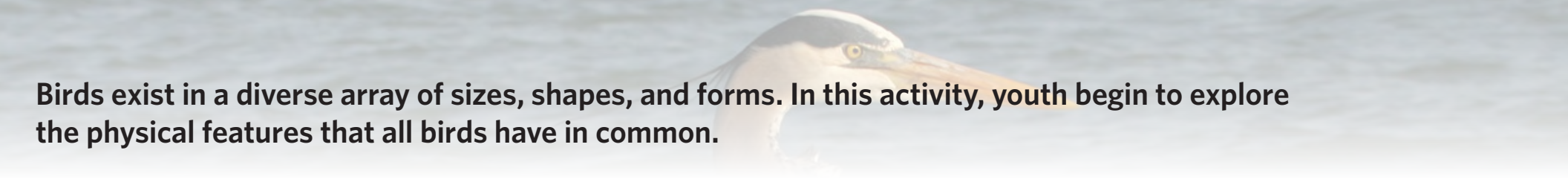


1: BUILD A BIRD



Great blue heron
Ardea herodias



Birds exist in a diverse array of sizes, shapes, and forms. In this activity, youth begin to explore the physical features that all birds have in common.

Your mission today is to investigate bird shapes and features.

Preparation

- » Load video: [Science Action Club Citizen and Community Science](#).
- » Distribute SAC notebooks as youth enter the room. Encourage youth to decorate their notebook cover while waiting for the club session to begin.

Why Take on This Mission? 10 min. | inside

Over the next few weeks, you will become expert bird scientists, called **ornithologists**. Through games and experiments, you will investigate local birds and examine characteristics that make birds unique. Each day, you will get a new mission to help focus your adventure. Your mission today is to investigate bird shapes and features.

Birds are fun to investigate because they are easy to find and they display interesting behaviors such as flying, strutting, and feeding. They are also important for science. Changes in bird behavior and seasonal migrations can indicate when the environment and climate is changing. As citizen and community scientists, you will spend the next few weeks watching birds to study the diversity of species in your area.

Watch Science Action Club Citizen and Community Science (2 min.) to learn more about your mission.

Share out: What birds have you seen around your club location and home?

Draw a Bird 20 min. | inside

1. Everybody gets one *Bird Identification* card. Keep the photo and name on the card hidden!
2. Find a partner. Describe the bird on your card for your partner to draw on a blank sheet of paper, but don't say what kind of bird it is. Remember to use details. Your partner can ask questions.
3. After five minutes, compare the drawing to the photo. How is the bird you drew similar to or different from the bird that was described to you?
4. Then, switch roles. Listen carefully to your partner's details to draw the bird on his or her card. Apply the lessons you learned in the first round to improve your communication in the second.

Kit Materials

A

- » [Bird Identification cards](#)
- » [Build a Bird cards](#)
- » SAC stickers

C

- » crayons

Loose Items

- » SAC notebooks

Materials Not Included

- » blank paper





Build a Bird 30 min. | inside

A bird's body has features specially adapted for the environments in which it lives. For example, birds with webbed feet use them as paddles in the water. The size and shape of beaks, feet, and feathers can provide clues about what birds eat and how they behave. Minor differences in physical features can be major keys to identifying a species.

All birds have a beak, legs, wings, and a body. Use these key features to devise an original bird that is adapted for its environment.

1. At random, choose one of each *Build a Bird* card. Then, assemble your bird.
2. Describe what its habitat might be based on its body parts. Use your imagination!
 - » What does it eat?
 - » Where and how much does it walk?
 - » Where and how far does it fly?
3. Feathers can help a bird stand out or blend in. Color your bird to help it attract a mate or hide from predators.
4. Describe your bird to the other members of the club.

Share out: What makes your bird unique? How would someone identify it? How would you sort the birds you created based on similarities?

Call to Action: As you see birds in your neighborhood, notice differences in their beaks, legs, wings, and bodies. Try your hand at drawing different birds while paying close attention to shapes and features. For inspiration, check out [How to Draw Birds](#).

