Teacher Resource

Time: Two hours

Materials:
For 30 students:

- 8 scissors
- 8 plastic spoons
- 8 tweezers
- 8 large binder clips
- 5-6 boxes of large paper clips
- 200 large rubber bands
- 5-6 boxes of toothpicks
- 2 cups of macaroni
- 30 plastic cups (best if clear)
- 30 Recording Sheets, Graph paper, Grid for recording results

Teaching instructions

First hour

1. Have students select either a spoon, tweezer, binder clip or pair of scissors, and a plastic cup and then sit quietly in a large circle. These represent different beak types.
2. Explain to them that they are now birds. They are very hungry birds. They can only eat with the implement they have selected, and they can only use that implement for eating. The cup represents their stomach. It must remain upright at all times. They must hold their 'beak' in one hand and their 'stomach' in the other. They can only place food in their stomachs with their beaks.
3. Explain to them that certain food items will be placed in the feeding area (middle of the circle but spread out evenly towards the students/birds). When you say "go" they are to collect as much food and place it in their stomachs as possible until you say "stop."
4. Take one of the food items (paper clip beetles) and distribute the clips within the feeding area. Say "go" and allow birds to feed for 1–2 minutes or until all the food is gone.
5. Once you have said "stop" have students empty their stomachs and count the contents. Hand each a Recording Sheet to fill in. Have them return all food items.
6. Repeat this activity using each of the other food items (toothpick twigs, rubber band worms, macaroni munchies). By the end of the activity, each of the students should have completed their row for the beak type and filled in the total amount of food.
7. Pause for a class discussion:
    a) What did you notice about your feeding abilities?
    b) Did everyone with your type of beak have the same success rate with the same foods? Why or why not?
    c) What did you notice about your behaviour and the behaviour of others?
8. Examine the data: tally up the class totals for each of the beak types in a grid on the board. Have the students create bar graphs that represent the class total for each of the beak and food types. This can be started in class and continued for homework.

Second hour

9. When all of the graphs have been completed, have students pick up their beaks and stomachs once again and return to their circle. Explain that obviously most habitats have more than one kind of food available. Ask: 'What will your strategy be if all of the food types are available?'
10. Spread out all of the materials into the feeding circle. Allow about 4 minutes for feeding. Gather the data and have students help to sort out the food items once again for clean up.
11. Again continue with the class discussion. 'What were your strategies? How was this different from the previous eating experiences?'
12. Assess student understanding by posing this question: 'What would happen if all the bird types we have been working with flew to an island where no birds had been before and the only food type available was macaroni munchies. Which bird beak type would be not likely to be successful?' Explain your answer.

Optional extensions:

Give a food value for each of the food types. Would this change your feeding strategies? How much more of one type of food would you have to eat to equal only one of something else, etc. What would happen if there was a change in the environmental conditions (drought, etc) causing the loss of one of the food items. What would happen to the bird populations?