



Learning Objectives

1. Identify bird species using a bird guide
2. Record measurements of bird characteristics
3. Demonstrate proper bird handling

Lesson Concept

Tools allow scientists to gather information on bird species and their population sizes.

TEKS

(4) Scientific Investigation & Reasoning (C) **collect and record data using the International System of Units (SI)** and qualitative means such as labeled drawings, writing, and graphic organizers;.

(4) Scientific Investigation & Reasoning (A) use appropriate tools to **collect, record,** and analyze information, including **journals/ notebooks,** beakers, Petri dishes, meter sticks, graduated cylinders, hot plates, test tubes, triple beam balances, microscopes, thermometers, calculators, computers, timing devices, and **other equipment** as needed to teach the curriculum.

Grade: 6

Subject: Science

Time Required: 30-40 min

Group Size: 2

Approx. Cost: \$20*



Be a Bird Biologist!

Learning how to capture and mark wild birds.

Topic: Wildlife Techniques

Monitoring animal populations in a certain area is a very important part of a wildlife biologist's job. Wildlife biologists do this to estimate the number of individuals living in the area or to see if the animal returns to the area in the future.

Depending on the type of animal, there are different ways of capturing and marking the animals. For small mammals like rodents, wildlife biologists use box traps which capture the animal live as they are lured into the box by the pre-bait left by the biologists. When these traps are checked, biologists can identify, weigh, and mark the animal. However, for wild birds different techniques are used including one called



Extracting birds from a mist-net

Source: nps.gov

mist-netting. A mist-net is a very thin, almost invisible net that the birds fly into and get caught. Biologists remove the birds from the net and handle the birds in one of two grips known as bander's grip or photographer's grip. These grips allow for ease of handling and lessens the stress on the bird. When in the hand, the biologists band the bird's leg after identifying, weighing, and measuring it. Once they are done processing the bird, it is released. On their next mist-netting session, if they capture that bird again, they can keep track

of its visits and age. Having this population data available on each animal will allow them to know if the same animal is revisiting the area again (i.e. migrating bird) or if the animal lives in the area (i.e. resident bird).

Here students will be out in the field as a junior bird biologist handling and marking birds to track their populations! Using a field notebook (or field sheets) students will be measuring and recording information on each bird they extract from the net. Students will be using tools such as rulers and scales to gather information on the bird.

Materials

Artificial birds (with legs)* (1/2 students)

Cloth Bag* (1/2 students)

Ruler (1/2 students)

Bird ID Guide (1/2 students)

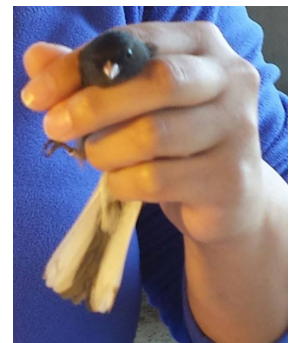
Colored Zip-tie (2/2 students)

Net (e.g. bird netting)* x10 ft

Scale x5 (Shared among class)

Field Notebook w/ Bird Banding Field Notes Sheet (1/student)

Pencil/Pen (1/student)



Dark-Eyed Junco (*Junco hyemalis*) in bander's grip.

Photo Credit: Janel Ortiz

Be a Bird Biologist!

Topic: Wildlife Techniques

Grade 6, Science

Keywords

Mist-net: thin, almost invisible net used to capture wild birds or bats

Population: number of individuals of a species

Migratory Bird: a bird that moves to different locations based on the season, may just pass through your area

Resident Bird: a bird that stays in one location year-round

Species: in this lesson it references to the type of bird (e.g. Northern Cardinal, Macaw, etc.)

Bander's Grip: bird's wings are pressed against the bander's hand and the bander's pointer and middle finger hold firmly on the bird's shoulders around the head, the bird is secure enough not to struggle and the position is easy to maneuver in order to weigh, measure and band (see previous page for photo)

Photographer's Grip: legs securely held with the middle and pointer finger supported by the thumb for better inspection of bird (photo below)

Teacher Background

Bird banding was first used in 1890 and since then has been the method of marking millions of birds. The method of capture varies depending upon the species and habitat but the purpose of banding is the same across all species– to track the individual. In this lesson, mist-netting is the method of capture which is primarily used for small songbirds although larger birds can also become entangled depending on the size of the holes within the net. Another example of capture would be with canon nets that are shot out on a group of birds with the hopes that it catches them before flying off. This method is typically used for shore– or water-birds. Banding data provides a way for estimating population size, survival rates of species, species ranges, migration changes, and others.

Website(s):

What Is Bird Banding and What Is It For?

<http://birding.about.com/od/birdconservation/a/Bird-Banding.htm>

Bird Banding Laboratory– About Banding

<http://www.pwrc.usgs.gov/BBL/homepage/aboutbanding.cfm>

Bird Banding– Learn Science at Scitable

<http://www.nature.com/scitable/knowledge/library/bird-banding-83032042>



Hawaiian Honeycreeper in photographer's grip with visible leg band.

Photo Credit: Maia Lipschutz

Engage

Teacher: "How many of you have held a bird?"

Students raise hands....

Teacher: "And how did you catch that bird?"

Student: "I didn't I was at the zoo and I got to hold one." or "It was dead" etc.

Teacher: "Birds are pretty fast, so chances are you can't catch one with your bare hands. But what about scientists who study birds how do they do it? Do you know what those scientists are called?"

Student: "I don't know" "Bird scientists?"

Teacher: "They're called ornithologists (the study of birds = ornithology) and they capture birds to study them in many different ways and today we are going to be ornithologists and learn how they capture birds in the wild. Are you ready? Get with a partner, working as a team we are going to learn about bird banding!"

