



Hawaii's Forest

Concepts

Food Chain
Food Web
Roles of Organisms

HCPS III Benchmarks

SC.4.3.2
SC.4.5.2

Duration

Part 1: 45 Min.
Part 2: 45 Min.
Part 3: 30 Min.

Source Material

PRISM

Vocabulary

Carnivore
Ecosystem
Food Chain
Food Web
Herbivore
Omnivore
Primary Producer

Food for Thought

Summary

Students will address food chains through examples of Hawaii's Rain Forest organisms. Students will use riddles to put images of native organism in their proper food chain order and determine if it is a primary producer, herbivore, or carnivore. Students will draw their food chain organisms in its proper order on the sidewalk with sidewalk chalk.

Objectives

- Students will gain an understanding of food chains and the energy that flows through them.
- Students will be able to identify organisms and place them within their proper trophic levels.
- Students will be able to identify producers, herbivores, carnivores, and omnivores.
- Students will be able to describe how all food chains begin with plants.

Materials

Food Chain Cards and Riddles, Pgs. 8-21 (1 Set, See preparations)
At Auku'u's Fishpond Story, Pgs. 22-23 (1 per student)
Food Chain Organisms Table, Pg. 24 (Teacher Reference)
At Auku'u's Fishpond Assignment, Pg. 25 (1 per student)
Food for Thought Quiz, Pg. 26 (1per student)
An Appetite for Knowledge Homework, Pg. 27 (1 per student)
Food Chain Board Example, Pg. 28 (1 Copy)
Sidewalk chalk (As many colors as possible, and as many sets as necessary for the amount of groups you have)
Adhesive magnetic strips (4 pieces) or Tape (4 pieces) (see prep #1)

Making Connections

We have all witnessed animals eating other animals, whether it is a gecko eating a fly or a bird eating a worm. These organisms and the organisms that they eat are all part of a food chain. When an organism from one food chain eats or are eaten by an organism of another food chain it is a food web. Take some time to look around and see what kind of food chains and webs you can find!

Teacher Prep for Activity

1. Print *Food Chain Board Example*. Laminate cards for durability. If you have a magnetic dry-erase board place magnetic pieces to the back of each card, as these will be used as a demonstration. If you do not have a magnetic board, use tape instead.

Err



2. Print *At Auku 'u's Fishpond* story and worksheet (1 of each per student) and *Food for Thought* quiz (2 per student: pre and post).
3. Print *An Appetite for Knowledge* homework assignment (1 per student).
4. Print out *Food Chain Cards and Riddles*. These need to be printed front and back in order, pages 7 and 8 will be printed double sided, pages 9 and 10 will be printed double sided, and so on. Each double-sided printed page will be a food chain set. When done these will be printed much like baseball cards where the organisms picture is printed on one side and the corresponding information will be printed on the other. Cut each card out and laminate. Try to keep food chain sets together to save time organizing later on.
5. Find a sidewalk around the school where there is enough room for students to draw pictures that are about 3x3 feet squared in area. Allow an area for one picture per student. Make sure the area you choose is an area that can be washed off.

Background

A *food chain* is a group of organisms existing in a natural community (such as a forest, a pond, the ocean etc.) in which energy flows through. Each organism in the chain successively feeds on another organism and obtains energy from it. Each link in this metaphorical chain obtains energy from the one before it and passes energy to the one after it. A food chain usually contains three or four levels or “links.” Each level in a food chain is called a trophic level. All organisms obtain their energy from green plants, which is the first trophic level; from here energy is passed up the chain through the links before it, the second, third and sometimes fourth trophic levels. This is the simplest example of energy flow through a system, but this is not usually the case. A food web is a more realistic model of energy flow. It is comprised of connections of all food chains in an ecosystem. In many cases if one trophic level is removed it could greatly disrupt an ecosystem.

Fourth Trophic Level: Tertiary Consumers - Small and large carnivores (eats other animals)

Third Trophic Level: Secondary Consumer - Small and large carnivores (eats animals that eat plants)

Second Trophic Level: Primary Consumer - Herbivores (eats plants)

First Trophic Level: Producers - Plants that photosynthesize (make their own food)

The organisms below will be used to illustrate various food chains in student activity. This information is also included in a table for easier organizational purposes.

