

Teacher-Led Remote Learning Activities

Harvard Forest Schoolyard Ecology Spring Workshop

Session Four



Activity: Remote BioBlitz

- **Description of Activity:** Students contribute remotely to a list of plants, and animals found in their neighborhoods as part of a “Backyard Challenge”. Teachers structure a learning experience for students to explore in their own neighborhood to discover the biodiversity living there or migrating through.
- **Teacher/Author:** Michael McCarthy
- **School:** Thurston Middle School
- **Level:** 7th Grade-Science
- **Schoolyard Project:** *Our Changing Forests and Buds, Leaves and Global Warming*

Educational Objectives:

Students will practice identifying organisms using online field guides.

Students will become familiar with a diverse range of biota in their local environment.

Students will work independently to collectively record and track the biodiversity of their community.

Students will practice categorizing organisms by trophic levels.

A photograph of a well-maintained garden. In the foreground, there's a grassy area with a wooden raised garden bed containing some plants. To the left, a blue water barrel sits on a concrete block base. The background features a wooden lattice fence and more garden beds filled with various green plants and flowers. A pitchfork is visible on the right side of the frame.

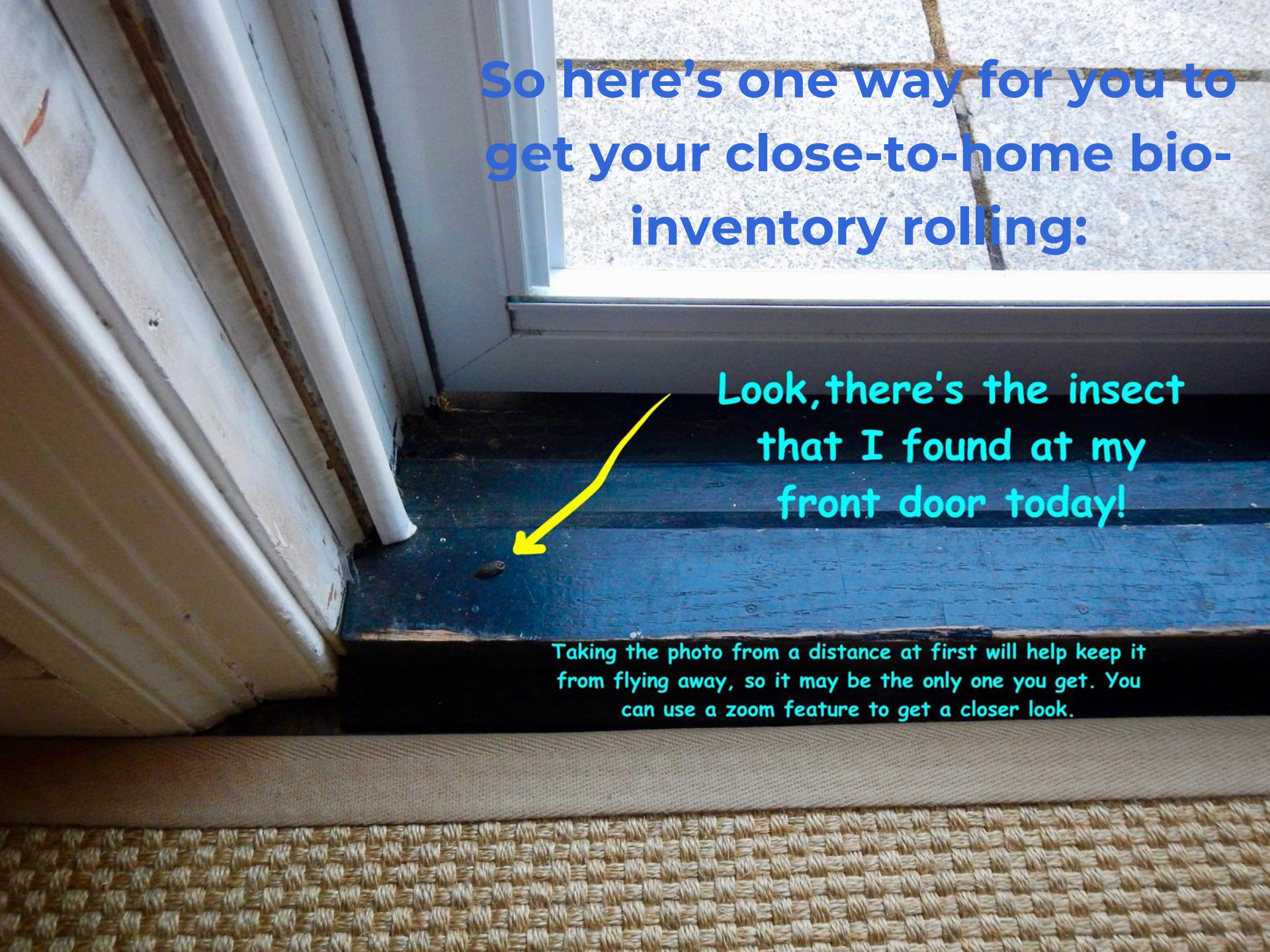
Some Ideas for How to Lead a Remote BioBlitz


