

Citizen Science Resource List

Projects YOU can do with your students!

How do I justify participating in a citizen science project?

They relate well to educational standards:

Embedded Inquiry: Students can develop and explore their own questions or specific interpretations. They could maintain a phenology journal and present their observations to the class. Add complexity for 6th grade through high school inquiry standards.

Interdependence: Directly observe consumer/prey and other relationships outside (birds and insects, insects eating vegetation, etc.)

Biodiversity and Change: Conduct a bioblitz in your schoolyard to give students the chance to identify and classify organisms and observe natural adaptations first hand. They can explore how abiotic factors play a role in a habitat by monitoring weather conditions.

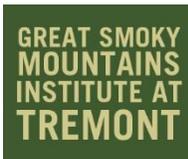
Any number of the nationwide citizen science projects listed below directly relate to standards regarding individuals, populations, communities, and ecosystems.

- A great summary of how to make citizen science a cross curricular project -
Title: 'Citizen Science Can Renew A Child's Love of Nature,' by Mike Mueller
<http://www.education.com/reference/article/citizen-science-childrens-love-nature/>

Citizen Science Resources:

<http://fieldecologyresearchexperience.weebly.com/index.html>

Research-based best practices for field ecology research for environmental education centers - Results of Heather Lumpkin's Master's research - a synthesis of interviews with coordinators of citizen science projects involving 6th-12th graders.



<http://citizenscienceassociation.org/>

Citizen Science Association - A national organization centered on the field of citizen science

<http://www.birds.cornell.edu/citscitoolkit>

Citizen Science Central, a website of Cornell. The Resources tab has links to many scholarly research articles in the field of citizen science. You can search the Projects list for projects around the country (all of Tremont's projects are listed here, with links to our website). The Citizen Science Toolkit provides guidance for setting up a citizen science project.

<http://www.birds.cornell.edu/citsci/>

Cornell Lab of Ornithology - Browse their projects, watch nest cams, etc.

<http://blogs.plos.org/citizensci/2012/12/31/top-citizen-science-projects-of-2012/>

PLOS Blog - Innovative blog about citizen science; interesting articles

<http://www.citsci.org/>

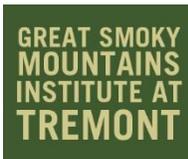
Cit Sci.org - A resource for creating citizen science projects and managing them online. You can create datasheets, analyze data, etc. Has a searchable list of participating projects.

<http://www.citizensciencealliance.org/index.html>

Citizen Science Alliance - Crowd-sourced projects based online; no field work involved; participants catalog, identify, measure, etc. images and data already uploaded to a website.

<http://scistarter.com/>

SciStarter - Search by topic or activity and have students add to existing projects. You can also follow their blog, which includes an article with resources to get students involved in citizen science.



↙ Check these out!! ↘

iNaturalist: It's like Facebook for nature nerds! iNaturalist is a place where you can record what you see in nature, meet other nature lovers, and learn about the natural world. This is the perfect project for a class because kids can take and post photos of their discoveries, even (and especially) if they don't know what they've found. They can ask for help with identification, and naturalists who monitor the site answer questions and identify species. It's interactive! Make a biodiversity project page for your school!

www.inaturalist.org

USA National Phenology Network: The USA National Phenology Network brings together citizen scientists, government agencies, non-profit groups, educators and students of all ages to monitor the impacts of climate change on plants and animals in the United States. The network harnesses the power of people and the Internet to collect and share information, providing researchers with far more data than they could collect alone.

<http://www.usanpn.org/>

USA-NPN Cloned Plants Project: For over 50 years cooperators in the United States and Canada have assisted phenological researchers by reporting event dates for lilac and honeysuckle. Cloned plants (genetically identical individuals) have been employed to help minimize response variations between locations.

<http://www.usanpn.org/lilac>

Project BudBurst: Join thousands of others in gathering valuable environmental and climate change information from across the country. Project BudBurst engages the public in making careful observations of the *phenophases* such as first leafing, first flower, and first fruit ripening of a diversity of trees, shrubs, flowers, and grasses in their local area.

http://www.windows.ucar.edu/citizen_science/budburst

Journey North: Journey North engages citizen scientists in a global study of wildlife migration and seasonal change. K-12 students share their own field observations with classmates across North America. They track the coming of spring through the migration patterns of monarch butterflies, robins, hummingbirds, whooping cranes, gray whales, bald eagles— and other birds and mammals; the budding of plants; changing sunlight, and other natural events. Find migration maps, images, standards-based lesson plans, activities and information to help students make local observations and fit them into a global context.

