SURVIVAL OF THE FITTEST

ʻOhi aku ka pō a koe kēia

Grade 3 Meet at Kīlauea Iki Overlook 9:30-11:30a.m.

ʻIʻiwi

Many plants and animals found in the park came to Hawaiʻi 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 Hawaiʻi without the help of people?

Kōlea (Golden Plover) in Hawaiʻi plumage

Kōlea in preparation for Alaska

Photo Analysis: Compare and contrast the kōlea in the two photos. Why do they look so different?

Setting the Stage:

How did native plants and animals come to Hawaiʻi? (wind, wave, wings)

Do you think there were many predators in Hawaiʻi when plants and animals first arrived? Why or why not?

There were few enemies (predators), therefore these species began to change.

1) **How do you think they changed?**
2) (Lost smell, color, thorns. Birds developed many different bills and the Nēnē lost its webbed feet. **Why?**
2) **What's different about each of the birds in this photo and why?**

Hawaiian Honeycreepers

Painting by H. Douglas Pratt, Jr.

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, ‘ōhelo, hāpu‘u)

2)What happened to these plants after they arrived? Why did this happen?

Evolved, adapted, lost smell, thorns, etc.

3) Why are native plants and animals losing their growing space and homes?

I*ntroduction 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

Pua‘a (Hawaiian boar)

Mongoose

Mosquito on ‘Apapane

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, and 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?

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?

Describe what you see 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?

(shelter, water collection, burials)

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?

Moʻolelo:

Pelehonuamea (Pele) and Kamapuaʻa

The ranger guiding your tour will tell the story of Pelehonuamea and Kamapuaʻa. At this time we will be able to make a cultural connection to this place, based on an age old legend that has been passed down orally from generation to generation. This will help to bridge the gaps between the old and the new, to give further insight to the students as to why places such as Kīlauea are so important.

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. Pigs ravage forest, mosquitoes transmit diseases, etc.)

Do alien plants and animals threaten natives? How?

What can we do:

Can we make a difference in nature? How can we go about doing so?

(yes. We can all start caring for the yards at our own homes etc.)

What are some changes that we can make to ensure the longevity of the precious eco-systems in Hawaiʻi?

(pick up rubbish, recycle, grow a garden, etc.)

What have you learned:

It's time for your feed back.

What are three things you learned on your hike along Kīlauea Iki?

How does what you learned apply to science and culture?

Name two common birds found in this area?

Name three native plants you identified?

How will you use this information to help teach others about our beautiful home?

Go Green!

Ua mau ke ea o ka ʻāina i ka pono

The Life of the Land is Perpetuated in Righteousness

The Climate Change Connection:

Background Information:

Species that worked so hard to survive and adapt to living in Hawaiʻi could have new challenges if global warming continues. Some species of plants and animals might need our help to relocate/migrate to more hospitable areas – at Hawaiʻi Volcanoes National Park, it may be to a higher elevation.

Other considerations for our native forests include threat of mosquitoes migrating to areas that were once too cold for them. We know that some species of native birds are very susceptible to avian malaria which is a disease carried by mosquitoes.

In addition, warmer and/or drier conditions could lead to insect infestations that could destroy trees and plants that have become weakened by drought and heat. In other words, our Hawaiian forests could become endangered or extinct.

To Discuss:

What human actions are causing global warming? How can we all help limit the bad effects of global warming and climate change on our native species? What can you and your family do at home?

Mahalo nui loa for coming out to enjoy our park;

hope to see you again soon!

Photo Credit:

http://www.usgs.gov/solutions/images/bird_mosquito.jpg

http://wildlifeofhawaii.com/images/Mongoose.jpg

http://bowhunthawaii.com/wp-content/uploads/2012/06/Pig1.jpg