

Survival Of The Fittest

Grade 3



Ama'u Fern

Many plants and animals found in the park came to Hawai'i on their own. Each one traveled more than 2,000 miles over the vast Pacific Ocean. A new species came only once every 50 to 70,000 years. Can you think of a way plants and animals came to Hawai'i without the help of people?



Kōlea (Golden Plover) in Hawai'i plumage

Kōlea in preparation for Alaska



Hawaiian Honeycreepers
Paintings by H. Douglas Pratt, Jr.

Photo Analysis

There were few enemies (predators). These species began to change.
 1) How do you think they changed? Lost smell, color, thorns. Birds developed many different bills and the Nēnē lost its webbed feet.
 2) Why did this happen? How did native plants and animals come to Hawai‘i? Wind, wave, wings

Setting the Stage

Activity 1: Where Did I Come From?

- **Complete Arrival Chart.** Students think about how each plant or animal arrived in Hawai‘i.
- Place photo next to arrival method and tell why they think it arrived in that way.

Visual Evidence

Native plants and animals found in the park are becoming endangered because of the rapid introduction of alien species that take over the rain forest.

- 1) ID and name three native plants that came to Hawai‘i by themselves. Ōhi‘a lehua, ‘ohelo, hapu‘u
- 2) What happened to these plants after they arrived? Evolved, adapted, lost smell, thorns, etc.
- 3) Why are native plants and animals losing their growing space and homes?
Introduction of alien species (newcomers), land cleared for ranch, farm, homes, wood, etc.
- 4) What are some examples of newcomers? Ginger, faya, pig, cat, mongoose, rat, mosquito

Activity 2 Forest Walk-Can You Find Me, Can You Help Me?

Forest: Home to forest plants and animals. Respect, quite (forest voice), observe, listen while walking, stay on trail.

- Divide students into three groups. Observe different levels of the forest.
 - 1) Group one observes the forest floor.
 - 2) Group two observes the under story of the forest.
 - 3) Group three observes the tree canopy.

Scientific Evidence

Clues for students: Look at (floor, under story or canopy), Allow students to discover and report their findings. Birds-Honeycreepers have adapted and can be found at different levels of the forest, from the floor, under story and canopy. Find a bird. What color is it? Where do you see it? Listen, look for movements, follow their song or movements. What do you see at different levels of the forest? Quietly count the number of different sounds you hear. Can you guess what sounds you hear? Can you mimic the bird calls? How many different birds are singing?

Analyzing What We See

- Do nature and people change the forest habitat? Yes How? Introducing new plants and animals, building, parking lots, trails, eruptions, wind, rain, storms. Pig ravage forest, mosquitoes transmit diseases, etc.
- Do alien plants and animals threaten natives? How? Yes, They out grow (crowd, shade), eat food and the plant or animal, take over or change home (habitat), etc.

Complete worksheet

Lava Tube: The same activity in the forest can be used in the lava tube. Make careful observations inside the tube. What might you find in Nāhuku today? What might have been there before it was a park? Insects? How did Hawaiians use it? Shelter, water collection, burial
Describe what you found and how you think it got there. Plants near lights, insects or bugs-searching for food/shelter. Why is it important to protect the lava tube?

Questions for lava tube: How did Polynesians use lava tubes like Nāhuku?

How or why would plants and animals move from one place to another (rain forest to lava tube)? Over-crowding, loss of food, loss of habitat, etc.

What would these plants or animals need to survive? Shelter, food, water

What happens when they move to a new place? change(adapt)over time (senses, color, blind)

Why? Don't need it anymore – Use It Or Lose It. (Evolve).

What would they eat? Depends on what is available – anything that won't eat them first

Walk deep into the tube and have the students stand quietly and close their eyes to listen to the sounds of the tube?

Quietly count the sounds you hear then discuss them with each group.

Reach out and touch the tubes floor, side and upper areas softly. (Lava tube ecosystem fragile-Nāhuku already disturbed. We would never touch anything in a wild cave.)

Do you see signs of life? How many can you find.

Activity 3 – Optional If time permits, write or draw your observations on the back of your work sheet.

Examples: aerial roots, plants (where are they?), cracks, shelves (bathtub ring),

Closing:

What have you learned about native plants and animals?

Plants and animals native to Hawai'i came on their own and adapted and evolved into unique Hawaiian species; some found nowhere else in the world.

What can you do to help them from becoming endangered or extinct?

Be good stewards of the land,

Leave only footprints-take only pictures,

Mālama 'āina-respect and care for the land,













Under each native plant or animal picture, write the name of the threat from the words listed below.
Some will have more than one threat and some threats may apply to more than one picture.

Pig, cat, rat, mosquito, Myrica faya (fire tree), Kahili ginger, mongoose, human.