**Mike McCarthy,
Thurston Middle School
Westwood, MA**

So here's one way for you to get your close-to-home bio-inventory rolling:

Look, there's the insect that I found at my front door today!

Taking the photo from a distance at first will help keep it from flying away, so it may be the only one you get. You can use a zoom feature to get a closer look.





It has pretty long, black, scaly antennae too

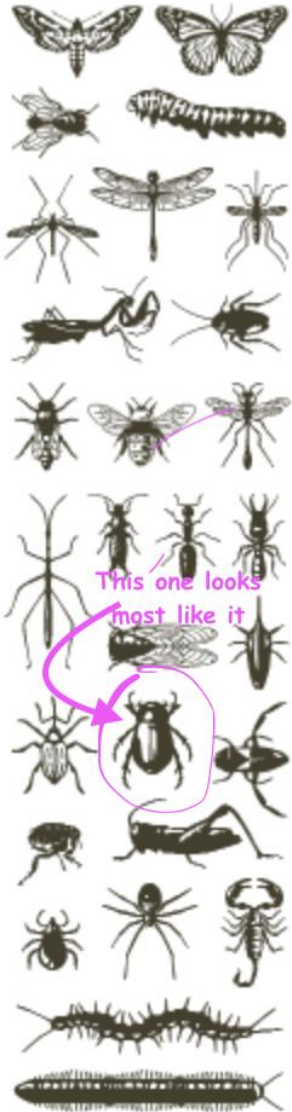
There appears to be a shield-like structure protecting its head. This shield has an orangy horse-shoe shape on it.



BugGuide

Home | Guide | ID R

Clickable Guide



My favorite on-line guide to bugs is called, you guessed it, [BugGuide](#).

Click here on the [BugGuide.net](#)

Just look at the images on the chart, and click the one that is the closest match to your bug.

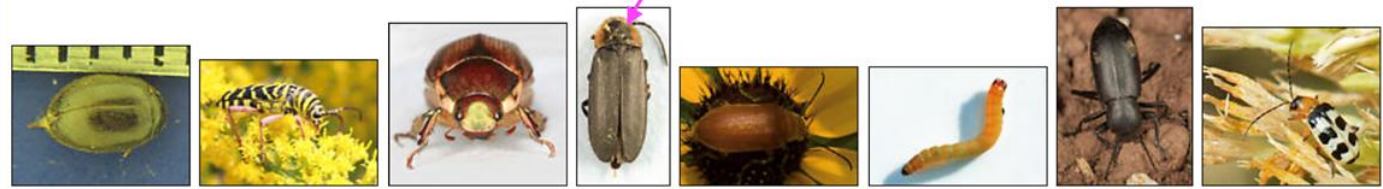
I click on the one that looks like a beetle, because my bug looks like a beetle. It has two outside wings that are like a shell. Each of the two outside wings protects each of the two wings inside the shell. The two delicate wings inside the two protective wings are ones that the beetle uses for flapping really fast to fly away (see the video again).

