



## Learning Objectives

1. Build personal database with bird sightings.
2. Navigate STWB website.
3. Create visual aids for data display.

## Lesson Concept

Citizen science allows for observations, data collection, and sharing with the community and scientists.

## TEKS

(2) Scientific investigation and reasoning. (D) construct tables and graphs, using repeated trials and means, to **organize data** and **identify patterns**.

(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: 1 hour**

**Group Size: 2**

**Approx. Cost: \$0**



# Citizen Science for South Texas Birds

## Using "South Texas Wintering Birds" In the Classroom

### Topic: Wildlife Research

Citizen science is a growing field that allows a community to become engaged in science by collecting data. Members of the community participate in a variety of field projects in which their data is passed on to scientists for analysis. Within the last decade, there has been an increase in the number of projects available to the public. Popular projects include the Cornell Lab of Ornithology's eBird, the Audubon Christmas Bird Count (CBC), and the USGS North American Breeding Bird Survey (BBS). The data has provided important information regarding the changes to wildlife distribution and patterns across a variety of landscapes. With the development of technology, the ease and interest in collecting data is sure to spark interest and continue the improvement and growth of the field.

Projects involving bird monitoring often attract participants that are very familiar with the outdoors, such as "birders" who consider themselves naturalists. However more projects are reaching out to those who have little to no experience in the field, including children. In 2007, the Caesar Kleberg Wildlife Research Institute (CKWRI) began a collaboration with the Cornell Lab of Ornithology and the National Audubon Society to bring the community the "South Texas Wintering Birds" database. The goal of the project is to introduce private landowners, teachers, and students in the South Texas region to citizen science. By allowing them to collect bird sighting data, they are contributing to ongoing research. Because of the bird diversity found in South Texas, it is important to see what species are present. For that, access to private lands, school campuses and even your backyard is essential. The South Texas Wintering Birds program is much like eBird in its functionality. The difference is an additional privacy feature that conceals exact locations of birds within private properties to protect landowners and their property. All entries through the South Texas website appear at the county level, however, providing data to all users but balancing privacy at the same time.

Our aim is to gather interest from the community (including you and your students!) to build the South Texas eBird database in order to gain a better understanding of the species present in the region. Our interest is in learning about the presence of all birds including game species such as Northern Bobwhite, Wild Turkey, and doves. You can help get this going by registering and recording the birds sighted on your property, backyard, or school campus. Sightings from any location in the South Texas region are welcome, which is anywhere from San Antonio and down. And during any time of the year! In this lesson, you will be working with your students to input their data into a Microsoft Excel worksheet for easy upload onto the STWB website. From there you can explore their data through graphs, charts, and maps!

Visit [www.stwb.org](http://www.stwb.org) & explore!



**South Texas Wintering Birds**

From ranch to regional records—help create a living bird atlas



## Materials

### EXPLORE #1:

- Laptop or desktop computer (1/2 students)
- Microsoft Excel
- Bird Record Template (ebird\_record\_format\_template.xls)
- Bird sighting data (from previous lesson, "Basics of Birding")

### EXPLORE #2:

- Laptop or desktop computer (1/2 students)
- Internet
- Bird sighting data from Excel (.CSV file)

## Citizen Science for South Texas Birds

### Topic: Wildlife Techniques

### Grade 6, Science

## Keywords

eBird: Citizen science project began by the Cornell Lab of Ornithology that serves as a database for the community's bird sightings and allows access to all data entered

Citizen Science: public participation in scientific research

## Teacher Background

This lesson plan is to follow a previous lesson plan titled “Basics of Birding” which introduces you and the students to the basics of identifying South Texas bird species and begins your data recording. With the data recorded during that lesson, we are now going to format it in our personal databases in Excel. This will provide an easy uploading platform onto the STWB database. It will be important to make sure all laptops/computers for student access have Microsoft Excel as a program and access to the internet.

Before getting started on the STWB website, it may be good to create a class account so all of the class' data can be entered into one account. If student's have their own email addresses they can create an account on their own if they have your permission and their parent's. Be sure to supervise their time online when working on this lesson.

Because bird identification may be a new skill to you, personnel from CKWRI will be holding basic bird ID workshops in the future. If you would like to participate in these workshops, please contact us by referring to the “Contact Information” section. Enjoy!

For more information on uploading data to STWB eBird visit: <http://help.ebird.org/customer/portal/articles/973915>

## Engage

Teacher: So how many birds did we see the other day?

Student: 10!, 15! \_\_\_\_\_!

Teacher: What types or species of birds did we see?

Students call out birds....

Teacher: Which one was the most common? Or which did we see the most?

Students call out common species. Teacher can agree or disagree.