<https://www.learner.org/jnorth/>

NestWatch: This is a program through the Cornell Lab of Ornithology. NestWatch teaches people about bird breeding biology and engages them in collecting and submitting nest records. Such records include information about nest site location, habitat, species, and number of eggs, young, and fledglings. “Citizen scientists” submit their nest records to our online database where their observations are compiled with those of other participants in a continent-wide effort to better understand and manage the impacts of environmental change on bird populations.

<http://www.nestwatch.org/>

Project FeederWatch: Project FeederWatch is a winter-long survey of birds that visit feeders at backyards, nature centers, community areas, and other locales in North America. FeederWatchers periodically count the birds they see at their feeders from November through early April and send their counts to Project FeederWatch. FeederWatch data help scientists track broadscale movements of winter bird populations and long-term trends in bird distribution and abundance.

<http://www.birds.cornell.edu/pfw>

The Great Backyard Bird Count: The Great Backyard Bird Count is an annual four-day event that engages bird watchers of all ages in counting birds to create a real-time snapshot of where the birds are across the continent. Anyone can participate, from beginning bird watchers to experts. It takes as little as 15 minutes on one day, or you can count for as long as you like each day of the event.

<http://www.birdsource.org/gbbc/>

eBird: A real-time, online checklist program, eBird has revolutionized the way that the birding community reports and accesses information about birds. Launched in 2002 by the Cornell Lab of Ornithology and National Audubon Society, eBird provides rich data sources for basic information on bird abundance and distribution at a variety of spatial and temporal scales.

<http://ebird.org/plone/ebird/about>

eButterfly: A real-time, online checklist and photo storage program, e-Butterfly is providing a new way for the butterfly community to report, organize and access information about butterflies in North America. Launched in 2011, e-Butterfly provides rich data sources for basic information on butterfly abundance, distribution, and phenology at a variety of spatial and temporal scales across North America.

<http://www.e-butterfly.org/#/>

Monarch Watch: Monarch Watch is an educational outreach program based at the University of Kansas that engages citizen scientists in large-scale research projects. This program produces real data that relate to a serious conservation issue. Monarch Watch gets children of all ages involved in science. Our website provides a wealth of information on the biology and conservation of Monarch butterflies and many children use it as a resource for science fair projects or reports. Additionally, we encourage children to showcase their research or school projects on our website and we involve them in real science with the tagging program.

<http://www.monarchwatch.org>

Monarch Larva Monitoring Project: The Monarch Larva Monitoring Project (MLMP) is a citizen science project involving volunteers from across the United States and Canada in monarch research. It was developed by researchers at the University of Minnesota to collect long-term data on larval monarch populations and milkweed habitat. The overarching goal of the project is to better understand how and why monarch populations vary in time and space, with a focus on monarch distribution and abundance during the breeding season in North America.

<http://www.mlmp.org/>

Caterpillars Count! Caterpillars Count! is a project that relies on citizen scientists (you!) to help understand some of the most important organisms in our ecosystems—caterpillars and other insects—by conducting surveys of the plants and trees around them. These insects are an important food source for birds and other wildlife, and they have economic and environmental impacts on our forests and crops. You can help us understand how the abundance of these bugs varies from rural countrysides to major urban areas, and from coast to coast.

<http://caterpillarscount.unc.edu/>

Monarch Lab and Monarch Health: Do you have monarchs near your home or garden? Then sign up to participate in Project MonarchHealth! Project MonarchHealth surveys monarch butterflies for infection by the protozoan parasite *Ophryocystis elektroscirrha* (OE). The survey is easy to do, participation is free, and you receive free sampling materials and instructions!