I Click on the beetle that matches mine

Home » Guide » [Arthropods \(Arthropoda\)](#) » [Hexapods \(Hexapoda\)](#) » [Insects \(Insecta\)](#) » [Beetles \(Coleoptera\)](#)

Order Coleoptera - Beetles

[Classification](#) · [Other Common Names](#) · [Pronunciation](#) · [Synonyms and other taxonomic changes](#) · [Explanation of Names](#) · [Numbers](#) · [Size](#) · [Identification](#) · [Range](#) · [Habitat](#) · [Food](#) · [Life Cycle](#) · [Remarks](#) · [See Also](#) · [Print References](#) · [Internet References](#) · [Works Cited](#)



Classification

Kingdom Animalia (Animals)
Phylum Arthropoda (Arthropods)
Subphylum Hexapoda (Hexapods)
Class Insecta (Insects)
Order Coleoptera (Beetles)

Other Common Names

- grubs (larvae only), white grubs (especially larvae of scarab beetles)
- Spanish: *escarabajo*
- French: *coléoptère*

Pronunciation

Co`le*op"te*ra (coe-lee-OP-ter-rah)



Sponsor

It brings me to the beetle page (Coleoptera is the order of insects that includes beetles.) I look at the photos and click on the one that matches my beetle the most.

Clickable Guide



Taxonomy Browse Info Images Links Books Data

[Home](#) » [Guide](#) » [Arthropods \(Arthropoda\)](#) » [Hexapods \(Hexapoda\)](#) » [Insects \(Insecta\)](#) » [Beetles \(Coleoptera\)](#) » [Water, Rove, Scarab, Long-horned, Leaf and Snout Beetles \(Polyphaga\)](#) » [Series Elateriformia](#) » [Click, Firefly and Soldier Beetles \(Elateroidea\)](#) » [Fireflies \(Lampyridae\)](#) » [Lampyrinae](#) » [Lucidotini](#) » [Diurnal Fireflies \(Ellychnia\)](#) » [Winter Firefly \(Ellychnia corrusca\)](#)

Species *Ellychnia corrusca* - Winter Firefly

← THAT'S IT-The winter firefly came to my front door today!!

[Classification](#) · [Pronunciation](#) · [Synonyms and other taxonomic changes](#) · [Explanation of Names](#) · [Size](#) · [Identification](#) · [Range](#) · [Habitat](#) · [Season](#) · [Remarks](#) · [Print References](#) · [Internet References](#) · [Works Cited](#)



Classification

- Kingdom Animalia (Animals)
- Phylum Arthropoda (Arthropods)
- Subphylum Hexapoda (Hexapods)
- Class Insecta (Insects)
- Order Coleoptera (Beetles)
- Suborder Polyphaga (Water, Rove, Scarab, Long-horned, Leaf and Snout Beetles)
- No Taxon (Series Elateriformia)
- Superfamily Elateroidea (Click, Firefly and Soldier Beetles)
- Family Lampyridae (Fireflies)
- Subfamily Lampyrinae
- Tribe Lucidotini
- Genus *Ellychnia* (Diurnal Fireflies)
- Species *corrusca* (Winter Firefly)

Pronunciation

core-ROOS-ka

Synonyms and other taxonomic changes

probably a complex of several spp. (1)(2)

Explanation of Names

Ellychnia corrusca (Linnaeus 1767)