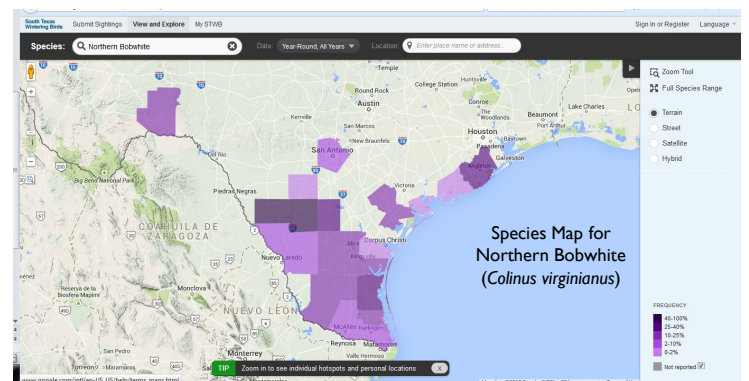
Teacher: Well today we are going to enter our data into the computer so we can create some maps and charts of the of the birds we saw.

((Be sure to emphasize that their bird sightings are data, just like a scientist collects data, they collected data too!!))

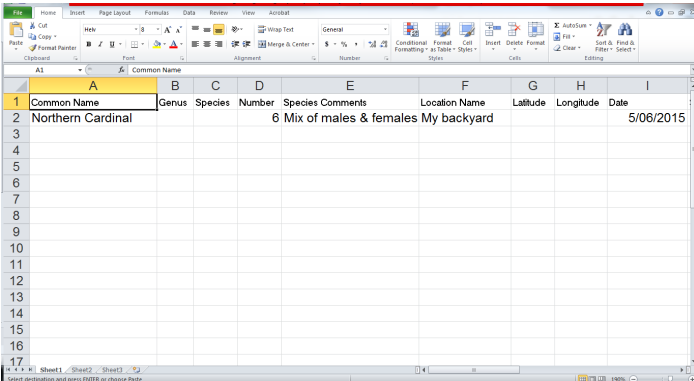
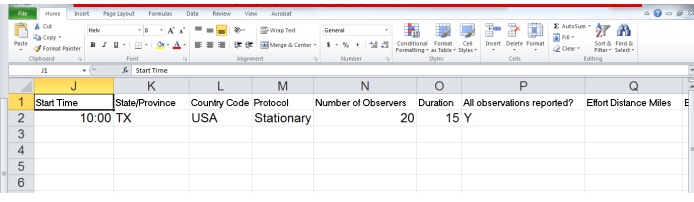
Teacher: Now get with a partner and we are going to get started on the computer.



Create an account by clicking on “Sign In or Register as A New User”



# Procedure

TEACHER	STUDENT	CONCEPT
<p><b>EXPLORE #1 (30 minutes):</b></p> <p>*Before getting started be sure to download the Bird record template provided onto each computer and save it in a location that students can easily find*</p> <ol style="list-style-type: none"> <li>1. Have students pair up to use the computers, instruct them to open up the bird record template (ebird_record_format_template.xls) which you have saved in a particular location on the computer.</li> <li>2. Based on their bird sighting data from the previous lesson, they will begin entering the bird name under common name. <b>Have students list each species only once.</b> You can leave genus and species blank (unless students are advanced).</li> <li>3. Under number have them enter the total number of birds seen for each species. Make sure they double and triple check these entries.</li> <li>4. “For species comments, you can enter anything about the sex of the bird(s), their behavior, anything you wish to include.”</li> <li>5. Location name can be you school campus name, GPS coordinates are optional, but for data the format must follow the example below.</li> </ol> 	<p>“Do we have to keep entering the same type of bird if we saw it more than once?”</p> <p>“What if I saw a male and female cardinal? Do I enter that information too?”</p>	<p>Data entry and management are important components of scientific research.</p>
<ol style="list-style-type: none"> <li>6. Fill out the remaining columns: State/Province (using 2 letter state codes), Country (US), Protocol (“Stationary” for school grounds, remain in an area that is 30 meters in diameter and record the time started and how long observations lasted), Number of Observers, Duration, All Observations Reported?, and Submission Comments (if any).</li> </ol> <p>*For protocol please refer to the following download:  <a href="http://help.ebird.org/customer/portal/kb_article_attachments/50293/original.pdf?1426171266">http://help.ebird.org/customer/portal/kb_article_attachments/50293/original.pdf?1426171266</a></p> <p>Example below.</p> 	<p>“What’s protocol?”</p>	

