INTRODUCTION

A. COMPLETE THE FIRST SURVEY

We’d like to learn more about what people think about birds before they begin to participate in Urban Bird Studies. Fill in one or more of the sections of the First Survey. Later, fill out the back side to see if you have changed your thoughts about urban birds. Mail your surveys and we may publish your art, writings, comments, and other work. Two surveys are available—choose the one you prefer to use.

Suggested activity: Talk with your group about any questions you have about birds. Write the questions on a large piece of paper and post them to look at later.

B. BEGIN YOUR JOURNAL

You may want to keep a journal while you are watching and learning about birds. Print a journal cover from the web site and follow the directions for making the journal or purchase a blank book from a store. Journals are a personal record of what you observe or think about by making lists, writing, or drawing. A journal becomes a record to help you remember your observations and ideas.

Suggested activity: Talk about what you can record in your journals, such as drawings, observations, questions, and creative writing.

LEARN ABOUT BIRDS

A. LOOK AT THE BIRD GUIDE ON THE WEB SITE

Try to learn which birds in the guide live in your city.

Suggested activity: Read a cool fact about a bird or group of birds. Or, write some cool facts in your journal. Send us your favorite cool fact that we haven’t already included on our web site.

B. PRINT A LIST OF BIRDS IN YOUR REGION

You also can use printed lists from nearby Audubon chapters, nature centers, or bird clubs. Choose some city birds to look up in a field guide (bird book) to practice using the guide. Make a list of your favorite birds in your journal.

Suggested activity: “Binocular Races.” Hang some drawings or photos of your local city birds along a sidewalk or indoors. Use binoculars and a field guide to identify the paper birds.

C. WALK AROUND YOUR NEIGHBORHOOD TO LOOK FOR DIFFERENT BIRD HABITATS

Anyplace where you see a bird is a habitat. In your journal, write the locations where you see birds and note what they are doing, such as eating, hanging out, or chasing each other. You also may want to write a description of where the birds might find food, water, or shelter in this habitat.

Suggested activity: Visit a local art or history museum to find where birds are mentioned. Write these examples in your journal.

D. INVESTIGATE HOW BIRDS ARE PORTRAYED IN ART, LITERATURE, AND HISTORY

Find stories about birds or other city animals at your local library or on the Internet. Investigate how birds appear in art and history, for example, in ancient cave paintings, on stamps, or in military history. Look also at uses of bird song and movement in music and dance. Recommended books, web sites, and other resources are on the Urban Bird Studies web site.

Suggested activity: Visit the web site for full instructions. To participate choose one or more of the experiences listed.

E. MEET THE SCIENTISTS

During the Celebration, scientists at the Cornell Lab of Ornithology will answer your questions about city birds. The schedule of chat rooms, discussion boards, and other opportunities are listed on the web site.

Funded in part by the National Science Foundation
LEARN ABOUT CITIZEN SCIENCE AND THE URBAN BIRD STUDIES PROJECTS

What is citizen science? It is a partnership between citizens and scientists to conduct large-scale research that would not be possible otherwise. Scientists cannot be everywhere at once so they are asking you for assistance. From backyards and city streets to remote forests, citizen scientists make up the world’s largest research team. Please join us—it’s EASY and FUN!

A. URBAN BIRD STUDIES: CITIZEN-SCIENCE PROJECTS THAT ARE FOCUSED ON CITY BIRDS

Each project was developed from a simple question that is of interest to scientists. By participating in Urban Bird Studies you will
1. Learn about how birds use city habitats
2. Learn how to identify and count birds
3. Learn how to observe bird behaviors
4. Contribute meaningful data to the Cornell Lab of Ornithology for scientists to learn more about city birds

Suggested activity: Walk around your neighborhood looking for birds. Draw or describe these places in your journal or take photographs to add to your journal later. Note any birds you see. If you don’t see birds, write down a list of reasons that might explain why they’re missing (for example, it’s very hot so maybe they are hiding in the shade).

B. CROWS COUNT: HOW DO CROW GROUP SIZES CHANGE THROUGH SEASONS?

Why study crows and their relatives? To learn more about the sizes of family groups and urban roosts. Crows, ravens, magpies, and jays are in the Family Corvidae and are often referred to as “corvids.” Sizes of family groups seem to differ from one region to another but little else is known about this. During fall and winter, some urban locations have huge numbers of corvids (sometimes in groups larger than 50,000) that roost together. Instructions and other materials for Crows Count are included with your Celebrate Urban Birds! kit. Or, go to <www.urbanbirds.org/crows> for more information.

Suggested activity: Learn more about the Family Corvidae in the Bird Guide at <www.urbanbirds.org/crows>. Find stories on the Internet or at your local library about how crows and ravens star in mythology and other stories.

C. BIRDS IN THE CITY: WHAT BIRDS LIVE IN YOUR CITY?

Why study birds in cities? To figure out what habitats birds use in cities. Scientists are beginning to realize two things about cities
• they provide important habitat for many birds
• little is known about how and when birds use cities.

It is not surprising that birds live in large city parks, but there is growing evidence that birds live in many types of city habitats. By participating in Birds in the City, you can help scientists to learn more about urban birds in their habitats.

Instructions for Birds in the City are included with your Celebrate Urban Birds! kit. Or, go to <www.urbanbirds.org/city> for more information.

Suggested activity: Find a list of birds for your area. You can get a list from a nearby bird club, park, or nature center. Links to bird lists are on the web site. Try to figure out which birds might live in your city or in your neighborhood.

