

Xplor

Educator Guide

Educational activities for the **August/September 2012** issue of *Xplor*



It's All in the Touch

Can you imagine your hands being 10 times more sensitive than they are right now? You could probably tell if your birthday cake had butter cream or whipped frosting just by feel! **“Furry Field Trip” (Page 11)** reveals the astonishing fact that a raccoon’s paw has 10 times more nerve endings than a human’s hand. This activity lets your students experience a temporary reduction in their hands’ sensitivity and gives them practice using the scientific method.

Materials

- Science notebooks and pencils
- Five welders gloves, mittens or bubble wrap
- 10 paper grocery bags
- 10 objects small enough to fit in the bags

Teacher Preparation

1. Select familiar objects that students can handle safely, for example unsharpened pencils, feathers, golf balls, spoons, etc. Do not let students see the objects.



Raccoons

2. Place one object in each bag, number the bags from 1–10, and place them in the schoolyard 20 feet apart, if possible. Bags should be elevated so students cannot look down into them.
3. Read the entire procedure and explain it to the students. Have each student record in his or her notebook a hypothesis about which group will correctly identify more of the objects.

Procedure

1. Divide the students into three groups. Group 1 will feel the objects in all 10 bags while wearing gloves, mittens or bubble wrap. Group 2 will feel the objects in all 10 bags without gloves. Group 3 will feel the objects in five bags while wearing gloves and five bags without gloves.
2. Have students work in pairs. One student will be a feeler and the other a recorder. The recorders will prepare a chart in their notebooks. The top of the page should indicate the group number and the names of the feeler and the recorder. The left column should be labeled “Bag Number” and the right column should be labeled “Object.” Rows in the left column should be labeled 1–10.
3. Feelers in each group should reach into the bags without looking, feel the object, and tell the recorder what to write in the “Object” column. Talking should be at a whisper so other students don’t hear.
4. After the recorders in all groups have completed their charts, reveal the objects in each bag. Recorders should mark which objects were correctly identified.
5. Compare the results with the students’ hypotheses. Were the hypotheses correct? Why or why not?



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Options

- Before revealing the objects, have students switch roles and repeat the experiment. Now the feelers are recorders. Are the results of the first round the same as the second?
- Ask students how they might determine if some objects are more consistently identified than others, using the data they have collected. If some objects are more consistently identified, discuss possible reasons for this.
- Ask students how the results might be different if feelers wore different types of gloves or if all feelers felt with their non-dominant hand. Discuss ways these variables might affect the results.

It was a Dark and Stormy Night

“Migration Marathon” (Page 16) invites students to play a game while learning about the amazing migration of pectoral sandpipers. With each move in the game, students learn how sandpipers must dodge predators, dangerous weather and destroyed habitats—all while attempting to find enough food to fuel their 7,000-mile one-way flight! In this activity, students learn details about sandpipers and write a first-person (or first-bird) account of their migration marathon.

Materials

- Science notebooks and pencils
- Information sources about pectoral sandpipers

Procedure

1. Have students conduct research on the life history and migration of pectoral sandpipers.

2. Students may use their science notebooks to record questions and answers about pectoral sandpipers and to draft their text.
3. Instruct students to write a narrative from the sandpiper’s point of view. The text could be in diary, journal or letter form and should include details about migrating like those found in the “Migration Marathon” game. The text could be about different sections of the journey or may be about one particularly eventful stopover.

Options

- Set up optional activity 3.b: “Bird Migration—Human Style” on Page 91 of the *Nature Unleashed* teacher guide to have your students follow a “migration route” through the schoolyard and learn some of the basic needs of migratory birds.
- Identify stopover spots commonly used by pectoral sandpipers in Missouri and see if you can arrange for a field experience to take your students to observe, sketch, photograph, or journal about them.
- Instruct students to focus their text on their migration journey or stopover adventures in Missouri.