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Procedure

TEACHER	STUDENT	CONCEPT
<p>1. Hang net outside onto/between trees or bushes. Make sure it is low enough for students to reach. “Where would be the best place to hang the net to catch most birds?”</p> <p>2. Place plush birds on the net.</p> <p>3. Demonstrate handling methods in front of the class: bander’s and photographer’s grips. “There are two ways we should handle the birds when we are banding them. The first is bander’s grip which lets us easily band the leg of the bird and then there’s photographer’s grip. Why do you think it’s called that?”</p> <p>4. Pass out the bird banding field note sheet to each student & instruct them to place it or tape it into their field notebooks.</p> <p>5. Show students where their “banding station” will be located, best if at a table where all of the supplies will be (rulers, zip-ties, scales, cloth bags). Have one student be assigned as the bander and other as recorder, after banding their first bird they can switch.</p> <p>6. In pairs, have students remove the bird from the net and place the bird into a cloth bag and return to the “banding station.”</p> <p>7. Have students slowly remove the bird from the bag and handle the bird by holding neck with index and middle finger while holding the body (bander’s grip).</p> <p>8. Using a zip-tie, band one leg of the bird & record the color and leg for future identification. “Why would we want to band the leg before anything else?” (In case of the bird escaping, it will already be marked and if caught at the next banding session, all measurements can be taken then.)</p> <p>8. Using the bird identification guide, have students identify the species.</p> <p>9. Spread the wing of the bird and measure wing length and other measurements listed on their field note sheets.</p> <p>10. “Release” the bird!</p> <p>11. Have students switch roles and repeat the process with another species for extra bird ID practice!</p> <p>WRAP UP & FOLLOW UP:</p> <ul style="list-style-type: none"> - End the lesson by asking the students which species did they get to capture and band. Ask questions relating to the wing and tail length. - Have students define the role of a bander and data recorder. How was it working together? Is it easier or can they do everything by themselves? - Follow up in a few days by asking student’s the difference between bander’s and photographer’s grip, have them hold up their hands in the position. Ask them the purpose of each grip. 	<p>“Near trees or bushes that have food for the birds.”</p> <p>“Where we have lunch!”</p> <p>“So you can see all of the bird when you take a picture of you holding the bird?”</p> <p>“In case the bird flies away?”</p> <p>“I got a Northern Cardinal, it’s wings were _____ long!”</p> <p>“It would have been hard to do it alone, I can’t hold the bird and write at the same time.”</p> <p>“Bander’s leaves the legs loose so we can band it and photographer’s is good to see the entire bird and take a picture.”</p>	<p>Wildlife biologists use many tools to gather information about an individual within a population of animals.</p>

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Assessment

Pre-Assessment

Discuss the field of ornithology, the methods used to monitor bird populations (mist-netting) & handling (Objective 3)

Activity Embedded Assessment

Identify bird species, measure and record bird characteristics (Objectives 1 & 2)

Handle bird in bander's and photographer's grip (Objective 3)

Post-Assessment

Demonstrate and describe proper bird handling methods (Objective 3)

Activity Extensions

Contact a local Audubon group, zoological facility, or search online to inquire about bird banding opportunities or workshops. This can serve as a field trip and hands-on experience for the students learn more about mist-netting , observe, and have the chance to hold live birds. Many outreach organizations may have educational animals (which include birds) that can be held, look for those opportunities as a way to get your students out and involved. Who knows, they may love banding so much they become a long-term volunteer at a banding station through the years!

Refer to the next page for potential banding contacts!

Activity Scaling

For younger students, practicing the two handling methods of birds would be a good starting point and focus. Because they may not be as familiar with scales and rulers, practice with these two tools would need to be covered first before conducting the entire activity.

For older or advanced students, have them collect data on a variety of different plush birds. Have them enter this data into Microsoft Excel for data entry practice and data management. Have students create a table in which they can easily sort data by species. To get a little more creative, add weight to each or some of the birds by implanting rocks or marbles into the stuffing. This will create a variety of weights for their data analysis. From this they can derive descriptive statistics for all of the bird samples (means, modes, ranges, etc.). With these added onto their data in Excel, they can chart average weights of the species.

Potential Bird Banding Opportunities

Welder Wildlife Foundation, Sinton, Texas
<http://www.welderwildlife.org/>

Texas Independence Trail Region, Lake Jackson, Texas
<http://texasindependencetrail.com/events/bird-banding>

Coastal Bend Audubon Society, Corpus Christi, Texas
<http://coastalbendaudubon.org>

Inland Bird Banding Association, Victoria, Texas
<http://www.ibbainfo.org>

Bird Banding at Caddo Lake, Texas/Louisiana Border
http://caddobirds.com/bird_banding.htm

Gulf Coast Bird Observatory, Lake Jackson, Texas
<http://www.gcbo.org/default.aspx/MenuitemID/185/MenuGroup/Home.htm>

Concho Valley Bird Banding, Concho Valley, Texas
<http://www.conchovalleybirdbanding.com>

Lewisville Lake Environmental Learning Area, Lewisville, Texas
<https://lela.unt.edu/bird-banding-llela>

Alternative Materials & Sources*

Mist-Net: truck cargo net, volleyball/badminton nets

Birds (*make sure they have legs*): Beanie Babies, stuffed/plush birds

Artificial décor birds: visit Floraltrims.com (12 pc for ~\$12) or local home décor store

Cloth Bags: make your own using old pillow covers or sheets and old shoelaces

Contact Information

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