‘Ohi‘a: A common tree in the Hawaiian Islands. This tree can grow to be 100 feet tall or a few inches tall fully grown. The flowers of this tree have nectar, which attracts nectar sipping birds and insects.

‘Olapa: A common tree in Hawaiian rainforest. It has leaves that dance in the wind and dark purple fleshy fruits that are commonly eaten by birds.



Algae: In Hawaiian forest algae commonly grow on the leaves of certain trees. There are many types of algae, many of which are an important food source for the Kahuli, the native tree snail.

Kahuli or Tree Snail: A notable family of O‘ahu snails are the *Achatinellidae*. Snails of this family are 0.5 – 2 cm in height and 0.1- 1.1 cm in width and have a great variation in pattern and color. The Hawaiian term for these beautiful tree snails is *Kahuli*. The Kahuli eat fungi and algae growing on plant leaves and branches.

Carnivorous Caterpillar: Hawaii’s carnivorous caterpillars are about 2.5 cm and have enlarged forelimbs for catching prey. This caterpillar eats small insects. In this lesson we will use the native picture-winged fly as its prey.

Happyface Spider: This friendly looking arthropod is very small, ranging from 0.16-0.24 inches and is unique in design; a different face for every spider, some not so happy. The design is used to help conceal the spider from predatory birds.

‘Io or Hawaiian Hawk: The ‘Io or Hawaiian Hawk was a favored bird of the ali‘i. Males are about 15.5 inches and females are slightly larger. The ‘Io’s natural prey are smaller native birds. With introductions of house mice, black and Norway rats, and birds, this hawk has adapted to eat these new introductions as well.

‘Ope‘ape‘a or Hawaiian Hoary Bat: The ‘Ope‘ape‘a is about 13 inches in length and unlike the North, Central, and South American bats, it roosts in trees. This endemic bat feeds on insects.

Picture Wing Fly: This endemic fly feeds on rotting fruit and leaves, tree sap, and fungi. The wingspan of this insect is about 1 inch, and its wings are made up of ornate patterns. Birds predate on them.

Native Damselfly: The specific damselfly that we will look at is the *Megalagrion calliphya*. It breeds in the wet leaf litter and soil of native plants such as the pa‘iniu, ‘ie‘ie, or lobelioides. This damselfly catches insects in flight such as picture wing flies, like other damselflies and dragonflies.

‘Oma‘o: This native bird is dark gray-brown on its upper portion and pale green below, and are about 7 inches in length. The ‘Oma‘o feeds of fleshy fruits, seeds, and invertebrates.

‘Apanane: The ‘Apanane also known as a Hawaiian Honeycreeper is a small active bird, crimson red with fluffy white under tail feathers. These birds sip nectar from ‘ohi‘a, koa, and mamane flowers as well as catch small invertebrates.

‘Elepaio: The ‘Elepaio is a small curious bird with an upright tail. This bird is commonly called the flycatcher, as insects are its main diet.

Pueo: The Pueo is a small native owl and is a day hunter and feeds on small birds, rats, and mice.



Vocabulary

Ecosystem: A community of organisms and their environment.

Food Chain: A group of organisms that is dependent on each other for its food source.

Habitat: The natural home or environment of a plant, animal, or other organism.

Herbivore: An organism that eats plant material.

Carnivore: An organism that eats other animals.

Omnivore: An organism that eats both plants and animals.

Primary Producer: An organism makes its own food. These are usually plants.

Procedure

Introduction (45 Minutes)

1. Write the words “**Primary producer, Herbivore, Omnivore and Carnivore**” on the board. Ask, “Have you seen or heard these words before? Can anyone give me the definition for any of these terms?” Take answers, if students give correct definitions of any of the four terms write them on the board. Write the definitions for the four terms on the board (see table below.) Explain, “Each of these four terms are categories that all organism fall under.”

Primary producer: Organisms that make their own food using the sun.

Example: Lettuce, Herbs, and Seaweed.

Herbivore: Animals that eat plants.

Example: Caterpillar, Rabbit, and Plankton.

Carnivore: Animals who eat other animals.

Example: Bird (some), Wolf, Fish (some).

Omnivore: Animals that eat both plants and other animals.