D. OTHER URBAN BIRD STUDIES PROJECTS

Check out the three other Urban Bird Studies projects
1. PigeonWatch (now with online data entry!)
2. Dove Detectives
3. Gulls Galore

Instructions are available on the Urban Bird Studies web site.

Suggested activity: Walk around your neighborhood looking for pigeons, doves, and gulls. Write in your journal where you see them. Later, if you choose to conduct one of these three projects, you’ll know where you can set up your Study Site(s).

E. OTHER BIRD PROJECTS

The Lab of Ornithology and other organizations have numerous other citizen science projects focused on birds. The Urban Bird Studies web site provides links to these projects.
CONDUCT URBAN BIRD STUDIES PROJECTS

A. CROWS COUNT
It’s EASY, all you have to do is
1. Find one or more Study Sites for studying crows and their relatives, ravens, magpies, and jays.
2. Record the habitat information on a simple Habitat Form.
3. Count and record the numbers of crows, ravens, magpies, and jays you observe and check off their behaviors on a Tally Sheet.
4. Report your data to the Cornell Lab of Ornithology.
Instructions for Crows Count are included with your Celebrate Urban Birds! kit. Or, go to <www.urbanbirds.org/crows> for more information.

B. BIRDS IN THE CITY
To participate, all you have to do is
1. Find a location for a Transect (a line, such as a sidewalk, to walk while you count birds).
2. Record the habitat information on a simple Habitat Form.
3. Count birds along the Transect and record them on the Tally Sheets.
4. Report your data to the Cornell Lab of Ornithology.
Instructions for Birds in the City are included with your Celebrate Urban Birds! kit. Or, go to <www.urbanbirds.org/city> for more information.

DESIGN YOUR OWN PROJECT
Science is an orderly way of answering questions. Starting with observations, you can develop questions related to your observations. Then, with time, you might determine possible answers to your questions. Eventually, you end up with new observations and even more questions. This is the scientific method.

A. HOW TO ASK AND ANSWER SCIENTIFIC QUESTIONS
Here are some steps for developing your own bird project.
- Observe some birds in your neighborhood.
- In your journal or on some paper, write some notes about the birds.
- Using your observations, write some ideas about what you would like to learn about the birds.
- Rework your ideas into questions.
- Next, write a list of things you could count, measure, or describe that could help you answer one of your questions.
- Go back to the question and reword it to make it more simple to answer.
- Repeat this several times until you make a question that is easy to answer.
- Go back to your birds and observe them again. Count, measure, or describe the information you need to answer your question.
- Finally, summarize your data. Can you answer your question?
  - if not, go back to observe some more; rework your question if you find it too hard to answer
  - if so, write up some conclusions and some new questions

For example, you might ask, “How does a pigeon eat a piece of popcorn?” This is a good question but it might be hard to collect data to answer it. You could simplify the question to, “How many times does a pigeon peck at a piece of popcorn before eating it all?” Now, you can count the number of pecks to help answer the question. Although you still won’t know everything about how a pigeon eats popcorn, you are beginning to understand it.

B. REACH OUT
One important part of conducting a science project is sharing your ideas and results. Scientists do this through publication in journals and magazines, presentations, and discussions. Tell someone about your project or results by writing, talking, or using pictures. You also may want to get some other people involved to help you answer your questions.

Suggested activity: Develop your own bird project, write it up, and send it to us. You can even send a “proposal” if you are not yet able to collect your data. We may publish your project or proposal in the Celebration issue of PigeonScope or on our web site.
A. REVIEW YOUR JOURNAL

After participating in one or more of the activities listed in this booklet, review your journal entries. Think about what you have learned about birds and what questions you still have. Remember that science is about asking and answering questions—scientists start each research project with a question and then figure out a way to find answers to that question. By asking questions and attempting to answer them, you are on your way to thinking scientifically.

B. COMPLETE THE SECOND SURVEY

Help us learn about your participation in Urban Bird Studies. Fill in one or more of the sections of the Second Survey. We may publish your art, writings, comments, and other work. Two surveys are available—choose the one you prefer to use.

C. MAIL YOUR TALLY SHEETS, HABITAT FORMS, AND COMMENTS TO

Urban Bird Studies
Cornell Lab of Ornithology
159 Sapsucker Woods Road
Ithaca, NY 14850
Email: urbanbirds@cornell.edu

Use the same address (and envelope if you want) to send us your surveys, art, stories, photos, and all other contributions. Don’t forget to include your name, city, and state for us to use if we publish your contributions. Please include grade level or age if you are a student.

D. SCIENCE EDUCATION STANDARDS

Most of the activities described here satisfy national, state, and regional guidelines or standards for science education. Go to the web site for more information about matches between Urban Bird Studies and national science standards.

A. GARDEN MOSAICS

Garden Mosaics is a science education program that combines intergenerational learning, community action, and learning about different cultures. The web site includes inquiry activities and database projects. Check out Neighborhood Exploration, listed under Investigations in the Program Manual. For more information go to <www.gardenmosaics.cornell.edu>.

Suggested activity: If you have a community garden or other local green space, you may want to participate in another Garden Mosaics project called Weed Watch.

B. CITIZEN-SCIENCE PROJECTS INVOLVING ANIMALS OTHER THAN BIRDS

The Urban Bird Studies web site has links to a number of citizen-science projects on animals such as frogs, salamanders, bats, and butterflies.

C. ACTION PROJECTS

Many cities have action projects in which you can become involved—check with your local news organizations to see what’s happening in your city. Go to the web site for links to some national organizations that have action projects that may interest you.

SUMMING IT ALL UP / REPORT YOUR DATA

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