Call to Action:
[How to Draw Birds](#)



Attendance & Feedback: How many youth attended? How did it go? Record notes here, then click or scan the link to let us know.

How did it go?
[Let us know!](#)



4: BIRD COUNT



Rock pigeon
Columba livia



Counting the exact number of birds in a flock can be difficult. In this activity, youth practice estimating the total number of moving objects and conduct their first *Bird Count*.

Your mission today is to count birds and share your observations.

Preparation

- » Download the [eBird app](#) on your digital device.

Bean Bag Flock 15 min. | outside or inside

Counting one bird is easy, but 10 might be tough. Whether birds in a flock are flying or standing, you can estimate their number by making groups of ten. When you see a flock flying over:

1. Count the first 10 birds in the flock.
2. Estimate how many groups of 10 remain.
3. Sum the total for a rough estimate of your bird count.

Your final count doesn't need to be exact. Scientists just want to know if there was one bird, a few, or a lot.

Practice estimating bird counts with a bean bag toss.

1. Gather in an open area and give everyone a bean bag.
2. Before each round, players must silently decide if they will or won't toss their bean bag in the air. This will keep the number of bean bags in the air random.
3. On the count of three, toss—or don't! As the bean bags fly, everyone must call out an estimate of the number of bean bags in the air.
4. Once the bean bags fall, count how many were actually tossed and compare that to the estimates made.

Practice until everyone feels comfortable making an estimate. Alternatives:

1. A few players can stand aside and count without tossing.
2. Players can hold two bean bags and decide each round whether to throw one, both, or none.

Share out: What was challenging about counting the bean bags? What strategies worked for you?

Kit Materials

A

- » [Bird Count and eBird guide](#)
- » [Bird Count stickers](#)

Loose Items

- » bean bags
- » binoculars
- » SAC notebooks

Prepare for Citizen and Community Science 5 min. | outside or inside

You now have the skills to find, identify, and count birds. You are ready to become an expert citizen and community scientist! Citizen and community scientists are everyday people who use their science skills to help professional researchers make important discoveries about our planet. For example, in 2015, a 10-year-old citizen and community scientist shared a photo of a bird she found near her home in Los Angeles. As it turned out, it was the first ever sighting in California of a rare bird called the social flycatcher.

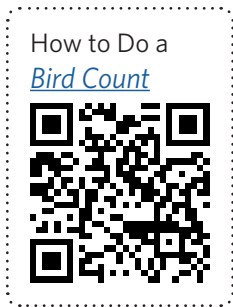
In Science Action Club, you will use your birding skills to find and identify birds, then upload your observations to the online database [eBird](#). Your discoveries will help scientists around the globe better understand bird habitats and behavior.

Get Stealthy 10 min. | outside

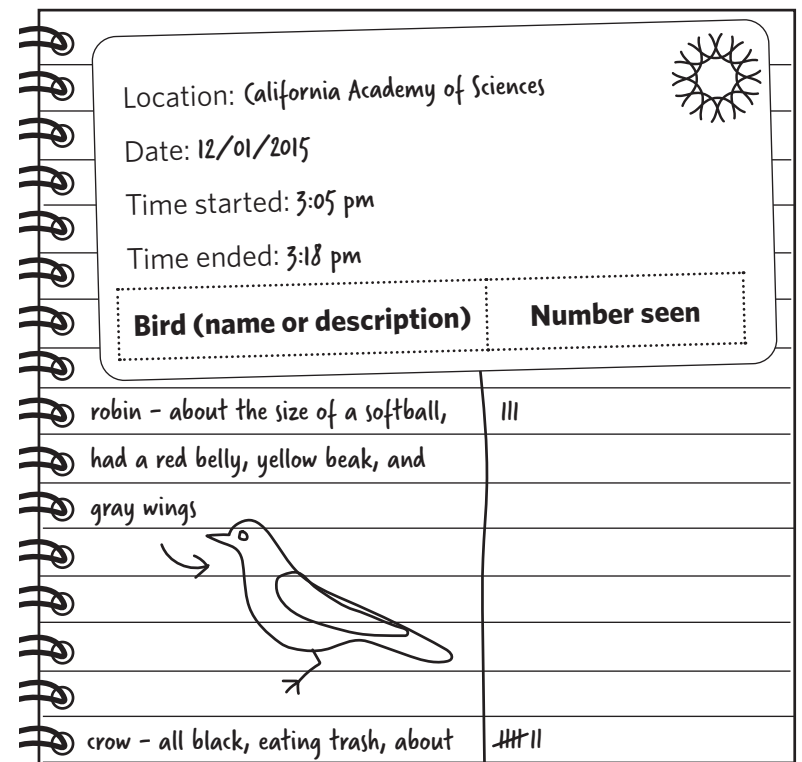
Before your *Bird Count*, play a quick round of *Stealthy Birders* (see Activity 3) to practice your stealth skills.