## Citizen Science for South Texas Birds

### Topic: Wildlife Techniques

### Grade 6, Science

## Procedure

TEACHER	STUDENT	CONCEPT
<p><b>EXPLORE #1 (CONT.):</b></p> <ol style="list-style-type: none"><li>7. Be sure that students delete the headers or column titles before saving. This can be done by selecting the “I” row and having it highlighted then right-click, delete.</li><li>8. Have students save their files in an easily accessible location such as My Documents. The file names should be saved as something like birddataDATE.CSV. <b>Make sure files are saved as a .CSV by clicking the drop down menu for file type.</b></li></ol> <p><b>EXPLORE #2 (30 minutes):</b></p> <ol style="list-style-type: none"><li>1. Have students open up the internet browser and type in: www.stwb.org. Explain the purpose of STWB and how it is a citizen science project that is helping scientists learn about birds in South Texas.</li><li>2. On the website, have students log in by entering the class account information or their own account if you have let them create one.</li><li>3. Once they’ve logged in, have them click on the top tab that says “Submit Observations.”</li><li>4. A new page will come up with a search bar and below that 3 links listed including one that says Use Latitude/Longitude, Select an entire city, county, or state, and Import Data. Click “Import Data.”</li><li>5. To import a file, click the browse button and navigate to My Documents (or wherever the CSV file is saved). Double click on your bird data CSV file and click open.</li><li>6. Under Format, select “eBird Record Format (Extended)”</li><li>7. Now click the “Import File” button.</li></ol> <p>*if the file is uploaded successfully and returns back with an unknown location, select “Choose locations” and you can search by city, county, and other options. Then click “Apply Fixes.”</p> <ol style="list-style-type: none"><li>8. Now it’s time to explore our data! Click on the top tab that says “My STWB.”</li><li>9. On the right side you can click on “Summarize My Observations.” Select a Year Report and click Continue, then select your location. A table will come up showing the number of species, total number of individuals for each month of the year. They will also give you the most common species observed from your data. Ask students what was their most common bird seen from their data.</li><li>10. You can explore your data with that of other citizen scientists by clicking on the top tap “View and Explore.” Feel free to explore any of the options given and look up data on a favorite bird species of the class.</li></ol> <p><b>WRAP UP &amp; FOLLOW UP:</b> Re-iterate the purpose of citizen science and suggest students if they are interested to continue this at home. If students would like to continue this as a project, suggest ways to standardize their bird observations through a protocol.</p>	<p>“What could I name my data?”</p> <p>“What’s STWB?”</p> <p>“It shows that my common bird is the Mourning Dove!”</p> <p>“Can we do this again?”</p>	<p>Charts, graphs, maps, and tables help summarize and visualize data to seen trends and distributions.</p> <p>STWB can help in learning the scientific method &amp; can be an option for use in a science or class project.</p>

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## Assessment

### Pre-Assessment

Total the counts of bird species observed for easy data entry (Objective 1)

### Activity Embedded Assessment

Build a personal bird sighting database using Excel (Objective 1)

### Post-Assessment

Explore the STWB website to create visual aids of bird data (Objectives 2 & 3)

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## Activity Extensions

As suggested in the “Basics of Birding,” additional bird surveys can be done on school grounds once a week or as you please. This data can then be put into Excel and uploaded onto STWB.

A science or class project can also result from the use of STWB. Have students develop hypotheses as to what they expect to see on campus (or in their backyard) and why. Have them put it to the test with bird surveys and come to a conclusion with the help of STWB and the summary of their data.

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## Activity Scaling

For younger students, practice with Excel will help develop their typing and communication skills. This may need to be practiced repeatedly until they understand what they are to enter. Introduction to the website component should wait until they are comfortable with Excel. Again, navigating the STWB website will need to be extended with a soft introduction to all the components first, then once students are comfortable, teachers can move into uploading data.

For older or advanced students, data entry and upload to the website will be much simpler. Make things a little more complex by having students use alternative data entry templates such as the bird checklist which can be downloaded here: [http://ebird.org/content/eBirdCommon/docs/ebird\\_checklist\\_format\\_template.xls](http://ebird.org/content/eBirdCommon/docs/ebird_checklist_format_template.xls)

These students can also enter much more data into the Excel spreadsheet such as genus, species, area covered, and distance covered.

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## References

South Texas Wintering Birds. <http://www.stwb.org>. Accessed May 6 2015

eBird Help. <http://help.ebird.org>. Accessed May 6 2015.

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## Contact Information

Lesson Created By:

Janel Ortiz, TAMUKBirdsGK12@gmail.com

CKWRI Wildlife Education Specialist:

Dr. April Conkey, [april.conkey@tamuk.edu](mailto:april.conkey@tamuk.edu)



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**Caesar Kleberg Wildlife Research Institute**

**Texas A&M University-Kingsville**

**700 University Blvd., MSC 218**

**Kingsville, TX 78363**

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**[[www.ckwri.tamuk.edu](http://www.ckwri.tamuk.edu)]**