Calendar

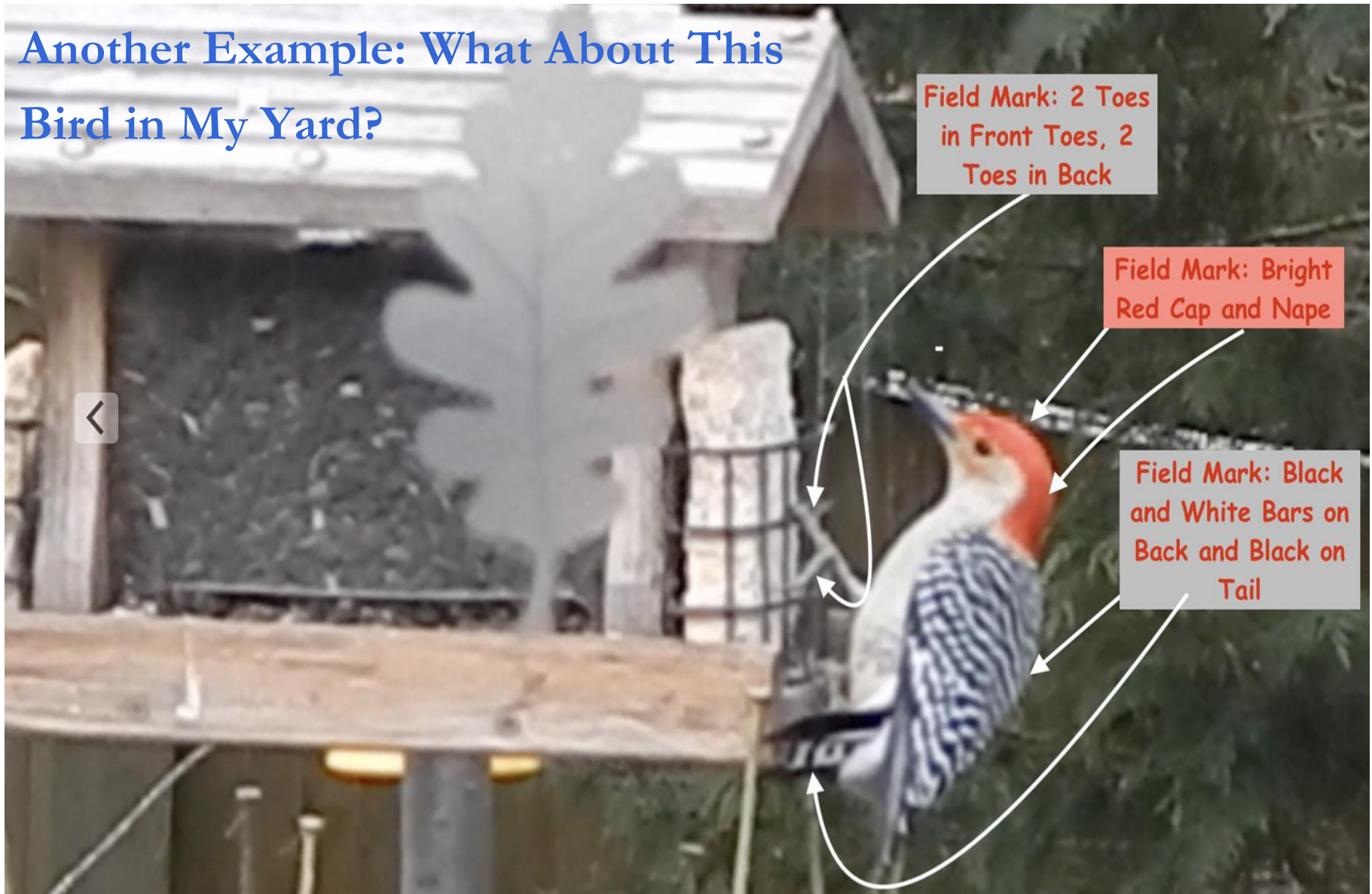
[Upcoming Events](#)

Information, [insects](#) and [people](#) from the [2019 BugGuide Gathering in Louisiana](#), July 25-27

[Discussion](#), [insects](#) and [people](#) from the [2018 gathering in Virginia](#), July 27-29

Finally, it brings me to the beetle page for the species I found at my front door today! It's called the winter firefly, or *Ellychnia corrusca* (pronounced ella-NICK-nee-ya core-ROOS-ka) HAH! <https://bugguide.net/node/view/1792191#2984671>

Another Example: What About This Bird in My Yard?



I start by [clicking on the All About Birds site](#), which gives me the steps to identify this red-headed bird that came to my feeder today.

Bird Guide

Browse by Shape

Search Taxonomy **Shape**

Click on a bird shape at left to see a list of species in this space. Or try using Search.