<http://www.monarchparasites.org/>

<http://www.monarchlab.org/>

Lost Ladybug Project: Across North America ladybug species distribution is changing. Over the past twenty years several native ladybugs that were once very common have become extremely rare. During this same time ladybugs from other places have greatly increased both their numbers and range. Some ladybugs are simply found in new places. This is happening very quickly and we don't know how, or why, or what impact it will have on ladybug diversity or the role that ladybugs play in keeping plant-feeding insect populations low. We're asking you to join us in finding out where all the ladybugs have gone so we can try to prevent more native species from becoming so rare.

<http://www.lostladybug.org>

Project Noah: Project Noah was created to provide people of all ages with a simple, easy-to-use way to share their experiences with wildlife. It is a tool to explore and document wildlife and a platform to harness the power of citizen scientists everywhere. By encouraging your students to share their observations and contribute to Project Noah missions, you not only help students to reconnect with nature, you provide them with real opportunities to make a difference.

www.projectnoah.org

Bumblebee conservation: The Xerces Society is trying to gather information about 5 species of bumble bees that have experienced rapid population declines in the last couple of decades. They are seeking observations and photographs of these bumble bees to gather information and distribute

conservation guidelines to important locations. More information about the species of interest can be found on their website and Facebook page:

<http://www.xerces.org/bumblebees/>

Butterflies and Moths of North America (BAMONA): Butterflies and Moths of North America (BAMONA) is a user-friendly web site and database that shares butterfly and moth species information with the public via dynamic maps, checklists, and species pages. BAMONA data are updated regularly and come from a variety of sources, including citizen scientists. Individuals can get involved by documenting butterflies and moths in their neighborhoods and submitting photographs for review. Collaborating lepidopterists serve as coordinators and oversee quality control. Submitted data are verified, added to the database, and then made available through the web site.

<http://www.butterfliesandmoths.org/>

Citizen Sky: Citizen Sky welcomes everyone to be a citizen scientist. We will guide you through the process of how to observe epsilon Aurigae, how to send us your observations, and then how to see your results, analyze them, and even publish them in a scientific journal!! No previous experience is required. We hope that this project will involve thousands of people all over the world in real, active scientific research.

<http://www.citizensky.org>

Great Worldwide Star Count: This international event encourages everyone to go outside, look skywards after dark, count the stars they see in certain constellations, and report what they see online. This Windows After Dark citizen science event is designed to raise awareness about light pollution and the night sky as well as encourage learning in astronomy.

http://www.windows2universe.org/citizen_science/starcount/

Firefly Watch: The Museum of Science in Boston has teamed up with researchers from Tufts University and Fitchburg State College to track the fate of these amazing insects. With your help, we hope to learn about the geographic distribution of fireflies and their activity during the summer season. Fireflies also may be affected by human-made light and pesticides in lawns, so we hope to also learn more about those effects.

<https://www.mos.org/fireflywatch>

Wildlife Watch: Participate in Wildlife Watch and let us know about the wildlife and plants you observe where you live. Wildlife Watch is a national, nature watching program created for people of all ages. When you record your observations, National Wildlife Federation and our Wildlife Watch partners collect and review your findings so we may keep track of the health and behavior of wildlife and plant species nationwide.

<http://www.nwf.org/wildlifewatch>

The Great Sunflower Project: We know very little about bee activity in home and community gardens and their surrounding environments, but we *are* certain that they are a crucial link in the survival of native habitats and local produce, not to mention our beautiful urban gardens. Our local pollinator populations require our understanding & protection, and to answer that call we need to determine where and when they are at work. With enough citizen scientists collecting data, we can learn much more, much faster, about the current state of bee activity. We would love to have you join us; let's learn about pollinators together!

<http://www.greatsunflower.org>

The Community Collaborative Rain, Hail, and Snow Network: CoCoRaHS is an acronym for the Community Collaborative Rain, Hail and Snow Network. CoCoRaHS is a unique, non-profit, community-based network of volunteers of all ages and backgrounds working together to measure and map precipitation (rain, hail and snow). By using low-cost measurement tools, stressing training and education, and utilizing an interactive Web-site, our aim is to provide the highest quality data for natural resource, education and research applications. We are now in all fifty states.

<http://www.cocorahs.org/>

YardMap: YardMap enables people to map their habitat management and carbon neutral practices in backyards and parks, interact socially, and try out new landscape practices

<http://content.yardmap.org/>