LESSON: Celebrate Urban Birds   GRADE: 2

OBJECTIVES:

Mathematics
Measurement & Data-
Represent & Interpret Data
- **2.MD.D.10** Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.

Science
Biological Evolution: Unity and Diversity
- **2-LS4-1** Make observations of plants and animals to compare the diversity of life in different habitats.

MATERIALS & RESOURCES:

- Bird Guide for *"Celebrate Urban Birds!"* - http://www.birds.cornell.edu/celebration/resources-for-celebrating
- Focal Species Tally Sheet- http://www.birds.cornell.edu/celebration/resources-for-celebrating/CUBs%20Focal%20Species%20Tally%20Sheet-REV.pdf
- Cornell Lab of Ornithology's Macaulay Library-
- http://macaulaylibrary.org/
- Cornell Online Data Bank - http://ebird.org/content/ebird/about/ebird-quick-start-guide

PRESENTATION:

Show the Cornell Lab of Ornithology Web site, and explain how the organization interprets and conserves biological diversity through research, education, and citizen science focused on birds. Many of the birds, mammals, and animated character sounds heard in movies and TV shows come from the Cornell Lab of Ornithology's Macaulay Library. Explain the class is going to help the lab learn about birds by learning 15 focal species, counting, cataloguing and reporting data. Have students visualize *half a basketball court*. Each student will choose a space that size, watch and listen there for ten minutes, then enter the data from their tally sheets into the online data bank.

DIRECTIONS:

Mathematics- Other Study

1. Have your students study the bird guide and take the Bird Quiz (http://www.birds.cornell.edu/celebration/take---the---quiz/). They can take it as many times as they want, learning a little more each time. Once they get all ten questions correct, they can download a certificate.
2. Work with your class to decide on an area where they can do a 10---minute Bird Tally. The class will need to spread out so that each student can cover an area about the size of a basketball court. Any of these places will work fine for your class' bird counting activity— a park of any size, the school yard, tree-lined streets, community gardens, yards.
3. Once your class has decided where to conduct its bird count, print off a Focal Bird Tally Sheet for each student. Make sure your students bring along a pencil or pen.
4. Take the group to the location and spread out. Watch and listen there for TEN minutes only. Once you return to the classroom, have each student enter the data they collected at the online data bank.
5. As a class, create graphs showing four categories based on the birds they observed. Example categories:
   - Main color of bird- brown, black, grey, or other
   - Sizes of birds – small, medium, large, extra-large
   - Location at time of observation- ground, sky, bush, or tree
6. Have children create and solve math problems, with your help, based on the data in the graph.

Science- Self Study

1. Using the Cornell eBird website-
   http://ebird.org/ebird/eBirdReports?cmd=Start
   Encourage students to use the site to research several bird species. The Range & Point Map is a good place to begin.
2. Have students experiment by searching for different birds and locations which are of interest to them. The satellite zoom tool will help the students determine habitat and compare diversity.

TIME: **90 min**

PROCESSING THROUGH THE SIX PILLARS:

WHAT
• What kinds of rubbish did you find?
• What kinds of rubbish did you find that was most likely generated from students of this school?
• What kinds of rubbish did you find that was most likely generated from a visitor to this school?

SO WHAT
• How seeing the rubbish on the playground make you feel about your school?
• Who is responsible to pick up trash, even if they didn't put it there?

NOW WHAT
• Do we have a choice to be a part of the rubbish problem or a part of the rubbish solution?
• What can we do as a school community to be a part of the rubbish solution?