Auks



Blackbirds



Chickadees



Crows and Jays



Doves



Ducks



Finches



Flycatchers



Game Birds



Gulls and Terns



Hawks and Falcons



Hérons



Hummingbirds



Kingfishers



Nuthatches



Owls



Parrots



Seabirds



Shorebirds



Sparrows



Swallows and Swifts



Thrushes



Warblers



Woodpeckers



Wrens

The bird with the red cap has this shape, so I click on this shape



Bird Guide
Browse by Shape

Search Taxonomy Shape

- Auks
- Blackbirds
- Chickadees
- Crows and Jays
- Doves
- Ducks
- Finches
- Flycatchers
- Game Birds
- Gulls and Terns
- Hawks and Falcons
- Hérons
- Hummingbirds
- Kingfishers
- Nuthatches
- Owls
- Parrots
- Seabirds
- Shorebirds
- Sparrows
- Swallows and Swifts
- Thrushes
- Warblers
- Woodpeckers
- Wrens

Woodpeckers



Red-bellied Woodpecker

This one looks closest to the bird at my feeder today, so I click on this arrow and



Red-breasted Sapsucker



Red-cockaded Woodpecker



Red-headed Woodpecker



Red-naped Sapsucker



White-headed Woodpecker



Williamson's Sapsucker



Yellow-bellied Sapsucker

LOOK! It's the
bird that was at
my feeder today!!

Red-bellied Woodpecker

Overview ID info Life History Maps Sounds



Red-bellied Woodpecker by John Barnes

Listen

ID Info



Male



Female



Adult male

[All About Birds](#)

If you think you know a bird's name, [use the search box](#). Even if you don't get the name exactly right – or you only know its “last” name (such as “cardinal,” “crow,” or “jay”), choices will pop up below the box as you type.

So now I can go to the assignment posted on Google Classroom to begin my backyard species inventory list, In my case, I started very close to home--literally without having to leave my house today!

5-Science-McCarthy
CLASS MEETINGS: Tuesdays at 10:00am and Thursdays at 12:...

Instructions Student work

Take the Westwood 2020 Citizen Scientist Challenge!

Michael McCarthy Mar 31 (Edited 2:01 PM)

"Try to find and identify as many different species of animals and plants near your house as you can. Goal: Take a photo of 1 or 2 species around your house, and use the instructions (link attached) to upload your pictures to this assignment. Use the online field guides on Westwood Yard Challenge 2020 page to help you find out what is living in your yard besides you! The more different species you can find and record, the better scientific information we all have for Westwood's biodiversity!"

- McCarthy 7 Red Science - N...
<https://sites.google.com/a/west...>
- Example (Mr. McCarthy's 20...
Google Sheets
- My Yard List of Living Things...
Google Sheets
- Here's How to Upload Photo...
Google Docs
- MAY2020_almanac.pdf
PDF

Part 4: Get Outside!

Directions:

1. **Go exploring** (while social distancing) outside. Look for producers, consumers, and detritivores. Try to find at least one of each. For detritivores, try lifting up a rotting log or rock to look underneath (be sure to replace it when you're done). Without harming any organisms, **take pictures** of them.
2. Do your best to **identify** the organisms you photographed using the internet. Do some quick research on what their **diet** is like. Here are some **helpful resources for identifying organisms**:
 - a. BugGuide.net for insects
 - b. [Birds](#)
 - c. [Reptiles and Amphibians](#)
 - d. [Mammals](#)
 - e. [Tree Guide](#)
 - f. [GoBotany](#) for any plant
 - g. [Lichen Guide](#)

Producer(s)	Consumer(s)	Detritivore(s)
Explain how you know: _____ .	Explain how you know: _____ . What kind of consumer (primary, secondary, tertiary, apex predator)?: _____ .	Explain how you know: _____ .

