

Full-Lesson #8: Bird Beak Morphology

Overview of Outcomes

After being introduced to the Hawaiian forest bird species, students will be given various tools/utensils and an assortment of objects. The students will then be challenged to find the most appropriate equipment for picking up objects of different sizes and shapes. The goal of this lesson is to demonstrate the specialization of beak forms to accommodate different types of food. This will promote a basic, tactile understanding of the reasons behind different beak morphologies in Hawaiian forest birds.

Materials

Activity Worksheet http://kauaiforestbirds.org/wp-content/uploads/2019/11/Suppl_Lesson8.pdf

Utensils (chopsticks, spoons, forceps, binder clips)

“Food Items” (Pennies, Toothpicks, Marbles are ideal)

Plastic Cups

Timers

Calculators

Activity Directions

- 1) Teachers will begin class with a review of Hawaiian forest bird adaptations, emphasizing the diversity of beak shapes found in Hawaiian honeycreepers. It may be beneficial for teachers to define the term **morphology**, as this will be the focus of the lesson. Teachers will then introduce the activity for the day, and talk about how the students will gain hands-on (beaks-on?) experience in learning about bird beak morphology. Teachers may prompt students to develop hypotheses about which beaks (utensils) will be best suited for certain items. (~15 minute introduction)
- 2) Teachers will pass out the supplies to groups of 3-5 students. Each student will have an opportunity to try out each utensil set (beak type) in picking up each food type (pennies = bugs, toothpicks = worms, marbles = fruit) and drop it in the plastic cup. The students will have 15 seconds per try. Students will then take the average of all group members' attempts. (20-25 minutes)
- 3) Teachers will bring the class together to talk about which “beak types” were best suited for picking up each item. Teachers can close class with a debriefing presentation on the diversity of beak shapes and functions in Hawaiian forest birds. Overall, it is important to communicate the specialization of Hawaiian forest birds for specific food types. Concepts such as **ecological niches** can be addressed here. Teachers may also prompt students to hypothesize what would happen if a bird's food source disappeared (this could be an effective preface for later lessons on species extinctions).