



## ALOHA, FOREST FRIENDS

Grade 1

---

### Lesson at a Glance

Children help to tell the story of how plants and animals reached the isolated Hawaiian Islands. Props from the story then provide materials for an ongoing learning center.

### Key Concepts

Different living things have specialized structures such as wings, shells or fins. Some of these structures enabled native plants and animals to reach the isolated Hawaiian Islands.

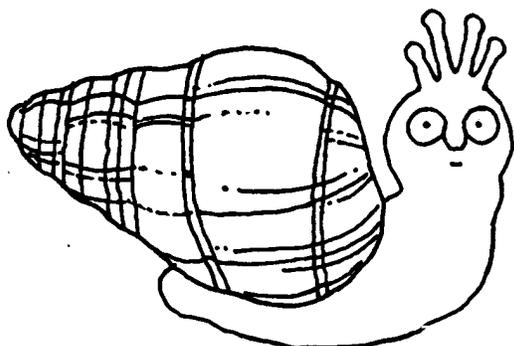
### Objectives

Students will be able to:

- 1) identify how specialized structures of animals enabled them to reach Hawai'i; and
- 2) distinguish between some native and introduced plants and animals.

### Time

two class periods and ongoing learning center



### Subject Areas

science, language arts, Hawaiian studies, art

### Materials

story and stencils (provided)  
student activity sheet (provided)  
construction paper crayons or colored markers  
scissors  
stapler  
flannel board (optional)

1/8 yd of light-colored felt (optional)

glue (optional)

oak tag (optional)

### Preparation

Cut out a large profile of an island shape and some waves, as illustrated on the story sheet. The story can be told with paper cutouts on a bulletin board or with oak tag cutouts on a flannel board. Both options are described below:

Bulletin Board: Color and cut out the story stencils omitting the animals that are also included on the student activity sheet. (Students will color and cut out these animals to be used in the story.)

Flannel Board: Color and cut out *all* the story stencils. (Colors of the animals are described in Teaching Suggestion #4.) Glue all the stencils to oak tog and laminate if desired. Glue small squares of felt to the back of the cutouts so that they will stick to the flannel. If a flannel board is not available, staple a 1 x 1 m (3 x 3 ft) piece of flannel to a large piece of cardboard.

### **Prerequisite**

“Schoolyard Search,” Plants and Animals, Grade 1.

### **Teacher Background**

The native plants and animals presented in the story reached the islands largely by chance. Their chances of successfully colonizing the islands were increased due to specialized structures, such as seeds that could be carried in the wind, wings or fins that provided locomotion, or shells that provided protection from salt water. Chance also played a role in survival once an organism reached the islands.

#### The Story Characters

The *kōlea* or Pacific golden plover is capable of flying long distances over water without stopping. Each August the birds leave their breeding grounds in Alaska or Siberia and fly to Hawai‘i. They make this incredible flight in only 72 hours and many birds return to the same lawn or field year after year! In April the birds return to their northern breeding grounds.

The tiny happy-face spider reached the islands by a less direct method. It produces strands of silk that catch the wind and carry the spider to new locations. This mode of transport, called **ballooning**, is how scientists believe the happy-face spider reached Hawai‘i.

Land snails are not long-distance travelers, yet some species managed to reach the islands without human assistance. They have a mobile home that protects them from the elements and they are capable of adhering to surfaces such as logs or birds’ feathers. Scientists believe land snails probably reached the islands by adhering to a mass of vegetation that drifted in ocean currents. Some snails may also have arrived on the feathers of a bird.

Specialized plant structures, such as the protective seed pods of *koa*, the tiny windblown seeds of ‘*ōhi‘a*, or the berries of *pū‘ahanui*, enabled some plants to reach the islands. *Koa* and ‘*ōhi‘a* are common native forest trees in Hawai‘i. *Pū‘ahanui*, a native hydrangea, is a common native shrub with red berries that contain many seeds. The plant may have reached the islands in a bird’s digestive tract. In the story, the seeds are dispersed by the *kōlea*. However, *kōlea* typically eat crustaceans and insects, and we do not know what bird may have actually dispersed this plant to the islands.