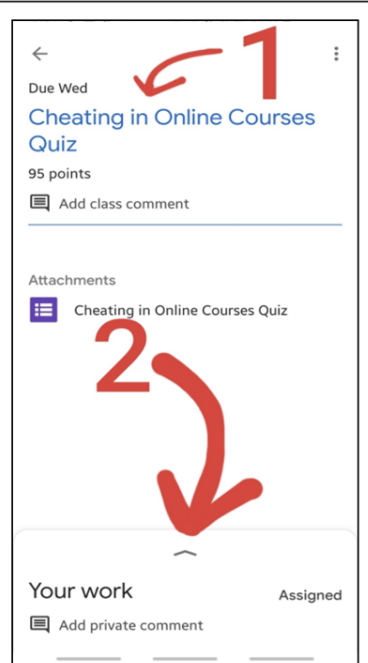
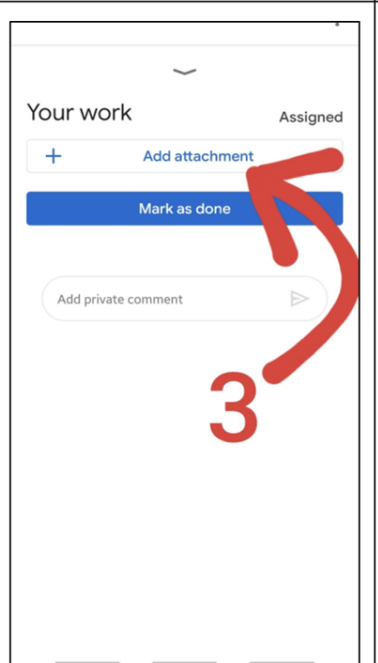
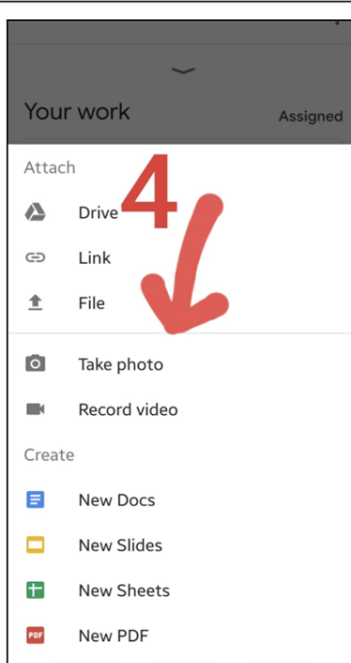
Here's How to Upload Photos to Google Classroom Assignments

First, Install the Google Classroom App on your mobile device:

iPhone/iPad	Android
<ol style="list-style-type: none">1. Go to the App Store2. Search for Google Classroom3. Tap "Get"4. Open the app and log in	<ol style="list-style-type: none">1. Go to the Play Store2. Search for Google Classroom3. Tap "Install"4. Open the app and log in

Then, follow these steps inside the Google Classroom App:

[See a video of these steps](#)

<ol style="list-style-type: none">1. Tap on the Assignment2. Tap into "Your Work" at the bottom of the screen.	<ol style="list-style-type: none">3. Tap "Add attachment"	<ol style="list-style-type: none">4. Tap "Take Photo" (Android) or "Use camera" (iPhone) to take your photo!
		

Westwood Yard Challenge 2020 Results (updated May 5 2020)