Example: Humans

2. Ask, “Which categories do we (humans) fall under? Are we primary producers? [No] Are we herbivores? [Yes] Are we carnivores? [Yes] Are we omnivores [Yes] Explain, “Because some of us eat both plants and animals we are considered omnivores, but we are also considered herbivores and carnivores.”

3. Ask students to give some examples of each term written on the board. Write these examples under each term. If they are not able to give examples, use those provided in the box above and explain how they fit into each category. Take several answers for each category.

4. Explain: “The different types of organisms [producers, herbivores, carnivores, and omnivores] which feed on each other form food chain.” Write the definition of a food chain on the board.

Food Chain: *Eating relationships between organisms in the same area.*



5. Ask, “What do you think this definition means? [Organisms that depend on each other for food] Can you give me an example?” Take answers. If students are unable to answer move to step 6.

6. Read the short story *At Auku‘u’s Fishpond*. Explain, “Pay close attention to the story and listen carefully to see if you can find an example of the food chain in the story.”

7. Ask questions in table below:

<i>Questions:</i>	<i>Possible Answers:</i>
Who was the main character of the story?	Auku‘u
What did Auku‘u see while waiting for his father?	A variety of organisms; organisms eating each other; a food chain.
What organisms made of the food chain?	Algae, ‘Opae‘ula, ‘O‘opu, and an ‘Iwa bird.
What was the primary producer of the chain?	Algae
What was the herbivore of the chain?	‘Opae‘ula
What was the carnivore of the chain?	‘Awa Fish and ‘Iwa Bird.
Can you describe the ecosystem that Auku‘u saw the food chain in?	The pond, near the ocean.

8. Explain, “Like an actual chain, each organism in a food chain represents a link important to the ecosystem it is in.”

9. Place *Food Chain Board Example* up on the board [not in order] and ask students to help you put them in order using their new knowledge of Producers, herbivores, and carnivores. Once magnetic pieces are in the correct order leave them up.

10. Explain, “Energy flows through these food chains. For Example, when we eat, it gives us energy. This energy we get from all foods we eat comes from the sun.” Point to the different magnetic pieces in the food chain as you explain the following. Explain, “As we learned in photosynthesis plants produce their own food with light energy from the sun, thus, we call them primary producers; the herbivore gets its energy from the plants it eats; and the carnivore gets its energy from the herbivores it eats. Energy works its way up the food chain.”

11. Ask, “What do you think would happen if one of the organisms in a food chain goes extinct? What would happen to the other organisms that depend on it for food?” [The other animals may starve and die, possibly become extinct themselves.]

12. Explain, “As only plants can use the energy from the sun to make food, all food chains begin with plants. Plants are the base of every food chain, including ours (humans).”

13. Ask, “What do you think would happen if we removed plants or primary producers” (We would all die, we are dependant on plants)



Part 2

Activity: Food Chain Sidewalk Chalk (45 Minutes)

1. Lead a quick review of what a food chain is. Have students name the different kinds of organisms in a food chain [producers, herbivores, carnivores, and omnivores] and explain what a food chain is. Use *Food for Thought Quiz* questions to help review the information discussed in Part 1 and prepare them for the post quiz.
2. Divide class into groups of three and give each group a set of *Native Organism Activity Cards* facedown.
3. Ask each group to pass out the cards amongst their group. Have the students take turns reading the card they are responsible for aloud in their group.
4. Instruct students to use what they have learned and the informational clues on the back of the card to place their cards in its proper food chain order as a group.
5. Once all students have correctly put their cards in order instruct them that they will be going outside and drawing out their food chain within their groups on the sidewalk. Ask students to remember which group they are in. Here you may want to administer rules for being quiet while outside as other classes are in session.
6. Set up students in groups along the sidewalk giving them enough room to draw. Instruct students to draw the Organism Card that they are responsible for (within a block on the sidewalk or of a certain size) in order of their group's food chain on the sidewalk. Give students a time limit (this will depend on the amount of time you have for this activity). Ask students to label their organism with the name written on the card.
7. Instruct, "Talk amongst your groups and together label each picture in your food chain as either a "Primary producer, herbivore, or carnivore"

Note: You may want to give time for a viewing succession or have each group present their organism, and explain who eats whom, and the term for each of their organism (For example, Producer- 'Olapa tree, Herbivore- 'Apapane, Carnivore – Pueo).

