



# Wings Over Woodlands and Wetlands



## Pre-Visit Activity: Built to Do the Job Right

Pre-visit activities prepare students for a more meaningful and rewarding visit to Theodore Roosevelt Island. Please complete as many as your schedule allows before bringing your students on their field trip.

### Objectives

- 1) Compare and contrast specific anatomical features of several bird species.
- 2) Recognize the relationship between the anatomy and function of these birds.

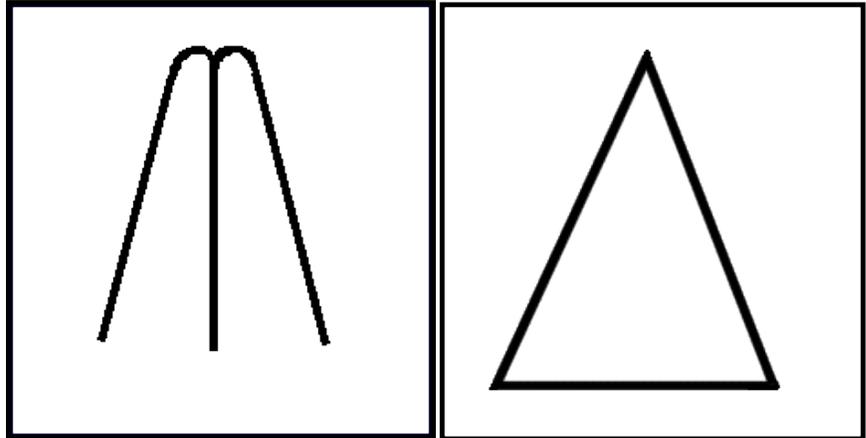
### Materials

- 2 paper sandwich bags
- 2 rubber bands
- 4 bamboo shish-kabob skewers
- Clear tub/large pan of 4-5" deep water
- small paper cup
- small troughs of sand (one per pair of students)
- wire models of bird toes (one per pair of students)
- cardboard/posterboard models of webbed bird toes (one per pair of students)
- small paper drinking cups (one per student)
- tall clear vase or clear pilsner glass
- water or lemonade
- two straws (cut one to 1-2")
- water
- 1/2"x1/2" squares of paper towel
- petroleum jelly
- picture of bird oil gland - if available

## Procedures

1) Blow up a paper sandwich bag, twist it shut with a rubber band at its neck and insert a bamboo skewer (about 4 - 5" long) into each side of the rubber band. Blow up a second paper bag and close it off similarly using a longer bamboo skewer (about 12" long) in each side of the rubber band. Explain to the students that these are bird models -- the skewers represent the legs and toes of the birds and the bags represent torsos of the birds. Fill a clear tub or large pan approximately 5-6" deep with water. Gently holding the tops of the short skewers, "walk" the bird through the water, directing students to observe how much water is disturbed. Repeat this with the long skewers. Ask students which pair of legs would be more appropriate for a wetland bird that needs to get close to fish to catch them for food. Ask the students to explain their answer. Ask which of the six birds in the coloring booklet has legs similar to the long skewers (Great Blue Heron).

2) Distribute a small trough of sand to each pair of students. Give a wire model of bird toes and a cardboard/posterboard model of webbed bird toes to each pair of students; do not explain the models. Direct students to take turns using each of the models to push the "fluid" sand in the trough. Ask which pushes the fluid better. Explain that these are models of different bird toes. Ask which type of toe would be better for a bird that swims in water. Ask which of the six birds in the coloring booklet has toes similar to the webbed model (Mallard).



Wire model (Use two paper clips, "wrap" middle toe.)

Cardboard or posterboard model

3) Place a small, paper drinking cup in a tall clear pilsner glass or a tall clear vase. Pour a small amount of lemonade or water in the cup. Give one student a long straw and one student a short straw (1-2"), explaining that the straws represent different bird beaks. Tell the student with the short straw to help her/himself to the "nectar" (lemonade, water) in the "flower" (pilsner, vase). Next tell the student with the long straw to help her/himself to the nectar in the flower. Ask the students which beak was successful for obtaining flower nectar. Ask which of the six birds in the coloring booklet has a long beak for procuring nectar (Hummingbird). Ask if any of the other birds would be able to drink nectar easily.

4) Distribute a small paper cup filled with water and two 1/2"x1/2" squares of paper towel to each student. Direct the students to drop one of the paper towel squares into the water and to attempt to sink it to the bottom with some quick pushes. Place a dab of petroleum jelly on each student's finger and direct them to smear this over the other paper towel square completely. (Excess jelly can be rubbed on an arm or the hands.) Tell the students to drop this square of paper towel into the water and to attempt to sink it to the bottom with several quick pushes. Ask if it is easy to sink this second square. Ask the students why it is difficult to sink this square. Ask what a wetland bird might do to keep itself more bouyant, to make it float better. If photos are available of birds preening from their oil gland, share these with the students. Ask which of the six birds in the coloring booklet might be especially dutiful about preening with oil (Mallard, Great Blue Heron). Remind students that form follows function in these birds.