Practicing Protocols

Objective:
Students will become familiar with the specific data entry forms for the monitoring activity you have chosen by practicing in the classroom.

Concept:
By becoming familiar with the data forms used on the beach to collect data in the field, students will be able to maximize their time in the field and will collect better quality data.

Materials:
◎ Copies of the relevant data sheets
◎ Large photos of the beach
◎ Quadrat
◎ Stopwatch

Preparation:

For this lesson, you'll need to think about the monitoring activities you want your class to participate in. Make copies of the data sheets for the monitoring project(s).

Introduction:

Explain to your students that you will be monitoring certain species during your field trip to the intertidal zone.

This lesson is a chance to practice with the real data sheets that will be used during your field trip. Being familiar with the data sheets and the information that is to be collected,will improve their experience at the beach and make the data collected more useful.

Activities & Procedures:
Choose one of the following activities to do with your class based on which intertidal monitoring field activities you have chosen to do with your class.

Coastwalk Scavenger Hunt

Divide the class into pairs.

Provide each pair with the Coastwalk Data Sheet and a large photo of the beach.

Do a scavenger hunt to find as many items on your Coastwalk data sheet as possible.

When you have completed your organism scavenger hunt go outside (or to the lunch room) and look for signs of human impact in your schoolyard and collect data on trash found.

Come back together as a class and discuss your findings and answer any questions that came up while practicing the Coastwalk protocols.

Playground Protocols - Timed Counts

Divide your class into groups of 4.

Assign each group an "animal" to count. Your "animals" can be anything that is found in some quantity on your playground. For example, you can count trash, certain color rocks, or pre-planted items such as cones, balls, and popsicle sticks.

Give the groups their data sheets and use a whistle to signal the start time. You may want to modify the count time to be only 5 minutes if your area is small or there are not very many of the items you are counting.

Have students count their "animals" for the designated time and, when signaled, stop counting and regroup to go over their findings.

Lead a discussion about what assumptions can be made about playground use based on their findings.

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Go over any problems or situations that may have come up such as picking up the item and moving it or keeping it, more than one person counting the same item, how to spread out and cover the most ground as a group, etc.

Switch items to count and do the activity again if time permits.

Photo Quadrat Practice

Using enlarged photos of a section of beach and your quadrat data sheets, have students work in groups of 4 to practice counting organisms in the quadrat and recording data.

Have students practice looking for the area where their organism seems most dense and counting and randomly tossing their quadrat and counting organisms.

Discuss the protocols for counting organisms that are only part-way in the quadrat.

Tally your findings and try to identify your organisms.

Practice on various photographs - or beach sections - if there is time.

Wrap-up:

Discuss the protocol(s) used as a class. If you will be using more than one protocol, compare and contrast the different ways of counting organisms.

Talk about ways the counts can be skewed. What do they need to do to ensure the most accurate count possible?

Be sure to provide time for students to ask questions about the protocols.

Extensions & Lesson Connections:

This lesson is intended to follow either "Sampling for the 'e' Organism" or "Counting Beads and Bobbles" and as an introduction to protocols for the intertidal monitoring projects.

The Alaska Seas & Rivers Curriculum has a great sampling lesson you can do as an extension that explores how researchers direct remote operated vehicles to collect data in undersea canyons (http://seagrant.uaf.edu/marine-ed/curriculum/grade-6/investigation-2.html?task=view).

Evaluation:

Assess data sheets for completeness and accurate computation. Evaluate student participation and cooperation during group work and contributions during class discussions.