Biodiversity Survey – Bird Counts

Essential Question(s):
How diverse is my school site?
What are transect sampling, point sampling and feeder station sampling?

Background Information:
In this survey students will be counting bird species present on the school site. There are various sampling methods from which to choose. You may wish to divide the students into groups to gather data or have them work as a class. Birds can be counted using various sampling techniques: sampling along a transect, point sampling, and feeder station sampling are all options. These techniques are explained below.

Getting Ready:
Determine which type of bird count sampling is best for your site and prepare as needed by mark boundaries or setting out feeders. Decide whether students will work as a class or in smaller groups. Decide whether you want the students to ID the birds or just to count the different types.

Sampling along a transect: In this method students walk a transect across an area and count birds along the transect. Scientists will often mark all birds that they hear while walking and then measure from the transect to the area from which the bird called. Students may wish to do what is called belt sampling. In this method they count all of the birds that they hear or see within a stated distance from the transect. A good distance may be 50 ft. This can be marked with flagging (the distance should be the same each year). The transect method will work well for large grassy areas.

Point sampling: In this method students walk to a point, stand there and count all of the birds they see or hear within a radius of a certain distance from them (i.e. 50 feet). This works well when sampling smaller areas where there is not room to walk a transect. In an open area you may wish to mark the outside of the circle so that students can determine which birds to count. (Some calls, such as that of a Screech Owl, will bring other birds into a site. A tape with an Owl call can be used to try and attract birds.)

Feeder station sampling: By placing feeders at different areas on the school site students are guaranteed to see birds and they are more likely to be able to observe them up close. To perform a count at a feeding station, the feeders should be placed out a week ahead of time so that the birds have a chance to find them. You should provide a number of different food types to attract different birds (i.e. mixed bird seed, thistle seed, suet, mealworms, dried fruit, etc.). This method will not be an accurate method for counting all of the birds as many types of bird will not come to a feeder. However, this method can be useful for collecting baseline data if repeated each year.

Procedure:
1. Ask the students to think about all of the plants and animals on the school site. What is biodiversity? Explain to the students that they will be studying the Biodiversity Department and monitoring the biodiversity of the school site. In order to compare data from year to year, students must collect the same information each year. If it is the first year, the students will be collecting “baseline data”. Scientists routinely collect baseline data when they begin a scientific investigation.

2. Students can record any “I wonder” questions that they have as they are doing the baseline data check. Students should carry an extra piece of paper or a notepad where they can record questions that they come up with while on the walk or during data collection.

3. Explain the sampling method to students.

4. Students should sample the birds one at a time and while being very quiet. Students should record the time of day and the weather conditions. They should also record the number of different types of birds that they see, identifying them if possible. While sampling they should also count the number of different songs they hear (bird song tapes can be used in advance so that students are used to hearing different songs.)

5. The sampling technique and the average number of birds seen and heard at each site can be recorded on the Biodiversity Department Map.

Discussion/Assessment:
Review “I wonder” questions and formulate new ones to be considered by students.
Would the type/number of birds be different at different times of the year?
Do we have a great biodiversity of bird types?
What can we do to improve the bird diversity?
# Bird Counts Worksheet

Date of sampling: _____________________  
Time of day: _______________

Weather conditions: ________________________________

Sampling method used: ______________________________

<table>
<thead>
<tr>
<th></th>
<th>Number of birds types</th>
<th>Number of different songs heard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site 5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

List any birds that were seen or heard:

-------------------------------------------------------------------------------------------------------------------------------------