Traditional Uses Lesson

Notes

- When Hawaiians arrived in Hawaii, they brought crops, but most of the plants were already here
- They utilized the forest for survival necessities
- How would the forest be useful if you had just landed on a deserted island?
- Hawaiians also experimented with different plants to figure out which were the best for making tools, cordage, clothing, canoes, etc.
- A lot of trial and error occurred before they knew which plants were important for which necessity
- The importance of such plants for survival necessities led Hawaiians to value the plants, and hold them sacred

Activity #1

- Look at the photos of each plant
- What kinds of purposes did the plants serve? What could have been made from it?

Items for Activity: Photos of each plant

Hawaiian/ Unfamiliar Terms

Ka Hana: work, labor, duty, task
- Hawaiians had designated duties that enabled their ‘ohana to survive
- What kinds of professions do you think Hawaiians had?
Ka Mea hana/ Mea ho’ohana: Tool

Traditional uses for ‘Ohi’a Lehua

- House posts
- Spears
- Poi boards
- Kapa anvils
- Kapa beaters
- Canoe gunwales, rafters, seats
- Ki’I: sacred images- reddish wood for sacrifice
- Fire wood
- Hale for heiau: houses for sacred temples
- Loose roofing- foliage
- Tool handles
• Leis- Liko/ leaf buds
• Flowers contain nectar for birds

Items needed: photos of uses

Traditional uses for ‘Ie’ie

• Ke Kaula/ Aho: Cordage made with ‘Uki’uki. Split vertically in half after placed in imu and braided with ‘Uki’uki leaves
• For tying house posts, weaving hina’I: baskets/ fish traps, foundations for ali’I Mahiole: feathered helmet
• Sandals
• Roof thatching

Items needed: photos of uses/ ‘Uki’uki plant

Traditional uses for Halapepe

• Leis- Kona people were recognized by their frequent wearing of the Halapepe flower lei
• Carving images- soft white wood

Items needed: photos of uses

Traditional uses for Maile

• Fragrance for scenting kapa
• Leis
• Fruits are eaten by Hawaiian birds
• Hina’I- fish traps

Items needed: photos of uses

Traditional uses for Lama

• Fish traps- wood
• Heiau timber
• House posts
• Fencing for sacred areas (ali’I houses)
• Tide gates
• Fruit eaten by Hawaiian birds
• Leis- liko

Items needed: photos of uses
Activity #2

- Create a replica of a tool/ other thing that was made from one of the plants
- Or draw/ paint tool/ Tool being used in its proper environment

Quiz
Inoa:

Traditional Uses Quiz

1. What does hana mean?

2. Name three things the ‘Ohi’a lehua was used for.

3. Name two things the ‘Ie’ie was used for.

4. People from which area were known for wearing Halapepe leis?

5. What did Hawaiians use Maile to scent?
6. Name two things the Lama was used for.

Extra Credit

7. How did Hawaiians make cordage with the ‘Ie’ie?
Characteristics Lesson

Notes

- Scientists classify plants and group them into different categories by their main characteristics such as leaf and flower shape size and color
- Certain characteristics may be distinct to the plant order, family, or genus
- Each plant is given a genus and species for the genera it falls under, and the particular species in the genera
- Species are the same if they are able to interbreed
- Isolation over time causes a certain species to separate, becoming 2 different species
- Scientific names are Latin

Activity #1

- Look at the photos of each plant. Write down a brief description of each plant
- Questions to think about: Is it a tree/shrub? What size/shape/color are the leaves? Flowers?

