(3<sup>rd</sup>-4<sup>th</sup> Grades)

#### Goals:

To awaken curiosity and hone observation skills and analytical thinking. To introduce/review the concepts of adaptation and camouflage. To learn about the Laguna ecosystem.

### **Description:**

This activity is focused on Birds of the Laguna. It consists of a collection of items including bird nests, feathers, skulls and feet, and a poster of nest-building sites. Students are given questions that relate to the items on the table. The questions encourage students to carefully observe and analyze the objects in front of them, facilitate discussion, and allow them to draw conclusions about the lives of the birds and the Laguna ecosystem.

## Set Up:

Place the poster in the center of the table. All around the table place in groupings: feathers, nests, bird beaks, and bird feet. Mr. Duck is a big asses to this activity.

#### Activity:

Each student receives a Question Card. After reading their questions to themselves, ask students to walk around the table in silence. Instruct them to examine everything on the table and stop at the item that relates to the question on their card. Ask, "Who has card #1?" Have the student read the question aloud and describe what s/he sees on the table and how it relates to the question. Discussion ideas are provided below. There is a prompting sheet for you to refer to while you are conducting the activity. You will not be able to get to all of the discussion items, so be sure to judge your time so that you get to everyone's question (about 2 minutes per student). Remember you can always return to a topic if time allows.

After going through the discussion questions, leave a minute at the end to point out how much we have learned about the birds just by observing.

## Main points:

- Birds nest almost everywhere
- Birds have special **adaptations** that make them well suited for their habitat and activities
- We can learn a lot by observing shapes of feet and beaks—where it lives and what it eats—even if we don't know what the bird is.

#### **Discussion**:

1. WHERE DO BIRDS NEST?

(Poster of photos of different nesting sites).

Ask the student to say where each bird nest on the poster is located (i.e. On the ground, on a cliff, in a tree etc.). Other students may help.

Can anyone think of an environment where birds don't nest? Probably not.

## 2. IN WHICH NEST WOULD A WOODPECKER LIVE?

The name of this bird gives you a hint. (The hole in the log).

What adaptations does a woodpecker have that allows it to make holes in tree trunks? Its sturdy beak; its foot shape (2 toes facing forward, two back) and its spiny tail shafts (creating a tripod with its 2 feet and tail) give it the ability to cling to the trunk. Make comparisons to other feet (3 toes forward and 1 toe back) and tail feathers (stiff spine of woodpeckers and tapered spine of others).

# 3. IF YOU ARE A BIRD THAT HUNTS GOPHERS, WHICH BEAK WOULD YOU WANT FOR TEARING THE MEAT? (Owl or hawk beak).

What do bird beaks tell us about what birds eat and where they live?

(The shape and size) Conical shapes and stout beaks are for cracking seeds— finches; long skinny beaks are for eating insects—warblers; hooked beaks are for tearing meat—hawks, owls; long pointed beaks are for spearing prey (fish, frogs)—herons.

# 4. PICK UP THE FEATHERS YOU WOULD USE TO BUILD A STRONG WING IF YOU WERE A LARGE BIRD (Long primaries).

Which feathers would you use for a small bird? Which feathers are best suited to keep a bird warm? (Short fluffy clumps of breast feathers).

5. WHAT FOOT IS BEST ADAPTED FOR SWIMMING? WHY?

(Webbed foot of duck and goose).

*What can birds' feet tell us about where they live?* Webbed feet are for paddling (ducks, geese); <u>Two toes forward and two facing back</u> are for clinging to tree trunks (woodpeckers); <u>Small feet</u> with 3 toes forward and one back for holding on to branches (perching birds); <u>Long padded toes and long legs</u> are for wading and walking in mud (herons, egrets); <u>Long talons</u> (claws) are for catching and carrying prey (hawks, owls); <u>Long, skinny toes</u> distribute weight out so they are able to walk on floating plant material (rails).

#### 6. WHAT TYPES OF MATERIALS ARE NESTS MADE FROM?

(Based on what they can observe on the table and in the pictures).

*How do birds decide what material to use?* They use material available from the habitat in which they live. And they are driven by genetics to pick certain materials and create certain shapes.

# 7. IF BIRDS USE FEATHERS FOR CAMOFLAUGE, WHY DO SOME BIRDS HAVE BRIGHT FEATHERS?

To attract a mate. Birds are at a greater risk of being preyed upon but also increase their chances of producing offspring.

8. THERE ARE MORE THAN 200 SPECIES OF BIRDS IN THE LAGUNA. CAN YOU GUESS HOW MANY BIRD SPECIES THERE ARE IN THE WORLD? (9000)