From the relatively few colonizing plant and animal species, many new species evolved in Hawai‘i, often becoming something quite different from their ancestors. Plants and animals that arrived in the islands without the help of people are considered to be native. Organisms that arrived on Polynesian canoes, or later, in jets and ships, are known as introduced. The skink (lizard) that appears in the story represents one of the small animals that probably arrived as a stowaway on a Polynesian canoe. Four gecko and three skink species were known to have reached Hawai‘i before the arrival of Europeans. (The skink is the only animal on the student activity sheet that was unable to reach the islands without human assistance.)

NOTE: The story condenses the amount of time it would have taken for plants and animals to become established in Hawai‘i. Actual colonization of the islands took place over millions of years. The story also presents plants and animals as arriving in their present forms, since we cannot be certain what the ancestors of native plants and animals looked like. For example, happy-face spiders are not known to occur anywhere else; they evolved in the islands. Their ancestors may not have had markings on their abdomens that resemble a happy face. (For more information on happy-face spiders, see “Put on a Happy Face,” Plants and Animals, Grade K.)

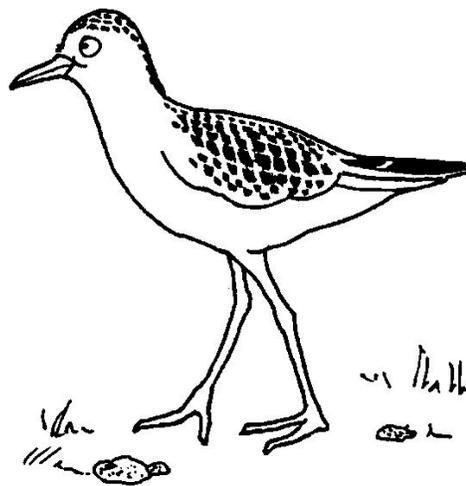
### Teaching Suggestions

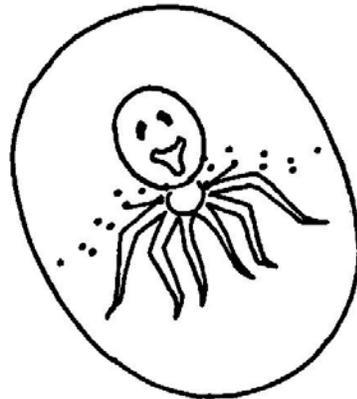
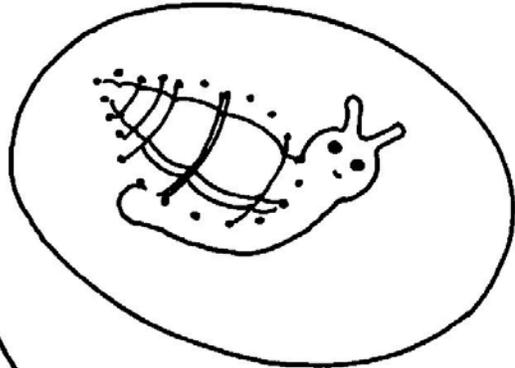