8. Proctor *Food for Thought* quiz post.

Part 3: The Food Web (Option: This part may be done before part 2) (20 Minutes)

Note: If part 3 is done before part two begin with the following: Divide class into groups of three and give each group a set of *Native Organism Activity Cards* facedown.

1. Ask students to bring up their food chain cards and either tape them or stick them to the board with magnetic backing in their proper order. Explain, "We just learned about food chains. We learned about the organisms and how they are connected by what they eat." Ask, "Can anyone tell me what a food web is?" [Interconnected food chains] Explain, "A food web is similar to a food chain, in that it is made up of many food chains. Food webs are made up of two or more food chains in which organisms from one food chain feeds on one or more organisms from



another food chain. This is possible because like us, other organisms may eat more than one type of food.”

2. With the food chain cards placed on the board draw lines through all of the food chains connecting each member of that food chain. Your end result will be multiple lines of food chains. Next, draw one line from a member of one food chain to a member of another food chain that it would eat [Line from ‘Io (Hawaiian Hawk) to an ‘Elepaio, or ‘I‘iwi, or to an ‘Oma‘o].

3. Have volunteer students come up and draw similar lines. You may allow students to turn over cards and look at the riddles on the back to help them decide where to draw their lines. Discuss as a class after each line is drawn to see if everyone agrees with the relationship that was drawn

Extension Activities

Have students do a report on any animal of their choosing. To do this, students may visit the school or public library, look on the web, or interview a local professional (Example: Interview a Zoologists at the local zoo or a scientists at a local university). Ask students to fill out *An Apatite for Knowledge* worksheet.

Culture/Art Connections

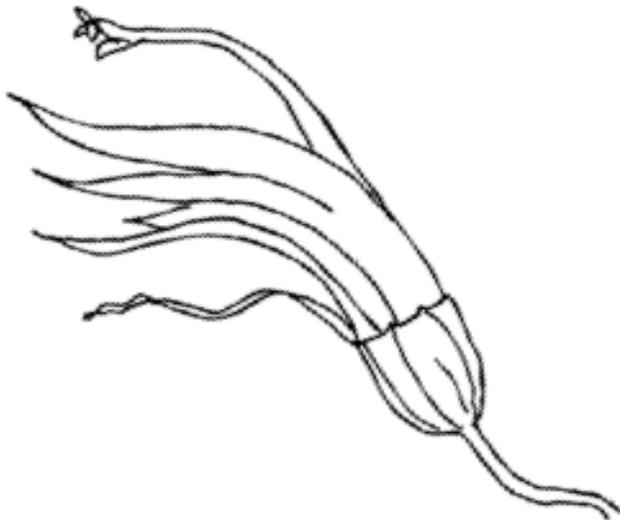
Culture/Art: Have students reread story, *At Auku‘u’s Fishpond*. Pass out *At Auku‘u’s Fishpond Assignment*. Have students fill out worksheet and complete drawing at bottom.



Pueo



'i'iwi



'Oha wai Flower

The Food Chain

Pueo
'i'iwi
'Oha wai Flower



'iwi

I like to sip nectar,
from flowers so sweet.

I can reach deep inside,
with the curve of my beak.

My eye sight is great
I can see flowers way up high
for their colors are brilliant
against the blue sky.

Pueo

I have sharp claws,
used to catch prey.

I do not hunt at night,

I hunt during the day.

I like to eat things that move
even those in mid flight,
My feathers help camouflage me,
they are brown and white.

The Food Chain

Pueo

'iwi

'Oha wai Flower

'Oha wai Flower

I am dark purple,
and curved in shape.

To attract pollinators
sweet nectar I make.



'lo (Hawaiian Hawk)



'I'iwi



'Ohi'a Blossom

The Food Chain

'lo (Hawaiian Hawk)

'I'iwi

'Ohi'a Blossom



'Iwi

I like to sip nectar,
from flowers so sweet.

I can reach deep inside,
with the curve of my beak.

My eye sight is great
I can see flowers way up high
for their colors are brilliant
against the blue sky.

'Io (Hawaiian Hawk)

I like to soar way up high,
I spot my prey,
from the sky.