Bird Count 20 min. | outside or inside

Watch How to Do a [Bird Count](#) (3 min.). Then, follow the steps below for your first *Bird Count* experience.



1. Form teams of four. Each team needs the following *Bird Count* tools:
 - » *Bird Count* sticker (this goes in the recorder's notebook)
 - » a pair of binoculars
2. Head outside to start birding. Record the location, date, and start time on your *Bird Count* sticker.
3. Record notes on all the birds you see or hear. Keep track of size, color, field marks, and if a bird was flying, walking, or perched.
4. Note the different types of birds you see and the number of individuals of each type. Be careful not to count the same individual more than once.
5. After 10 minutes, record your end time.

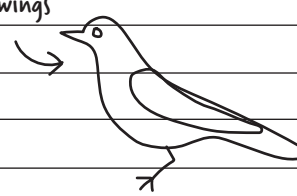


Location: California Academy of Sciences

Date: 12/01/2015

Time started: 3:05 pm

Time ended: 3:18 pm

Bird (name or description)	Number seen
robin - about the size of a softball, had a red belly, yellow beak, and gray wings	III
	
crow - all black, eating trash, about	##II

Example *Bird Count* notebook entry.





Submit Your List 10 min. | outside or inside

1. Use the Merlin Bird ID app to identify your birds. Enter the location, date, bird size, feather colors, and what the bird was doing. The app will use that information to generate a list of options. If you don't see your bird, go back and adjust the size or colors you selected.
2. Your club will submit just one checklist each time, so you will need to combine your counts. For each type of bird observed, record your club's best estimate for the total number seen. This is your club list.
3. When you are ready, open the eBird app and select **Start New Checklist**.
 - » Select **Choose a Location From Map** and confirm your birding location.
 - » Indicate the date and time, then select **Start Checklist**.
 - » For each bird on your club list, enter the name and number of individuals recorded. If you are not sure which species you have observed, choose the general species option. For example, if you saw three gulls but aren't sure which kind, enter '3' for gull sp.
 - » When you are done, select **Review & Submit** at the bottom.
 - » You are submitting a complete checklist, so select **Yes** at the top. Then, select **Stationary** as your Observation Type.
 - » Finally, enter the following data:
 - Number of observers: This is the total number of people who looked for birds today.
 - Duration (minutes): This is the total number of minutes you spent birding.

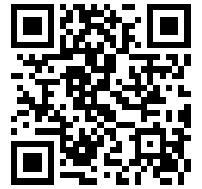
Share out: What was challenging about doing a bird count? What might you try to do differently next time?

Explore More: Play the [Bird Song Hero Game](#) to test your bird observation skills.

Call to Action: Check out other [citizen and community science projects](#) at the Cornell Lab of Ornithology. Is there a project that you would like to try with your family?

Explore More:

[Bird Song Hero Game](#)



Call to Action:

Explore [Citizen and Community Science Projects](#)



Attendance & Feedback: How many youth attended? How did it go? Record notes here, then click or scan the link to let us know.

How did it go?

[Let us know!](#)