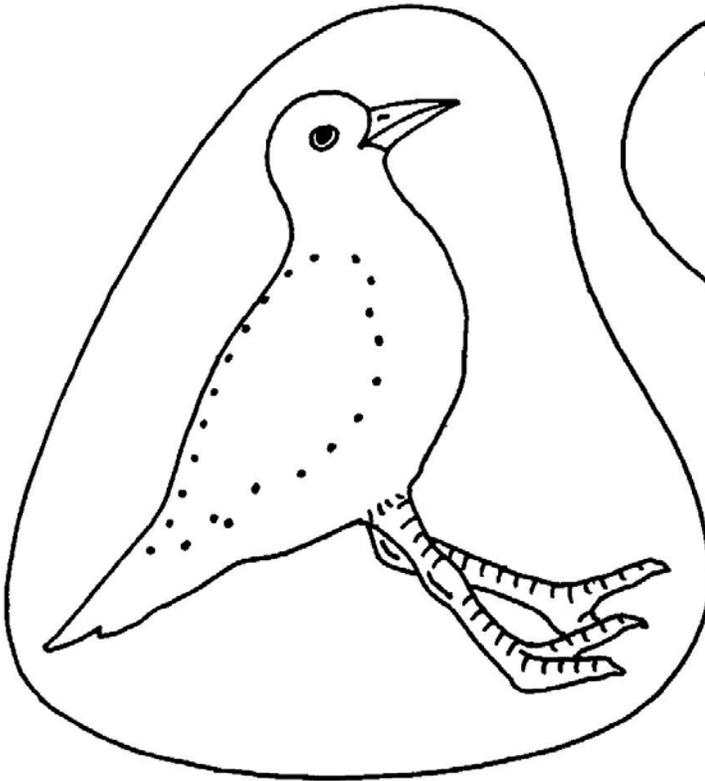
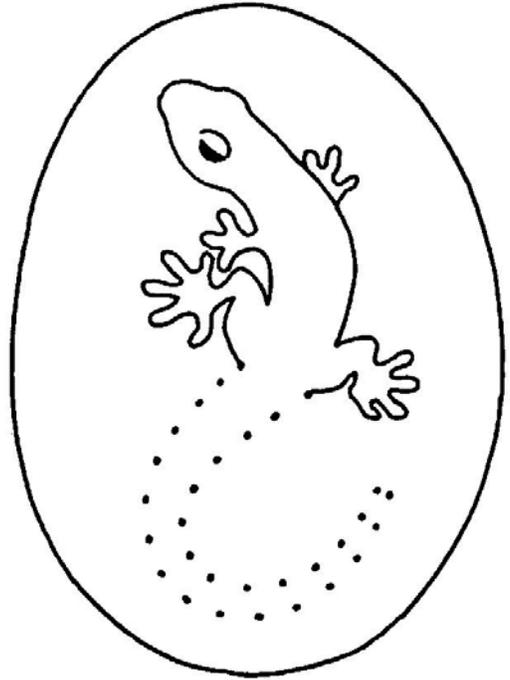
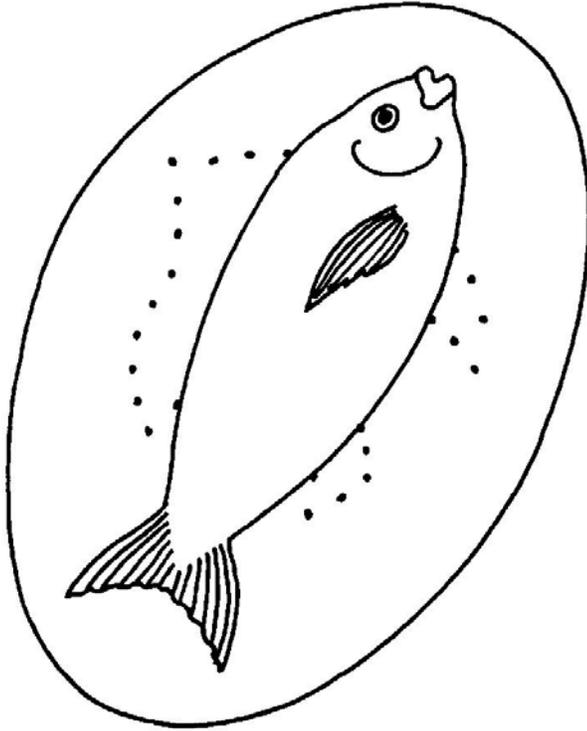
1. Review the role of plant and animal structures such as seed pods, feathers or shells in plant or animal protection and animal movement.
2. Distribute the student activity sheet. Ask students to identify the missing body parts. Have them connect the dots to complete the pictures.
3. Ask students to predict which of these animals could reach the isolated Hawaiian Islands and identify how specialized body structures could enable the animals to move or protect themselves enroute to the islands. (Note that the skink’s tail was of no use in dispersal.)
4. Have students color the animals (spider—yellowish green; *kōlea* bird—brown with gold spots, black beak and legs; skink—brown; snail—black, gray or tan with any color shell; fish—yellow).
5. If the story is to be told on a bulletin board, ask students to cut the animals out along the bold black lines and collect the cutouts for use in the story.
6. Gather children around the bulletin or flannel board and read the story introduction, which explains how to participate. Divide the class into four groups and assign a line of the story’s poem and its accompanying hand motions to each group.
7. Read the story and discuss how each new plant or animal reached the island.
8. Explain that the plants and animals that first reached Hawai‘i probably looked different from those pictured in the story and that we know plants and animals changed over time to adjust to their new home.