I have sharp claws
and a sharp beak to match,
for eating the prey
that I catch.

The Food Chain

'Io (Hawaiian Hawk)

'Iwi

'Ohi'a Blossom

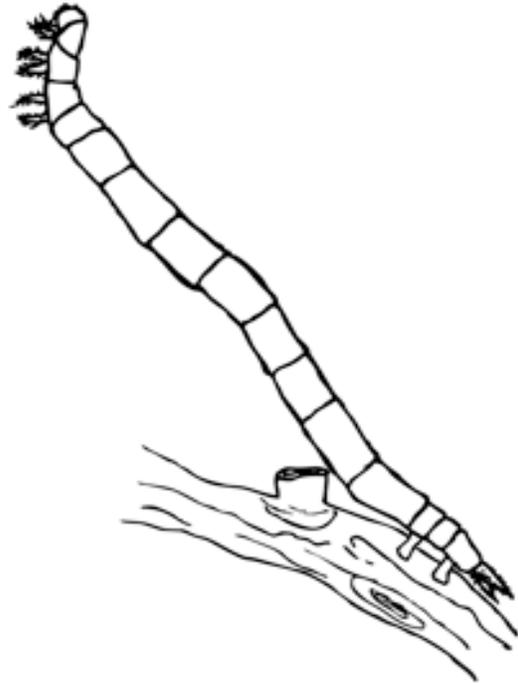
'Ohi'a Blossom

I am bright red,
and sit high on 'Ohi'a trees
my nectar is loved
by both birds and bees.

I am very common
throughout the Hawai'i,
Where ever you go
It is likely you'll see me.

The Food Chain

Elepaio
Carnivorous Caterpillar
Picture Wing Fly



Carnivorous Caterpillar



Picture Wing Fly



Rotting Leaves



Carnivorous Caterpillar

Sure I am little
but don't be fooled,
I am quick, I can stand,
and I can catch my own food.

The Food Chain

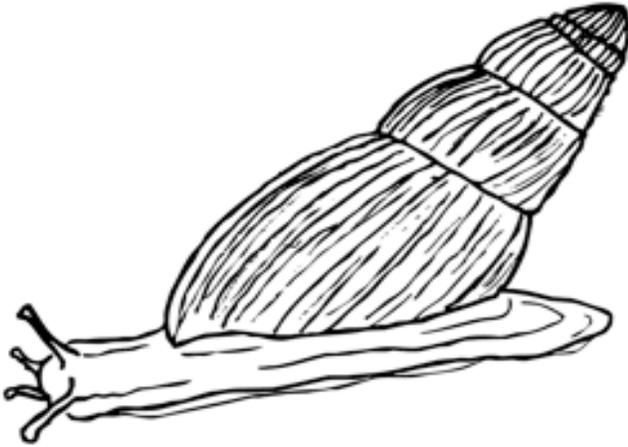
Carnivorous Caterpillar
Picture Wing Fly
Rotting Leaves

Rotting Leaves

I once grew on a tree
then slowly fell to the ground
I no longer photosynthesize
I am turning brown.

Picture Wing Fly

I like to eat leaves and fruits
that fall to the ground.
I like them rotting
and turning brown.



Rosy Wolf Snail



Kahuli (Tree Snail)



Algae on Leaf

The Food Chain

Rosy Wolf Snail
Kahuli (Tree Snail)
Algae on Leaf



Kahuli (Tree Snail)

I live in a shell,
as colorful as can be,
I hold on tight,
to the leaves of trees.

The food I eat,
Is found where I reside,
on the surface of leaves,
and on their undersides.

Rosy Wolf Snail

They call me a cannibal,
Because I eat my own kind,
I will eat others like me,
all that I can find.

