Helping Each Other

Next Generation Science Standards:

- K-ESS3-1 Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.
- K-LS1-1 Use observations to describe patterns of what plants and animals (including humans) need to survive.
- 2-LS4-1 Make observations of plants and animals to compare the diversity of life in different habitats.

Hawai'i Content and Performance Standards III:

- SC.K.1.2 Ask questions about the world around them.
- SC.1.3.1 Identify the requirements of plants and animals to survive (e.g., food, air, light, water)
- SC.1.5.1 Identify ways in which the same kinds of plants and the same kinds of animals differ.
- SC.2.3.1 Describe how animals depend on plants and animals.

Description:
The survival of different species depends on two species helping each other. The complex relationships within one habitat can be hurt when one of the species is threatened or one of the species becomes extinct.

Duration: 45 minutes

Objectives: At the end of this lesson, the students will be able to:

- Determine an organism's job in its habitat and describe how they depend on each other.
- Name three species that are only found within Haleakalā National Park.
- Recognize that some plants and animals have specific needs and live in special homes that give them what they need.

Background:
In every environment plants and animals depend on each other for food, water, shelter, and space. The survival of different species depends on the health of ecological systems that may be near or far away. The complex relationships within one habitat can be hurt when one of the species is threatened or one of the species becomes extinct. This lesson ties into the Hawaiian ideas of laulima (working together) and kōkua (help), which are prevalent in the culture. This lesson also connects to prior knowledge of native species. When relating interdependence to a rainforest or local marine habitat, the use of native Hawaiian species is encouraged. For

example, in a rainforest, honeycreepers depend on the native plant species for food and shelter, and the birds assist seed dispersal for plant proliferation.

Vocabulary:
Habitat: A home where a plant or animal finds food, water, shelter and space to survive.
Interdependence: How plants animals depend on one another for survival.
Niche: A species' job.
Species: A plant, animal, or insect.
Symbiotic: An interdependent relationship that benefits both species.

Materials Needed:

Helping Each Other Worksheet (included)

Procedure:

Step 1: Introduction

Ask students to think of some animals that they are familiar with, such as their pets or animals that live outside near their homes.
Ask them to state the things these animals need to survive, such as water, food, a place to make their home, and enough room to run and roam.

Step 2: Discuss Interdependence

Ask students to think more carefully about the animals they have described.
Discuss the following questions with the class:

- What do the animals eat?
- Where do they live?
- Do plants and animals have jobs? Define niche = A species' job. Explain that even plants and animals have a job in their habitats.
- Describe and ask for examples of how animals depend on other plants and animals around them?
- Define symbiotic = Helpful relationship and interaction between different species in a habitat.

Step 3: Complete the Helping Each Other Worksheet

Students will read the worksheet and match the species to its helping or symbiotic partner.

Step 4: Conclusion

- Ask students for other examples of the interdependence of plants and animals.
- What would happen to these animals if their main food source disappeared?
- What would happen to these animals if the main place where they found shelter no longer existed?
- Is there anything that can be done to help ensure the survival of interdependent species?

- How do the ideas of laulima (working together) and kōkua (helping) tie into this lesson?

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An endemic species is a one-of-a-kind creature that only lives in a certain part of the world and nowhere else. Over the generations, endemic plants and animals adapted (changed to fit in) to the special place where they live. For example, the ancestor of birds like the ʻiʻiwi (a Hawaiian honeycreeper) came to Hawaiʻi as the Eurasian rose finch. Through the generations rose finches filled certain niches (jobs) on the Hawaiian islands and adapted to become Hawaiian honeycreepers. Honeycreepers have special beak shapes that help them drink from flowers or eat seeds. Many living things adapted together to form symbiotic (helpful) relationships with each other.
Name one way you and another person help each other?

Draw a line between these endemic species and their symbiotic (helping) partner.

Pūpū kani oe (Tree snail)
I have a bright shell and love to eat fungus off of tree leaves.

ʻIʻiwi (Honeycreeper)
I am a brightly colored bird. I use my long curved beak to drink nectar from flowers.

Nalo meli (Yellow-faced bee)
I drink nectar, and am one of the native pollinating insects that live in the summit area of Haleakalā National Park.

Māmane (Pea)
I have yellow flowers that are shaped like little drinking cups.

ʻĀhinahina (Silversword)
Haleakalā is my one and only home. I flower just once in my life. To reproduce I need a helper to pass the pollen from flower to flower.

Koa (Acacia tree)
I am a type of acacia tree. Small animals with shells are found cleaning my sickle shaped leaves.