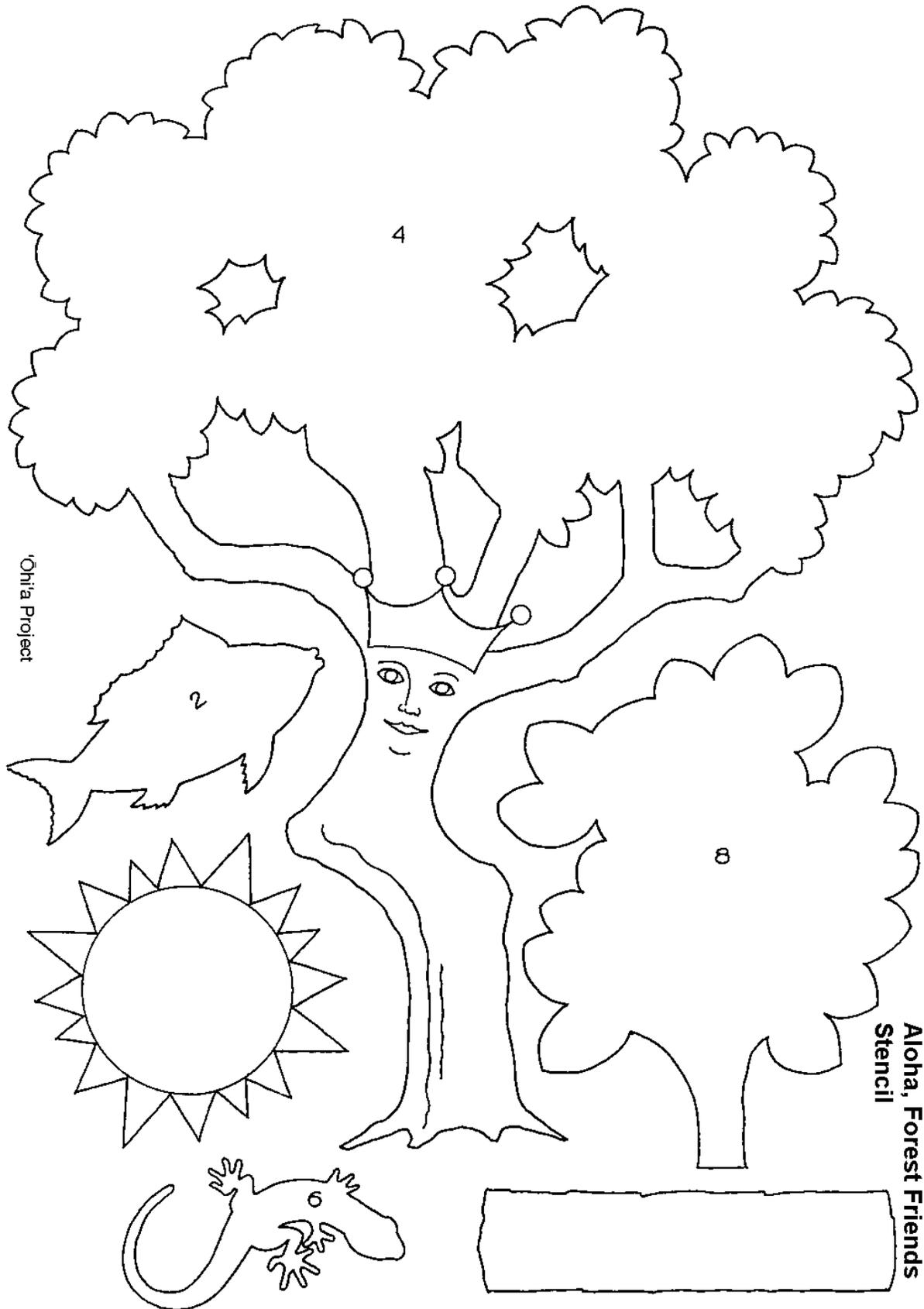
9. Explain that native organisms are those that reached the island without the help of people. Summarize by having students identify native plants and animals in the story and the introduced organism (skink). Explain that many of our native plants and animals occur nowhere else in the world!