I am not native in Hawai'i,
Eating those that belong
I eat others alive
And hush their song

The Food Chain

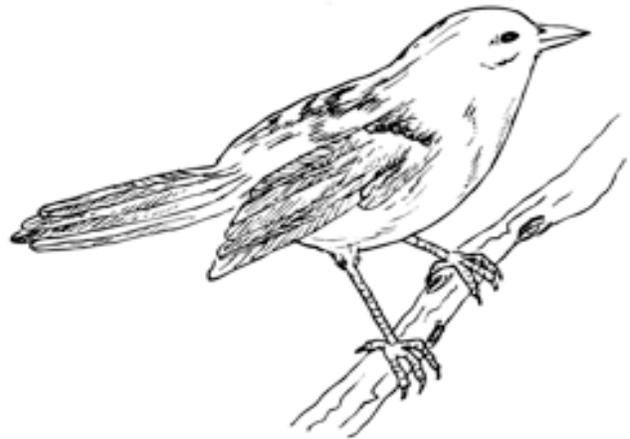
Rosy Wolf Snail
Kahuli
Algae on Leaf

Algae on Leaf

I grow on leaves,
small as can be,
I photosynthesize,
just like a tree.



Io (Hawaiian Hawk)



Oma'o



Olapa

The Food Chain

Io (Hawaiian Hawk)

Oma'o

Olapa



Oma'o

I like to eat insects

I like to eat seeds

I like to eat fruits

I simply like to feed

I am an 'Oma'o

a Hawaiian thrush

you can hear me sing

If you keep your voice to a low
hush.

'Io (Hawaiian Hawk)

I like to soar way up high,

I spot my prey,

from the sky.

I have sharp claws

and a sharp beak to match,

for eating the prey

that I catch.

The Food Chain

'Io (Hawaiian Hawk)

Oma'o

Olapa

Olapa

My berries are purple

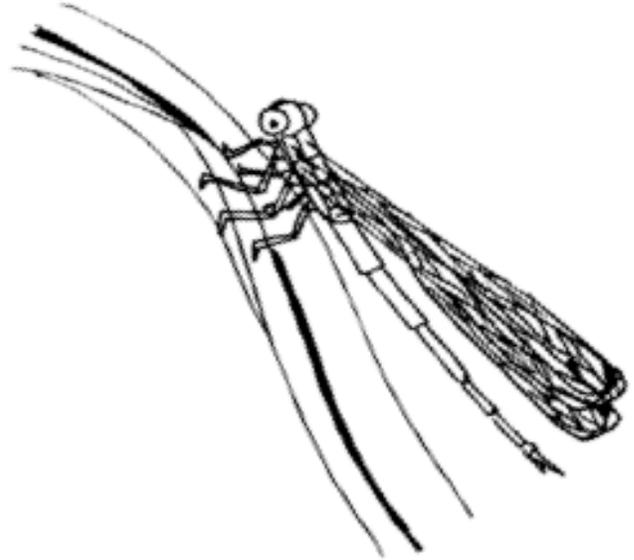
Juicy and round

they are usually eaten

before they fall to the ground.

The Food Chain

Native Damsel Fly
Picture Wing Fly
Rotting Oha wai Fruit



Pinao (Native Damsel Fly)



Picture Wing Fly



Rotting Leaves



Pinao (Native Damsel Fly)

I have large compound eyes,
on my movable head,
I have long legs
that I catch insects with.

The Food Chain

Pinao (Native Damsel Fly)
Picture Wing Fly
Roting Oha wai Fruit

Rotting Leaves

I once grew on a tree
then slowly fell to the ground
I no longer photosynthesize
I am turning brown.

Picture Wing Fly

I like to eat leaves and fruits
that fall to the ground.
I like them rotting
and turning brown.



The Food Chain

Hawaiian Hoary Bat
Picture Wing Fly
Rotting Oha wai Fruit



**Ope'ape'a
(Hawaiian Hoary Bat)**



Picture Wing Fly



Rotting Leaves



Hawaiian Hoary Bat Ope'ape'a

My mainland relatives eat fruits

But that's not for me,

I like eating insects,

And living in trees.

The Food Chain

**Hawaiian Hoary Bat
Picture Wing Fly
Rotting Oha wai Fruit**

Rotting Leaves

I once grew on a tree
then slowly fell to the ground

I no longer photosynthesize

I am turning brown.

Picture Wing Fly

I like to eat leaves and fruits
that fall to the ground.

I like them rotting
and turning brown.



