Is it important to only use what you need?

Supporting Questions

1. What is a limited resource?
2. What does the kalo life cycle teach us about limited resources?
3. What happens when we don’t take care of our limited resources?
### C3 Teachers

**Grade 1 Economics Inquiry**

<table>
<thead>
<tr>
<th>Standards and Content</th>
<th><strong>Hawaiʻi Core Standards for Social Studies (HCSSS) SS.1.2.9.1</strong></th>
<th>Explain how scarcity is a result of limited resources.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Next Generation Science Standards (NGSS) 1-LS3-1:</strong></td>
<td>Make observations to construct an evidence-based account that young plants are like, but not exactly like, their parents.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Staging the Compelling Question</th>
<th>Learn about the kalo plant:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Parts of the kalo plant</td>
<td></td>
</tr>
<tr>
<td>• Significance of the plant to Hawaiian culture</td>
<td></td>
</tr>
<tr>
<td>• Why is kalo a limited resource?</td>
<td></td>
</tr>
<tr>
<td>• How do we harvest the kalo plant for sustainability?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Supporting Question 1</th>
<th>What is a limited resource?</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Formative Performance Task</th>
<th>Complete a picture sort of the types of resources. Complete a worksheet explaining “limited resource” and why the kalo plant is a limited resource.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Featured Sources</th>
<th>Source A: Chart of examples of natural resources, human resources and capital resources</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Source B: Welina Mānoa Lyon Arboretum brochure</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Supporting Question 2</th>
<th>What does the plant life cycle teach us about limited resources?</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Formative Performance Task</th>
<th>Record a video clip of students answering the question “Why can’t we harvest plants when they are young?”</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Featured Sources</th>
<th>Source A: Life Cycle of Kalo</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Source B: Growing ‘Uala (sweet potato) seedling from Mānoa Heritage Center</td>
</tr>
<tr>
<td></td>
<td>Source C: Mānoa Heritage Center tour of plant seedlings</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Supporting Question 3</th>
<th>What happens when we don’t take care of our limited resources?</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Formative Performance Task</th>
<th>Record a video clip of students answering the question “What happens when we don’t take care of our limited resources?”</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Featured Sources</th>
<th>Source A: The Wump World by Bill Peet</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Source B: Lesson on how to harvest kukui plants for red dyes.</td>
</tr>
</tbody>
</table>

### Summative Performance Task

**ARGUMENT:** Is it important to only use what you need? Construct an argument supported with evidence that addresses the question why people should only use what is needed.

**EXTENSION:** Create a poster advocating for the conservation of a local resource to be used at a conservation, garden or farm.

### Taking Informed Action

**UNDERSTAND** what a limited resource is and how a resource becomes limited.

**ASSESS** Brainstorm a list of ways students can help their families conserve resources and
not use more than needed.

**ACT:** Partner with an agency/group/program (i.e. Mānoa Heritage Center) that focuses on advocating and supporting the repopulation of a limited plant resource native to Hawai‘i.

1. Participate with them in planting or replenishing the plant in a specific location.
2. Volunteer to care or harvest the plant when needed
3. Create a garden at home or at school to help grow that plant

*Featured sources are suggested and links are provided. It may be that these links are broken and we apologize in advance for the inconvenience.*
Overview

Inquiry Description

This economics inquiry leads students through an investigation of limited resources and the consequences of not taking care of the limited resources native to Hawai‘i. By investigating the compelling question “Is it important to only use what you need?” students learn, apply and assess the skills and strategies related to understanding limited resources and what happens if we do not care for them. The formative performance tasks build on knowledge and skills through the course of the inquiry focusing specifically on the Kalo plant. Students will understand more about the usefulness of kalo to Hawaiian culture and why it’s a limited resource. They will make connections between the limited amount of kalo plants and other limited resources in our world and the consequences of not taking care of our limited resources. At the end of the inquiry, students will create an evidence-based argument that will explain if it is important for people to only use what is needed in order to help conserve our limited resources. In the end, students will partner with an agency/group/program (i.e. Mānoa Heritage Center) that focuses on advocating and supporting the repopulation of a limited plant resource in Hawai‘i. Some examples of what students can do include participating with the organization in planting or replenishing the plant, growing the plant at home or creating a garden of limited plant resources on campus.

This inquiry highlights the following additional standards:

- **Next Generation Science Standards (NGSS) 1-LS3-1**: Make observations to construct an evidence-based account that young plants are like, but not exactly like, their parents.