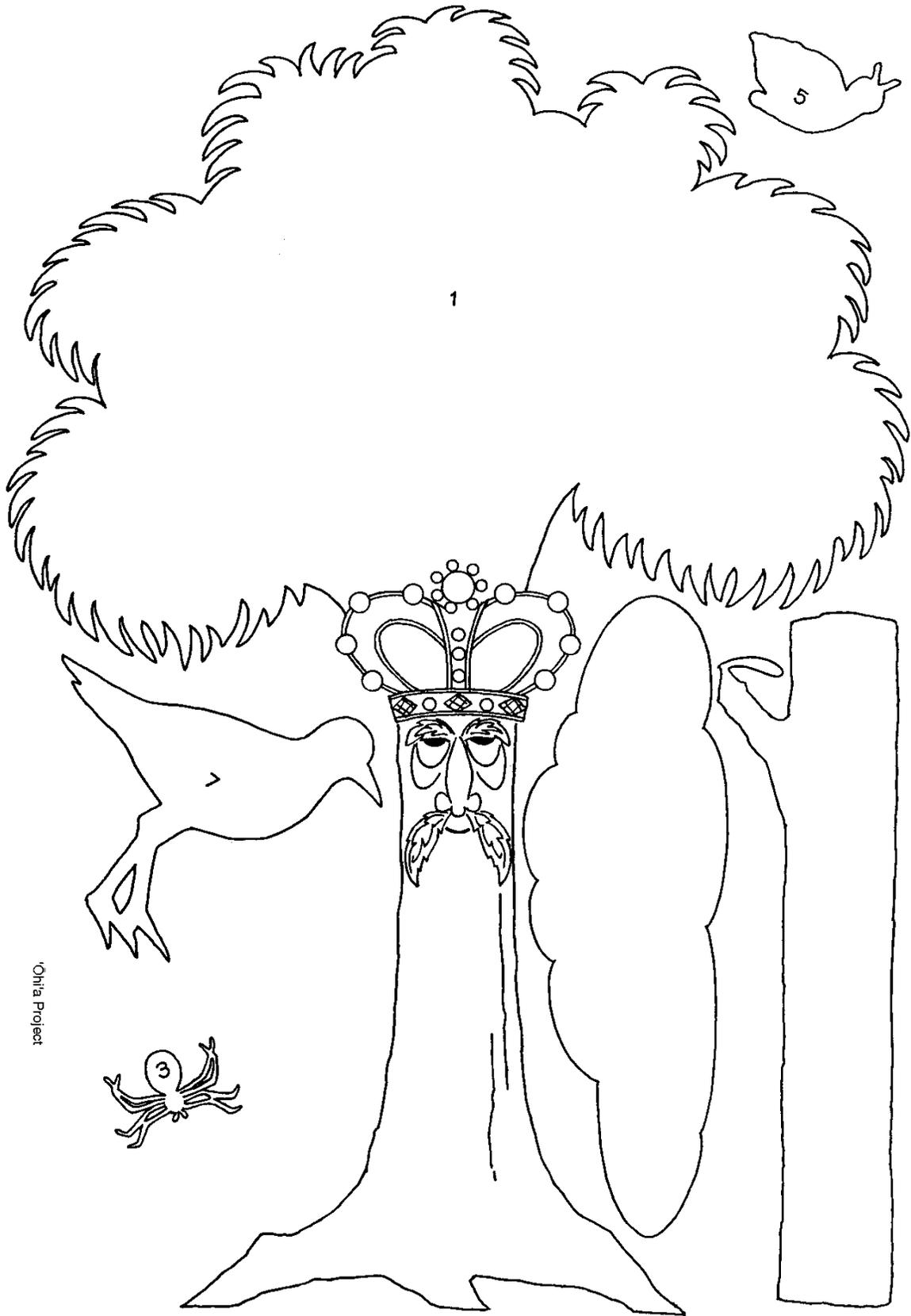
### Extended Activities

- Place a flannel board and the story characters in a learning center for children to use as they study the Hawaiian environment. Encourage students to create their own stories and share them with their classmates.
- Have the children cut out the characters on their activity sheets and glue them onto large sheets of paper to create a story.
- Adapt the “Red Rover” game. Have children hold hands and stand in two lines facing one another, about 5 m (15 ft) apart. Teams take turns calling for an animal (for example, “Red Rover, Red Rover, send *kōlea* over”). The team then decides which student will represent the animal that has to move as if swimming, floating or flying and break through the hands of the opposite team. If the animal cannot break through the line, s/he becomes part of that team.
- Have students classify the animals in the story according to orders within the animal kingdom. For example: fish, mollusks, birds, reptiles, and insects and relatives (arthropods). Add monk seals or bats to represent mammals that successfully colonized Hawai‘i.

