up-potting**

Teacher (or garden teacher) will model for the students how to create a cutting from a mature plant, including safe tool use. (See <u>this resource</u> for tips).

The teacher will explain to the students that plants, just like people, can outgrow their spaces! For example, you do not wear the same clothes you did as a baby, right? In order to keep our plants healthy, we need to give them a bigger pot to grow in so that they have room to grow until they are big and strong enough to go directly into the soil.

Identify a seedling that looks strong and healthy. Use a fork to gently pry it out of the tray. Fill up a 4-inch pot about ¾ of the way with soil and place the seedling inside. Bury the seedling up to its first leaves. Label a popsicle stick with the name of the plant type and put it in the pot. Water!

If you have limited pots or soil, have students just select the seedlings that look the healthiest and are most likely to survive.

# **Unit Closing Notes:**

The author of this unit planned to sell their class' plants at their local Sunday Farmers' Market; the plants and guidebook materials were going to be available at the welcome booth. The teacher planned on inviting students and their families to attend, but also planned on collecting pictures and videos of the event to share with students and families who couldn't attend. Other educators can consider doing plant sales or give-aways as part of their school's May Day celebration, or partnering with a local hardware store to sell or distribute plants.

Once the event is over, teachers can lead a small class celebration where students can see photos and videos of their impact on the community, and enjoy snacks made from their selected plants!