



## Invasive Animals

### Concepts

Not all animal species found Hawai'i. Some animals were brought to the islands by other means. There are four distinctions of animals on Hawai'i: native, endemic, introduced, and invasive.

### HCPS III Benchmarks

SC.3.4.1  
SC.3.5.1  
FA.3.3.1  
LA.3.4.1  
LA.3.5.2  
SS.3.1.1

### Duration

2 hours

### Source Material

PRISM

### Vocabulary

Endemic  
Introduced  
Invasive  
Native

## Animals' Arrival in Hawai'i

### Summary

Students are introduced to the ways that animals have made their way to Hawai'i. There are many different ways that animals have arrived in Hawai'i, either with or without the help of humans. Students will have the opportunity to learn about the ways animals arrived in Hawai'i and will investigate the specific ways native animals found Hawai'i. Students will also create stories about native animals and their voyage to Hawai'i.

### Objectives

- Students will be able to define what native, endemic, introduced, and invasive animals are.
- Students will be able to differentiate between native, endemic, introduced, and invasive animals.
- Students will be able to identify ways animals came to Hawai'i with or without human help.
- Students will be able to write about the ways native animals came to Hawai'i.
- Students will be able to incorporate facts about animals to create stories about native Hawaiian animals.

### Materials

#### Activity 1: An Animal Introduction

##### For each student:

Writing utensil

##### For each group of 4 students:

2 sheets of blank paper

#### Activity 2: Native Animal Stories

##### For each student:

1 "Native Animal Story" worksheet

Writing utensils

Coloring utensils

### Making Connections

Students will draw upon personal experience and prior lessons to identify animals around Hawai'i. Prior lessons provide a backbone for recognizing types of animals found in Hawai'i. Students will draw upon stories to develop a fictitious story about a native animal's voyage to the islands. Many students will pick similar animals due to shared experiences with specific animals (i.e., *honu*), but students should be encouraged to choose different animals and learn about more animals.



## Teacher Prep for Activity

### Activity 1:

Have blank paper available for student use.

### Activity 2:

Make copies of “Native Animal Story” worksheet for each student.

## Background

No animals were in Hawai‘i at its inception, when it emerged from an oceanic volcano. Rather, animals have traveled from around the world to arrive in Hawai‘i. There are animals that have arrived here with no help from humans, and are considered **native** animals. Some native animals who have been in Hawai‘i for very long periods of time have evolved and adapted to these unique living conditions in the islands and have become new species, found no where else in the world. These animals are **endemic** to Hawai‘i.

Needless to say, there are animals that have been brought by humans. These animals have the distinction of being **introduced** in the islands. These animals include all four-legged land animals, and most mammals with the exception of the Hawaiian bat. Many introduced animals have come after native and endemic animals created a niche for themselves in the natural environments. Thus, many introduced animals, in an attempt for survival, have devastated natural ecosystem processes and habitats. These animals are deemed **invasive** and are not healthy for Hawai‘i’s natural ecosystems. Humans have introduced all invasive animals, but not all introduced animals are invasive.

There is much discussion as to the role of invasive animals in Hawai‘i, which highlights the importance of this curriculum unit. However, less discussion is focused on whether humans are invasive animals, as they are not native or endemic to Hawai‘i. Biologically speaking, humans are an invasive species, but this may be a relatively scrutinized subject, especially in regards to Native Hawaiians and their role in the environment.

## Vocabulary

**Endemic animal** – an animal found in one region of the world, and nowhere else

**Introduced animal** – an animal brought to an ecosystem with human assistance

**Invasive animal** – an animal that negatively affects an ecosystem to which they were introduced

**Native animal** – an animal that exists in an ecosystem naturally, finding its way to the ecosystem without human assistance

## Procedure

### Activity 1: An Animal Introduction (1 hour)

1. Introduce the activity by reviewing the food chain.
  - a. With this introduction, explain how animals were not created with Hawai‘i, but rather came to Hawai‘i after it was a land volcano.
  - b. Some animals arrived in Hawaii by themselves; some came by people (Polynesian, White, etc.)
  - c. Pose the questions of, “How would the food chain have been different if there were no carnivores?” “How would the food chain have been different if there were no pigs (brought by humans)?”



- d. Students should arrive at the idea that the food chain changes with every addition and deletion of an animal in the ecosystem. This change is not always good or bad, but just different.
  2. In groups of four, students write 10 animals that they are familiar with and see around their communities. After groups finish, reconvene as a class.
    - a. If some groups are finished, have students group animals by food chain levels (Producer, First consumer, Second consumer, Decomposer) as a review of the previous lesson.
- (Elapsed Time Check: 20 minutes)
3. Introduce the vocabulary of this lesson as the four distinctions of animals.
    - a. Native – arrived to Hawai‘i without human assistance.
    - b. Endemic – only found in Hawai‘i and nowhere else on earth. Usually arrived without human help.
    - c. Introduced – human introduction to Hawai‘i.
    - d. Invasive – human introduction to Hawai‘i and the animal negatively affects native and endemic species (animals and plants).
  4. Provide familiar examples of the four types of animals in the lesson.
    - a. Native – Hawaiian monk seal, green sea turtle, etc.
    - b. Endemic – nene goose, Hawaiian honeycreepers, etc.
    - c. Introduced – dogs, mynah birds, etc.
    - d. Invasive – pigs, mongoose, rats, cats, etc.
  5. Have students suggest examples of the four types of animals.
- (Elapsed Time Check: 30 minutes)
6. Break class up into the same groups of 4, and haphazardly disperse the lists of 10 animals back to different groups.
  7. Have groups separate the list into the four categories (Native, Endemic, Introduced, and Invasive).
    - a. Groups may do this on the same piece of paper or different ones.
  8. Discuss the categorical breakdown as a class.
    - a. Most times, groups will notice that most of the animals seen regularly are introduced or invasive.
    - b. Discuss this concept and determine why many native and endemic species are not seen around humans.
    - c. Discuss the questions, “What does this mean to be human?” “Are we native?” “Introduced?” “Invasive?”