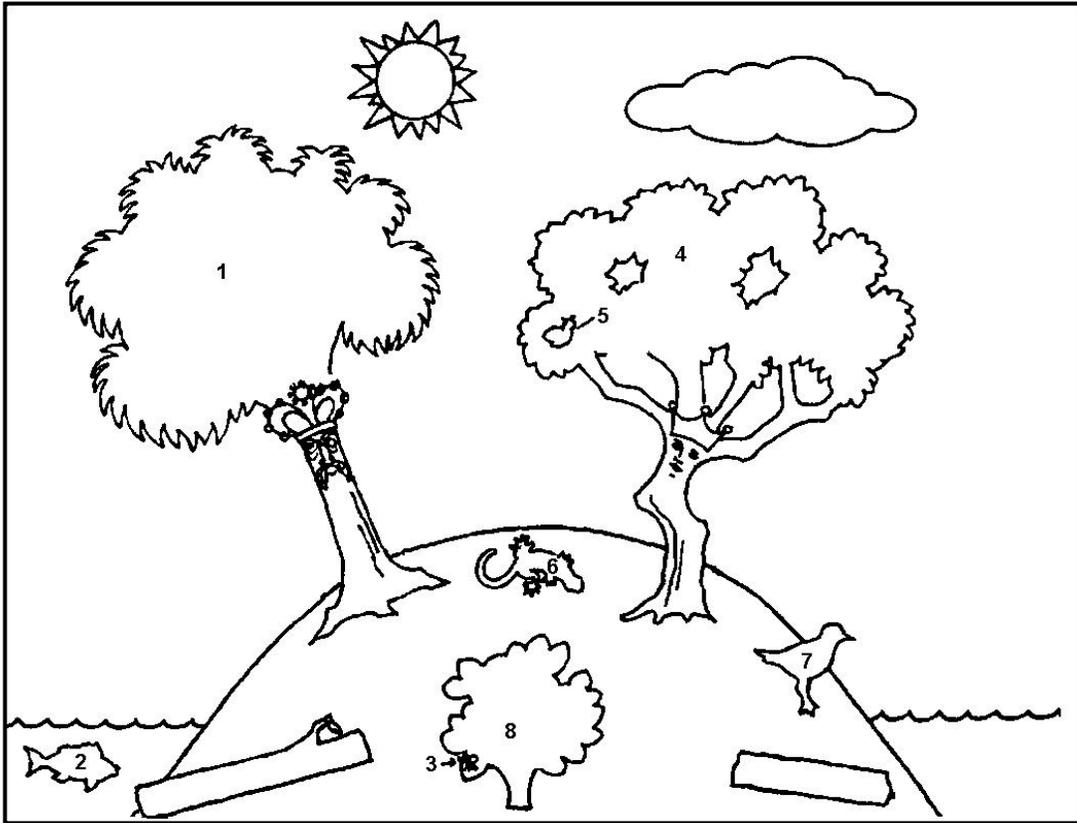








## Forest Friends



As you read the story, place the props and characters onto the bulletin or flannel board when their names appear in boldface type. Refer to the diagram above for suggested placement of the stencils. When a storm occurs, place the storm cloud in the sky. After each storm, replace the cloud with the sun.

### Props

Island  
Sea (waves)  
Koa log  
Storm cloud  
Sun  
Second log

### Characters

1. King Koa  
2. Fish  
3. Spider  
4. Queen 'Ōhi'a (tree)  
5. Snail  
6. Skink  
7. *Kōlea* (bird)  
8. Shrub (*pū'ahanui*)

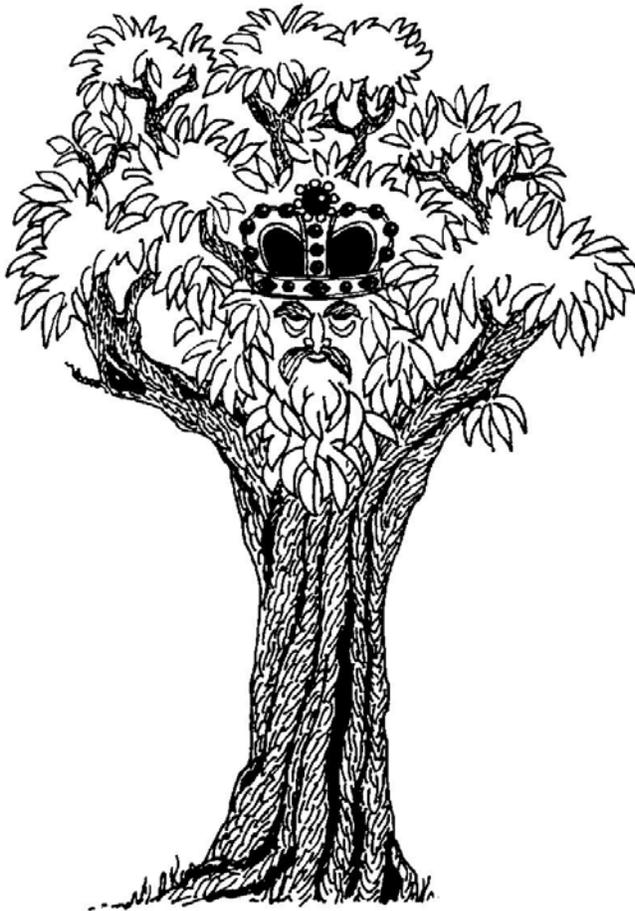
### INTRODUCTION

This is a story that old King Koa tree tells. It is a story about how some of the plants and animals came to an **island** out in the middle of the sea. King Koa wants us to help him tell the story. So, whenever he says, "ALOHA, FOREST FRIEND. HOW DID YOU REACH THE ISLAND?" we will take turns and have each group say one line of this poem:

DID YOU FLY?  
DID YOU SWIM?  
DID YOU RIDE ON THE WIND?  
DID THE WAVES BRING YOU IN?

(flap hands)  
(move arms in swimming strokes)  
(move arms from side to side)  
(move hands in wave motion)

A long time ago I landed on an island in the middle of the sea. My mother (**koa log**) had floated over the waves. One of her branches held seeds in a protective pod above the water. When she reached the island, big storm waves pushed her trunk way up onto the land, and my seed fell to the ground. I grew into a big **koa tree**. I had strong branches, but no insects or birds came to keep me company. And no plants came to grow in my shade; I was all alone.



### STORM 1

One day, a big storm (**cloud**) blew in over the ocean. The waves crashed on the shore! The wind howled and tossed my branches. The rain lasted all day and night. When the **sun** rose the next day, I had a big surprise.