- **CCSS.ELA-LITERACY.1.W.1**: Write opinion pieces in which they introduce the topic they are writing about, state an opinion, supply a reason for the opinion and provide some sense of closure.

It is important to note that this inquiry requires prerequisite knowledge of the structure and function of plant parts (root, stem, leaf, flower, seed).

Note: This inquiry is expected to take four, 50-minute class periods. The inquiry time frame could expand if teachers think their students need additional instructional experiences (e.g., supporting questions, formative performance tasks, featured sources, writing). Teachers are encouraged to adapt the inquiry to meet the needs and interests of their students. This inquiry lends itself to differentiation and modeling of historical thinking skills while assisting students in reading the variety of sources. Resources can also be modified as necessary to meet individualized education programs (IEPs) or Section 504 Plans for students with disabilities.

Structure of the Inquiry

In addressing the compelling question, “Is it important to only use what you need?” students work through a series of supporting questions, formative performance tasks, and featured sources in order to construct an
argument supported by evidence.

Staging the Compelling Question

In staging the compelling question, “Is it important to only use what you need?” teachers will partner with the Mānoa Heritage Center (or another community resource with a kalo field) to educate students about the kalo plant. This will be done virtually over Zoom or as a field trip to the Mānoa Heritage Center for students to see their lo‘i. Students will learn the following:

- The parts of the kalo plant
- The importance of the plant to Hawaiian culture
- Why kalo is a limited resource?
- How did the ancient Hawaiians harvest the kalo for sustainability?

Link to schedule your visit: https://www.manoaheritagecenter.org/na-kumu/

Students will participate in a discussion about what they learned and complete a worksheet to remember the parts of the kalo plant and its importance to the Hawaiian culture. The class will also create an anchor chart that addresses the 4 bullet points above, so it is easy to reference this information throughout the inquiry.

Resources:

- Parts of the kalo printable PDF worksheet
- Parts of the kalo digital Google Slide worksheet
- Parts of a kalo diagram from Bishop Museum:
Supporting Question 1

The first supporting question—What is a limited resource?

The formative task is completing a picture sort of the types of resources and a worksheet explaining “limited resource” and why the kalo plant is a limited resource.

Teachers may implement this task with the following procedures:

1. Explain what a resource is and the three different types of resources: natural resources, human resources and capital resources.
2. Have students do a picture sort where they sort the different resources into their correct type.
3. Bring out a large pitcher of water. Start pouring out large cups of water for the students to drink or fill up their water bottles. Keep doing this until there is only a little bit of water left in the pitcher.
4. Ask students what happened to the water? (Answer: the teacher poured it out and it’s almost all gone)
5. Ask students what will happen if I keep pouring water? (Answer: the water will run out and there will be no water left)
6. Explain to the students that this is what a limited resource is - a resource that only has a small amount left in the world. Just like the water in the pitcher, all the resources that we have and use in the world are limited.
7. Ask students to make connections to the other resources from the picture sort to explain what a limited resource is. (Ex: iPhones are a limited resource because if people buy them all then it will run out and people have to wait for more to be made. Doctors are a limited resource because if people stop becoming doctors then we will eventually not have any more doctors.)
8. Review the Lyon Arboretum brochure of other Hawaiian plant resources. Explain to students how these plant resources were used.
9. Ask students to explain how the kalo plant is a limited resource based on their experience with Mānoa Heritage Center.

The scaffolds and other materials may be used to support students as they work with sources:

- If you are doing this lesson online or at home, you may do a picture sort through Google Draw or send home a worksheet for students to cut and paste icons into the correct category.
- Formative Task Worksheet:
  - Printable Worksheet on Google Docs
  - Fillable Worksheet to complete online:
- BrainPop Jr. Video about Natural Resources:
- YouTube video about Natural Resources:
- Read Aloud The Lorax by Dr. Seuss. This story can illustrate that resources are important to people and that they can be limited if we use too much. Youtube video of the read aloud can be found here:
The following sources were selected to help students with their picture sort:

- **Featured Source A: Picture Sort**
  - Google Draw online picture sort:
  - Picture sort worksheet:
- **Featured Source B: Lyon Arboretum brochure of Hawaiian plant uses**
  - Google Slide of the plants
  - PDF of the plants
Supporting Question 2

The second supporting question — What does the plant life cycle teach us about limited resources?

The formative task is to record a video clip of students answering the question “why can’t we harvest plants when they are young?”.