### **Activity 2: Native Animal Stories (1 hour)**

1. Review the vocabulary: native, endemic, introduced, and invasive.
2. Introduce the activity, writing a fictional story about how a real Native Hawaiian animal made its way to Hawai‘i by itself.
  - a. The story must include:
    - i. Animal’s name (i.e., nene goose)
    - ii. Character’s name (i.e., Kai)
    - iii. Description of the animal (what it looks like)
    - iv. Where did he or she come from
    - v. How he or she got to Hawai‘i



- vi. Description of the journey taken
  - b. The story must be at least 7 sentences long.
3. Give students the entire class period to work on the story.
4. Guide students, without giving too much help. Students' creativity must show in work.
5. If students have finished writing their story, they may continue by providing a drawing to accompany the story. Color is encouraged.
6. Stories read aloud in following class periods, or may be shared with other classes or schools.

## Assessments

Classroom discussions on four types of animals.

Successful completion of Native Animal story with accompanying drawing.

## Resources

For examples of Native animals of Hawai'i, visit:

<http://www.hawaii.edu/environment/ainakumuwai/html/birds.htm>.

## Extension Activities

If time permits, students may share these stories with one another. Students in the audience can assess the stories and provide constructive criticism to the author/illustrator. This provides a means for students to share their work, as well as for observing students to be held accountable for the information delivered to them. If possible, students can help each other edit work to increase clarity and fluidity of the story before the final project is completed.

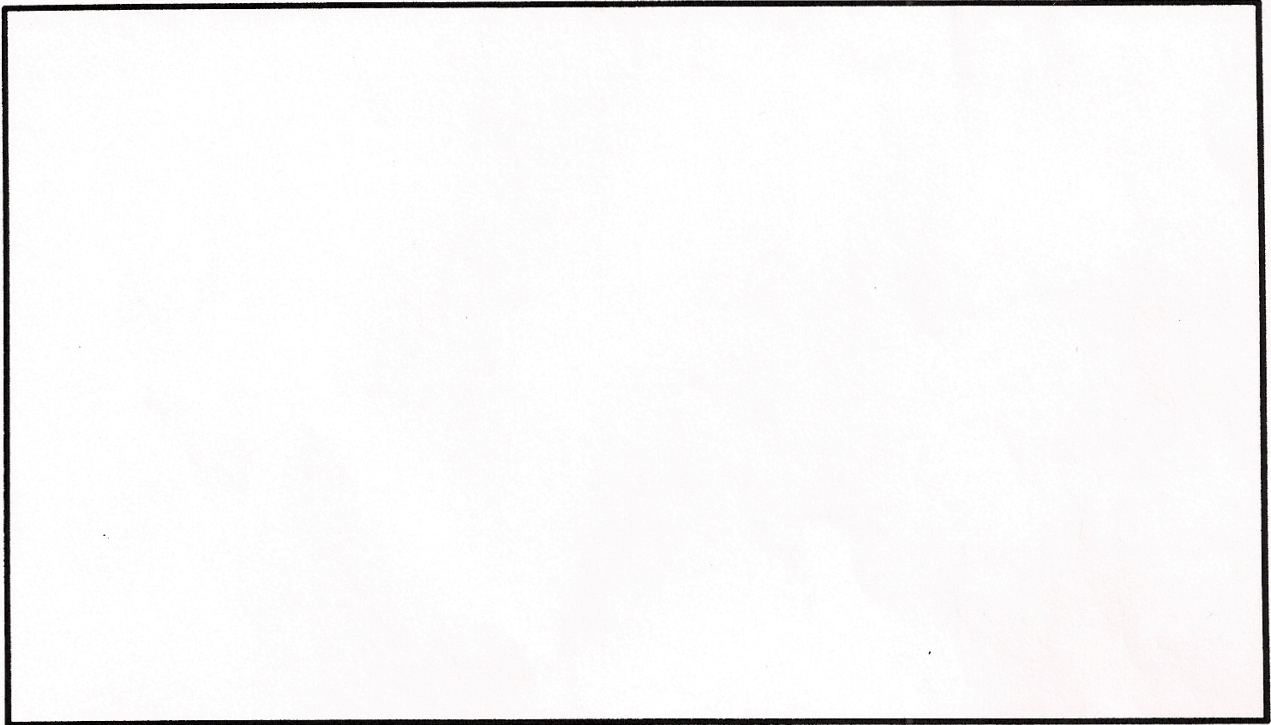
## Culture Connections

To supplement the Native Animal Stories that the students have created, investigation into cultural myths and folklore may liven the idea of writing such stories for a specific audience. Much folklore exists in First Nations communities to describe the beginnings of animals in the cultural conscious and the development of cultural practices. By increasing such awareness, students may find other stories about the animal they chose to write about through *kupuna* stories or an online search.





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