At Auku‘u’s Fishpond

By Anya Tagawa

Kalawai‘a was lashing the *ama* onto the canoe when he saw a flash of red dart by and quickly turned to look. It was his young nephew Auku‘u wearing a bright red *malo*. “Aloha Anakala Kalawai‘a!” Auku‘u shouted as he sprinted toward the path down to the shore. “Aloha,” Kalawai‘a shouted back grinning. Auku‘u went down to his family’s pond every day to greet his father who fished beyond the shore. Although it is a long walk from his hale, at this very spot he can see the entire bay and could watch for the arrival of his father’s canoe. Along the way he saw many friends and shouted greetings as he passed by. “Aloha Pikoi, your net is coming along nicely” Auku‘u complimented. “e Kala, come for dinner, you like fish?” he asked his close friend, “‘Ae” Kala said “I’ll see you at dinner.” Auku‘u continued down to the shore walking quickly for he was excited to see his father for he had been three days.

In no time at all he arrived at the shore, it was a warm day and he welcomed the cool and salty ocean breeze blowing inland. Looking down the shore Auku‘u realized that he was early; his father’s canoe was nowhere in site. With some time to spare he decided to sit at the edge of his family’s fishpond to cool his feet. Auku‘u watched the ripples move over the water as he moved his feet back and forth. Realizing he had a lot of time to spare Auku‘u lay down amongst the ‘*akulikuli*, a small plant that carpeted the edge of the pond, to relax. He began to let his thoughts wonder. Then at the corner of his eye he saw a little flash of red at shallow edge of he pond, seeing Auku‘u’s shadow it quickly swam back into the dark lava crevice to hide. Curious, Auku‘u rolled over onto his ‘*opu* to get a closer look into the brackish water.

In doing so he found an entire underwater community, much like the village he lives in. Auku‘u saw different colors of algae, many kinds of fish, snails, and little red shrimp called ‘*opae‘ula*. Auku‘u had his eye on one particular ‘*opae‘ula*. Auku‘u delightedly watched the little red shrimp as it feed on the algae-coated rocks and swam from rock to rock in a proud matter, even though it was the smallest shrimp in the pond. Auku‘u watched intently, then suddenly, and very unexpectedly, a large *awa* fish with a large mouth swallowed that proud shrimp in a single gulp. Stunned, Auku‘u quickly got to his feet trying to understand what had just happened. Upset that his new friend was eaten, he glared angrily at that fish as it swim away, but before the *awa* could swim safely into the sedges that bordered the pond, an ‘*iwa* bird swooped down and swallowed the *awa*. “Ahhh!” Auku‘u exclaimed with shock, staring blankly at the spot where the fish had just been.

With out time to see where the ‘*iwa* bird took off to, Auku‘u saw his father’s canoe come to shore, and immediately ran down to meet him. “Aloha Makuakane” said Auku‘u, “What have you caught?” His father held up his catch smiling. Seeing his father’s catch he quickly forgot about the little ‘*opae‘ula*. Instead Auku‘u examined the brightly colored *weke* (a type of fish), the shine of the silvery *akule* (another type of fish), and the brilliant hues of color of the *mahimahi*. Then he noticed the *he‘e* (octopus), and instantly felt bad for it, as it was tangled around the line in which it was caught, and instead of the vibrant changing colors Auku‘u saw while swimming, it was now a pale white with a tinge of brown.

“Makuakane, why did you have to catch it? It was so much more beautiful alive,” said Auku‘u sadly. “Well,” replied his father, “we need to nourish our bodies and to do so we need to eat.” Hearing this Auku‘u suddenly remembered the little ‘*opae‘ula* and *awa* who also died to



become food for another. “It is a part of life,” his father continued, “but we must remember to take only what we can eat as other animals do” Auku‘u nodded, for he understood what his father meant.

Vocabulary:

‘Opae ‘ula: Little brackish water shrimp endemic to Hawai‘i.

Awa: A type of Fish

Sedge: A grass like plant.

Weke: A type of fish.

Mahimahi: A type of fish.

Akule: A type of fish.

He ‘e: Octopus.