Alissa F apple blossom buds 4-20-20 B6



Alissa F cherry blossoms 4-20-20 B6



Alissa F daffodils + dandelions 4-20-20 B6



Alissa F Dutch hyacinth 4-20-20 B6

Student Results 5-5-20 - Yard Lists of Living Things 2020 ☆ 📄

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	A	B	C	D	E	F	G	H
1	Common Name	Genus	Species	date seen (emerged if plant)	native	bloom	notes	
2	Bees.	<i>Apis mellifera</i>	<i>Apidae</i>					
3	Squirrels.	<i>Sciurus</i>	<i>Sciurus carolinensis</i>					
4	Tree Sparrows.	<i>Spizelloides Slager & Klicka, 2014</i>	<i>S. arborea</i>					
5	Woodpeckers.	<i>Melanerpes</i>	<i>M. erythrocephalus</i>					
6	Carolina Wrens.	<i>Thryothorus; Vieillot, 1816</i>	<i>T. ludovicianus</i>					
7	European Starlings.	<i>Sturnus</i>	<i>S. vulgaris</i>					
8	White-throated Sparrows.	<i>Zonotrichia</i>	<i>Z. albicollis</i>					
9	Tulips	<i>perennial herbaceous bulbiferous</i>	<i>Tulipa</i>	4-5 wks	no	march, april, or may		
10	Hostas	<i>Hosta</i>	<i>Plantain lilies</i>	March-April -Early May	no			
11	Oblong ladybirds	<i>Hippodamia.</i>	Ladybug	4/1	Inside window			
12	Robin	True thrush	<i>Turdus migratorius</i>	3/30				
13	forsythia	<i>oleaceae</i>	forsythia ovata	around 3/7/20	no	20-Mar	lots of flowers 4/3/20	
14	dandelion							
15	pine tree							
16	true thrush	Turdidae		yes		found in my back yard		
17	Asparagaceae	bell flower	march	yes	march	found in one of my neighbors yard		
18	ant	ant	formicidae	3/31/2020	outside near door			
19	Golden Barrel Cactus	<i>Echinocactus</i>	<i>Echinocactus grusonii</i>	prior to 12/2018	no	no	I have had him for almost 2 years and he has not bloomed yet, is that normal for cactuses?	
20	carrot	<i>Daucus</i>	<i>Daucus carots subsp. sativus</i>	3/27/20	no	no	It took them roughly 1 week to germinate	
21	<i>Ellychnia</i>	<i>corrusca</i>	firefly, black	3/26/2020	inside front storm door			
22	Halyomorpha	halys	stink bug	4/1/20	on the bathroom windowsill			
23								
24	horse	equus	Arabian - American Quarter cross	January 4 202	His name is Dexter, I have been doing horse riding lessons and team practice with him since last year. Because of the corona virus I now only see him once a week and when nobody else is at the barn. I do not own him but he is my favorite!			
25	cat	felis	American shorthair	January 1 202	Her name is Chili, she may not be the sharpest knife in the drawer, but we love her			
26	woodchuck	marmota	monax	3/26/20	It lives in our backyard and has been destroying our garden for over a year. He recently came out of hibernation.			
27	grey squirrel	sciurus	carolinensis	3/28/20	I have seen him several times in our yard, and I know for a fact that it was the same squirrel because it lost its tail. I have no idea how, but it looks closer to a rabbit now.			

Additional Resources for Information on Your Backyard Wildlife

[Byington, Cara Cannon. Misadventures in Suburban Birding. Cool Green Science, The Nature Conservancy blog. April 27, 2020](#)

[Fallon, Sylvia. How Can I Protect Wildlife in My Community? https://www.nrdc.org/stories/how-can-i-protect-wildlife-my-community NRDC. June 18, 2018.](https://www.nrdc.org/stories/how-can-i-protect-wildlife-my-community)

[Hausheer, Justine E. The Hidden History in My Backyard , Cool Green Science. The Nature Conservancy blog. April 6, 2020](#)

[Miller, Matthew L. Cool Facts About Common Backyard Wildlife. Cool Green Science. The Nature Conservancy blog. April 21, 2020.](#)

Montgomery, Sy. *The Wild Out Your Window-Exploring Nature Near at Hand*. Down East Books, Camden, Maine. 2002

[Oakes, Robert and Amer, Yasmin , How Thoreau Helped Make Walden Pond One of the Best Places to Study Climate Change in the U.S. WBUR Radio, July 12, 2017](#)

Tallamy, Douglas W. *Bringing Nature Home-How You Can Sustain Wildlife with Native Plants*. Timber Press, Portland, Oregon. April 2009.

Tallamy, Douglas W. *Nature's Best Hope-A New Approach to Conservation That Starts in Your Yard*. Timber Press, Portland, Oregon. 2019.

Treesnap. <https://scistarter.org/treesnap>. The Treesnap app is a means for participants to record the location and health of particular tree species of interest. Scientists use the collected information to locate candidates for genetic sequencing and breeding programs. University of Tennessee, Knoxville. PROJECT UPDATED April 28, 2020.

Zych, Ariel <https://www.sciencefriday.com/articles/citizen-science-month-science-friday/> April 24, 2020. Ariel Zych is Science Friday's education director. She is a former teacher and scientist who spends her free time making food, watching arthropods, and being outside.