Items for Activity: Photos of each plant

Hawaiian/ Unfamiliar Terms

Ka Lau: leaf
Ka Pua: flower
Ka Lala: branch
Ke Kumu: trunk/tree
Ka 'Ili: bark
Ka Ma‘alewa: aerial root

Monoeccious: A plant, which has both reproductive organs on the same plant
Dioecious: A plant, which has reproductive organs on separate plants
Host plant: A plant dependent on another for survival
Endemic: A species confined to a particular place, evolving there, and found no where else
Native/Indigenous: A species belonging to a particular place (more than one) naturally
Introduced/Alien: A species not belonging/evolving in a particular place
Endangered: A species with a small population, in threat of becoming extinct
Invasive: A species (usually introduced) not common in a particular place, taking over, and threatening the survival of certain species

**Characteristics for ‘Ohi’a Lehua *Metrosideros polymorpha***

**Family:** MYRTACEAE, Myrtle Family

**Description:**
- Endemic tree or shrub
- Reaching to 100 ft. tall
- Wood is hard, heavy, close-grained and varies in color from a light red to a purplish blue
- The leaves are shiny or dull green, oval-rounded
- Tassel-like blossoms vary from the common, bright-red through salmon-pink orange or yellow and pale yellow in color
- Tiny seeds
- Pioneer plant- one of the first to establish on new flows
- Shrublands, mesic to wet forests, from sea level- 2200 meters

**Characteristics for ‘Ie’ie *Freycinetia arborea***

**Family:** PANDANACEAE, Pandanus Family

**Description:**
- Woody climber,ascending trees/rocks/ground crawler
- Indigenous
- Twines like a vine, climbs up to 100 ft.
- Spiky linear yellowish green leaves up to 80cm long
- Stems up to 1” thick
- Host plant- Usually climbs ‘Ohi’a Lehua
- Salmon orange/pink/green flowers
- Red berries
- Mesic-wet forests on ridges/slopes 300-1500m
- Other species found in South pacific (Marquesas, Tahiti)
- Pollinated by Japanese White eye birds, past by endemic Drepanids

**Characteristics for Halapepe *Pleomele hawaiensis***

**Family:** PANDANACEAE, Pandanus Family

**Description:**
- Tree reaching 5-6 meters tall
- Spiky linear yellowish green leaves up to 40cm long
- Resembles money tree- same genera
- Yellowish colored flowers
• Red berries up to 13mm long
• A rare endemic and endangered species
• Found in dry forest from 300-860m

Characteristics for Maile *Alyxia oliviformis*

Family: APOCYNACEAE

Description:
• Endemic twining vine/shrub
• Upper leaf- glossy, lower- pale green, oval shaped, and sometimes oppositely arranged
• Greenish-yellowish white flowers
• Common in most vegetation types, dry/wet sea level- 2000 meters
• Morphological in habitat- leaf shape/ size and texture vary
• Hawaiians recognized four types
• Maile Kaluhea- Fragrant Maile
• Maile Lau li’I- Small leaved Maile
• Maile Ha’I Wale- Brittle leaved Maile
• Maile Pakaha- Large leaved Maile
• Contains the chemical- Coumarin responsible for fragrance when crushed

Characteristics for Lama *Diospyros sandwicensis*

Family: EBENACEAE

Description:
• Dioecious endemic tree
• Grows to 40 feet tall
• Dark black/ gray wood color
• Pale green waxy leaves, oval shaped
• Reddish new leaf growth
• Whitish green flowers
• Egg shaped fruits/ persimmons are edible, yellowish orange- red orange
• Dry- mesic forests/ wet 5-1220meters
• Varieties in Africa, Asia, Pacific

Activity #2

• Divide into groups- each responsible for measuring height/ diameter at breast height for 1 plant of same species
• Record the leaf color/ shape
• Are there flowers present?
• Scientists would graph data to know the general characteristics of a certain species in a particular habitat
• Each group graphs height and diameter- What can you tell about the species in this habitat?
• Are leaf sizes/ colors the same?

Items for Activity: Measuring tape, height pole, graphing sheets
Plant Characteristics Quiz

1. What is a pioneer plant? Why is the ‘Ohi’a Lehua a pioneer plant?

2. Name two types of Maile

3. What type of habitat does the Halapepe belong to?

4. Describe the wood and fruit of the Lama tree.

5. What color are the ‘Ie’ie flowers? Why is it a host plant?
6. Which of the 5 plants we learned about are endangered? What does endangered mean?

Extra Credit

7. What is the name of the chemical that makes the Maile fragrant?

8. Write the Hawaiian terms for each part of the plant.