I felt a little tickle on my leaves. There was a tiny **spider** in my branches. He looked like he was smiling! I said, “ALOHA, FOREST FRIEND. HOW DID YOU REACH THE ISLAND?” (REPEAT POEM) What do you think the spider said? (It came on a strand of silk that blew in the wind.) I was happy to have some company, especially such a smiley friend.

The happy-face spider and I also noticed some tiny seeds on the ground. Happy-face showed me how to juggle the seeds. He told jokes too and we laughed together. We watched one of the seeds grow into a beautiful ‘**ōhi‘a tree** with red flowers. I said, “ALOHA, FOREST FRIEND. HOW DID YOU REACH THE ISLAND?” (REPEAT

POEM) How do you think the tree reached the island? (Its tiny seed blew on the wind.)

‘**Ōhi‘a** was strong and wise. I asked her to be our queen. Happily, she agreed. When the rains came she grew more beautiful than ever with red flowers covering her crown. But the happy-face spider didn’t like the rain. He tried to stay dry under my leaves, but they were too long and thin. He tried ‘**ōhi‘a** leaves but they were no better. They were too small. Happy-face couldn’t stay dry. He stopped telling jokes and I rarely saw him juggle. I knew the rainy season would be with us for a while, but we didn’t know how to help our little forest friend!

## STORM 2

When the next big storm blew in, (**cloud**) I tried to shelter happy-face from the rain. He clung to my leaves. But as the wind blew and the rain poured down, he got wet and cold. When the **sun** came out, I saw a shiny **fish** in the sea and a new **log** on the beach. A tiny **snail** made its way off the log and came to visit the forest. I said, “ALOHA, FOREST FRIENDS. HOW DID YOU REACH THE ISLAND?” (REPEAT POEM) What do you think the fish and the snail said? (The fish swam; the snail floated over the waves on the log.) The snail’s hard shell had protected her from the salty sea. It had been a long journey. The waves had tossed her log raft all about and she was tired. She fell asleep on Queen ‘Ōhi‘a. When she woke up she began to clean the Queen’s leaves. We were glad to have such a helpful new forest friend.

## STORM 3

I wondered if anyone else had come in on that log. Happy-face wondered too and off he went to have a look. While he was gone, the rain cloud came back. It started to pour. How would happy-face stay dry? When night came he had still not returned. We worried and wondered if he would ever come back. What if the big waves washed him out to sea?

The next day was bright and sunny (sun). A slinky new forest friend (skink) came to visit. We heard him crackle over the leaves. He was a fast mover and he almost slipped tight by me, but I stopped him and said, “ALOHA, FOREST FRIEND. HOW DID YOU REACH THE ISLAND?” (REPEAT POEM) What do you think the skink said? The skink told us that it wasn’t the waves, wind or wings that carried him to our island but that he had come on a canoe. Then off he went stinking through the forest.

Finally happy-face returned. He was so tired. He had gotten soaked in the rain and he wanted a dry home! But he had some exciting news! He had met a new friend near the beach. She had long legs and a long beak. I looked out and saw a golden bird (*kōlea*) cleaning its feathers. I called out, “ALOHA, FOREST FRIEND. HOW DID YOU REACH THE ISLAND?” (REPEAT POEM) What do you think *kōlea* said? (It flew.)

Soon after the *kōlea* arrived, we noticed a new plant (*pū‘ahanui*) with big leaves and large red berries growing near Queen ‘Ōhi‘a. Inside the red berries were many seeds. I greeted the plant, “ALOHA, FOREST FRIEND. HOW DID YOU REACH THE ISLAND?” (REPEAT POEM) How do you think the new plant got to the island? (Its berries may have been carried inside the *kōlea*.)

The happy-face spider went to visit the plant and was overjoyed to find such wonderful big leaves. They made a perfect roof to keep him dry. When the rainy season came, he looked as happy as a happy-face spider could be! I was happy too. Queen ‘Ōhi‘a and I knew we’d never be alone again. Over the waves and on the wind new friends would come to our island.

**THE END**