Teachers may implement this task with the following procedures:

1. Teacher will show and explain the life cycle of the kalo plant diagram to the class.
2. Compare the young kalo plant with a mature adult one. Students will discuss how they are similar and different and complete the worksheet. Explain that we can’t harvest the plant when it is young because it needs to grow up more. The plant needs to grow the leaves and kalo so we can eat them. If we harvest the kalo before it is ready, then we can’t use it. We must wait and be patient for it to grow.
3. Show students the picture sort from Supporting Question 1. Explain to students that all the resources have their own cycle to go through in order to be made. Some examples include:
   a. Trees have a life cycle in order to be harvested as wood planks used in construction
   b. Factories have a cycle in order to produce new goods.
   c. When people want a job, they have to go through training first. When someone wants to be a construction worker to use the wood from the trees, they first need to be trained and learn how to build.
4. Explain to students that everything has a cycle in order to be made. When we have limited resources, we need to work to not use everything before the resources can be made.
5. Explain to students that they will be growing an ‘uala (sweet potato) plant. The seedlings can be from Mānoa Heritage Center. The class can also grow other seeds or seedlings that work best. Wheatgrass is a fast and easy plant to grow.
6. As you grow the seedlings, you can track its progress over time by drawing what it looks like and having students describe what they see.
   a. NOTE: If you are unable to grow a seedling, you can show students a time-lapse video of a plant growing and pause it as it grows. Students can track the progress of the plant as you pause the video.
7. As you track the seedlings' growth, continue to remind students that it takes a very long time to grow and develop before they can be used.

The scaffolds and other materials may be used to support students as they work with sources:

- Comparison worksheet of young and mature kalo plant
  - Google Doc
  - PDF Worksheet
- Plant growth tracker worksheet
C3 Teachers

- Google Doc
- PDF Worksheet

- BrainPop Jr. video about Water Cycle
- YouTube video about Water Cycle
- Time Lapse video of a strawberry growing
- Show students a “How It’s Made” Video so they can understand even goods that we buy use resources and it all takes time to be made.
- Read Aloud The Giving Tree by Shel Silverstein. This story can illustrate that plants take time to grow and if people just take and take, the plants won’t be able to grow back. It can give students an opportunity to appreciate the plants on our planet.
- Video of the read aloud

The following sources were selected to teach students the life cycle of different plants in order to understand that resources take time to grow and develop.

- Featured Source A: Life cycle of kalo plant
  - Life cycle diagram

- Featured Source B: ‘Uala seedling from Mānoa Heritage Center
  - Link to schedule your visit: https://www.manoaheritagecenter.org/na-kumu/
  - Mānoa Heritage Center can provide teachers different seedlings to grow at home or at school.
  - If doing this during distance learning, students can grow a seed from a fruit or vegetable at home. Here is a video link with some ideas of how to get started:

- Featured Source C: Tour of a garden at Mānoa Heritage Center
  - Link to schedule your visit: https://www.manoaheritagecenter.org/na-kumu/
  - Mānoa Heritage Center offers garden tours both virtually and in person that can provide education about the life cycle of various plants. Students will learn the process for growing different plants as well as how long it takes for these plants to mature in order to be harvested and used by people.
Supporting Question 3

The third supporting question— What happens when we don’t take care of our limited resources?

The formative task is to record a video clip of students answering the question “What happens when we don’t take care of our limited resources?”.

Teachers may implement this task with the following procedures:

1. Ask some student volunteers to participate in the following demonstration:
   a. Ask for 2-3 students to unwrap a bag of individually wrapped candies (ex: Hershey kisses, peppermint candies, etc.) as quickly as they can. You can adjust the time as you feel is necessary. As they unwrap the candies, students will put it on a table. These students will represent the production of resources. You can provide a sign for them that says “limited resources” so the class can remember who they represent.
   b. Instruct 2 students to get all the candies they WANT from the table and put the candies in a bowl/container as fast as they can. (Note: Students may get a little greedy over the candy but in this case that’s a good thing for this demonstration. Feel free to use teacher judgment so it doesn’t get out of hand). These students represent the people who use the resources. You can provide a sign for them that says “people” so the class can remember who they represent.
   c. Count the candies in the bowl/container to see who got more candies.
2. Ask the class the following questions:
   a. Who was waiting longer - the limited resource students or the people? (Answer: people)
   b. Were the “limited resources” students able to produce and unwrap the resources fast enough? (Answer: no)
   c. What happened to the people when they had to wait? (Answer: they got impatient, they were fighting over the candy when one was unwrapped, etc.)
   d. What happened when the limited resources ran out of candy to unwrap? (Answer: no one else could get candy)
   e. Were the candies shared equally? How did that feel to not get the same amount?
   f. What could the people do so that more resources are available? (Answer: take the resources slowly, only take a little bit of candy)
3. Re-do the activity with “limits” or rules in place. An example of a limit is having 2 students take 1 candy each, but they must wait so that there are always 5 candies on the table before they take one.
4. When the 2 students take their candy, ask the “limited resources” students stop unwrapping. Ask the students if this was a better way to use our limited resources and have them explain their thinking.
5. Explain to students that when we use resources and don’t share them, we can use it a lot quicker. Once all these resources are used up, we don’t have it anymore. Then no one gets to use it.
6. Read the story “The Wump World” by Bill Peet. As you read, here are some discussion points you can
C3 Teachers

make:
  a. How did the Wumps treat their land?
  b. How did the Pollutans treat the land?
  c. What was important to the Pollutants? What was important to the Wumps?
  d. How did the Wumps feel being underground?
  e. Why did the Wumps stay underground for so long?
  f. How do you think the Pollutans will treat their new land?
  g. Do you think the wall was important for the Pollutants to build around their city? Why or why not?
  h. How did the Wumps feel at the end?

7. Show the video from the Mānoa Heritage Center about how they harvest Kukui plants for the red dye and how they harvest kalo in a way that allows the plant to still keep growing. This can be done with a field trip or a virtual meeting.

The scaffolds and other materials may be used to support students as they work with sources:

- If you don’t want to use candy for the experience, you can do something similar with pencils that need to be sharpened.

The following sources were selected to teach students that if we don’t take care of our resources they will run out.

- **Featured Source A** is *The Wump World* by Bill Peet
  - Video of the read aloud
- **Featured Source B** is a lesson from Mānoa Heritage Center on how to plant kukui plants for red dye
  - Link to schedule your visit: [https://www.manoaheritagecenter.org/na-kumu/](https://www.manoaheritagecenter.org/na-kumu/)
  - Mānoa Heritage Center will teach students how the Hawaiians used the Kukui plant for its red dye without needing to kill the plant. This is to show students an example of sustainable practices that can be used by all to care for our resources.
Summative Performance Task

At this point in the inquiry, students have examined different types of resources and learned what a limited resource is. They have also learned about the kalo plant life cycle and can apply the concept that plants take time to grow and mature to the production of other resources. Lastly students have also learned that if we misuse our resources or use too much too quickly, our resources can run out. This can also affect the supply of other resources being made. For example, if we run out of trees, it not only hurts the environment, but also affects other industries like paper and construction.

Students should be expected to demonstrate the breadth of their understanding and their abilities to use evidence from multiple sources to support their claims. In this task, students will construct an argument that answers the question, “Is it important to only use what you need?” Students will think about the lessons we have done, and the sources shared to answer the question with evidence.

Students’ arguments will likely vary, but could include any of the following:

- Yes, we should only use what is needed so we can share our resources with others.
- Yes, we should only use what is needed so things have time to grow up and we won’t run out of anything.
- No, we should take what we want so my family won’t run out of anything.
- No, we should take what we want because people can buy another option if they want something similar.

To support students in their writing teach students how to answer an opinion question by restating the question. Give students sentence starters to help them think of their answer. Some sentence starters include:

- Yes, it is important to only use what you need. This is because…
- No, it is not important to only use what you need because. This is because …

To extend their arguments, students will be asked to create a poster advocating for the conservation of one of the plants from the Lyon Arboretum brochure in the Supporting Question 1 resource. Students should include a picture/drawing of the plant, the plant’s name and a description of what we should work to conserve it.

Students have the opportunity to Take Informed Action by:

- **Understanding** what a limited resource is and how resources become limited
- **Assess** different ways students can help their families conserve resources and not use more than is needed at home
- **Take Action** by partnering with an agency/group/program (i.e. Mānoa Heritage Center) that focuses on advocating and supporting the repopulation of a limited plant resource native to Hawai’i. Students can
  - Participate with them in planting or replenishing the plant in a specific location.
C3 Teachers

○ Volunteer to care or harvest the plant when needed
○ Create a garden at home or at school to help grow that plant