Rain Forest Organisms – The Food Chain

<i>Organism</i>	<i>Trophic Level</i>	<i>What it eats</i>	<i>What eats it</i>
Kahuli or Tree Snail	Herbivore	Algae and fungi	Introduced Rosy Wolf Snail
‘Ohi‘a Tree	Producer	Makes its own food with energy from the sun.	Birds (‘Apapane)
‘Olapa	Producer	Makes its own food with energy from the sun.	Birds (‘Oma‘o)
Carnivorous Caterpillar	Carnivore	Insects (Picture wing fly)	Birds (‘Oma‘o)
Happyface Spider	Carnivore	Insects	Birds (‘Oma‘o)
‘Io or Hawaiian Hawk	Carnivore	Other birds, rats, and mice	None
‘Ope‘ape‘a or Hawaiian Hoary Bat	Carnivore	Insects	None
Picture Wing Fly	Herbivore	Tree sap, Rotting fruits and Leaves	Birds, Carnivorous Catapillar, Damselflies, Dragonflies
Native Damselfly	Carnivore	Insects	Birds (‘Oma‘o)
‘Oma‘o	Omnivore	Fleshy fruits, seeds, and insects	Pueo and Io
‘Apapane	Herbivore	Nectar of Koa, Mamane, and ‘Ohi‘a Blossoms	Pueo and Io
Pueo	Carnivore	Small birds, rats, Mice	None
Elepato	Carnivore	Small flying insects	Pueo and Io



At Auku'u's Fishpond

Directions: Read story titles "At Auku'u's Fishpond then answer the questions below.

1. Why did Auku'u go the fishpond every afternoon? (1 point)

2. Fill in the blanks below: In the story what four organisms were a part of the food chain? (4 points)

The _____ ate algae that grows on the rocks of the pond, which was eaten by the _____, a kind of fish. This fish was later swooped up in the mouth of a _____ who then flew away.

3. In the end of the story what lesson did Auku'u learn? (3 Points)

4. What would happen if we caught and took all of the 'Opae'ula in Auku'u's family fishpond? Hint: Thin about what would happen to the other organisms that live in the pond. (2 Points)

5. In the box below draw an organism from Auku'u's fishpond, then circle one of the following terms below that fits your chosen organism.

Primary Producer

Herbivore

Carnivore

Omnivore



Inoa/Name: _____

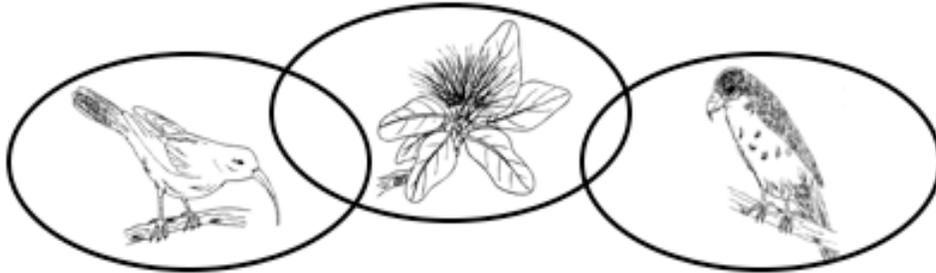
La/Date: _____

Food for Thought

1. The _____ is where organisms depend on other organisms for food energy.
2. An organism that eats plants is called a _____.
3. An organism that makes its own food using energy from the sun is called a _____.
4. In a food chain organisms eat each other for _____.
5. I am a _____.
 - a. Herbivore
 - b. Carnivore
 - c. Omnivore
 - d. Producer

WORD BANK Herbivore Energy Producer Food Chain
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6. In the food chain below circle the carnivore and the producer



7. Draw a food chain below using organisms of your choice or the organisms provided.
[shark, seaweed, fish]



An **appetite** for knowledge

Directions: Choose your favorite animal and research it to answer the questions below. Some hints in researching a topic: Find a book at your schools library, read an encyclopedia, interview a professional (example: a science teacher, zoologists, a farmer etc.), or with permission look on the internet.

1. What is the name of your favorite animal? _____

2. Where does this animal live? _____
(For example, the 'I'iwi lives the the rain forest in the Hawaiian Islands.)

3. Circle One

This animal is a: **Herbivore** **Carnivore** **Omnivore**

4. What does this animal eat? _____

5. Why is this your favorite animal? _____

6. Draw a picture of your animal where it lives and eating what it likes to eat.

Food Chain Board Example

At Auku'u's Fish Pond

Food Chain Order:

- Iwa (Bird)
- Awa (Fish)
- Opae Ula (Shrimp)
- Algae

