

CITIZEN SCIENCE:

Animal and Nature Observations

Did you know that you and your patrons can help scientists answer questions about human and environmental health? Citizen science enables people from all walks of life to advance scientific research. If you have ever used a bird watching or nature tracking app, you might be a citizen scientist! There are many citizen science projects that are ideal for virtual library programs including animal and nature observation, pet personality surveys, and more.

PROGRAM DESCRIPTION

Activities

Citizen Science groups might already be active in your area, find them and invite them to the library program. Girl Scouts USA are a partner of SciStarter and may be looking for partnerships around citizen science programming in your community.

Don't have the capacity to host a program now? You can promote citizen science through book displays and virtually by adding the [SciStarter widget](#) to your library website.

Host a virtual tutorial event where you guide your patrons through how to participate in a citizen science project.

Host a virtual book club with resources from the [NNLM Reading Club](#) on Citizen Science. The NNLM Reading Club is a selection of "ready-to-use" book titles along with free and downloadable materials designed to help libraries support the health information needs of their communities.

Co-host a virtual event with a researcher who can explain their project and how people can participate. During summer 2020, NNLM and SciStarter cohosted virtual citizen science events across the country. Read about it in [Discover Magazine](#). And check out the [recorded webinars](#) to see how they happened! And visit the [National Library of Medicine page on SciStarter](#) for ongoing opportunities.

Online Citizen Science Projects

Gaming to advance medical research.

- [Stall Catchers](#) - Accelerate Alzheimer's research by playing an online game.
- [Eterna](#) - Design and study complex RNA molecules to help scientists develop RNA-based medicines to combat global diseases.
- [Neureka](#) - Play games and answer questions to improve mental health and dementia research.

MATERIALS

- Tablets or personal devices: Some projects can be completed exclusively online with a computer or mobile device.
- Free account at [scistarter.org](#) to find the right project for your library.
- Virtual platform for online program.
- Tools: Some citizen science projects require specialized tools to make an observation, record data, etc. The [SciStarter Tools database](#) will help you discover and access low-cost tools.

PERSONNEL

- 1-2 library staff.
- Optional: Partner with a local citizen science group or researchers who manage citizen science projects to co-host events.

SPACE

- Online or when possible in a library meeting space.

Online animal citizen science projects.

- [Cat Tracker - Personality Study](#) - Learn about your cat's personality by taking a survey! Taking the Cat Personality Test is easy, the only things you need are an internet connection and about 25 minutes of free time.
- [Snapshot Safari](#) - Classify animals in images online. Snapshot Safari looks to citizen scientists from around the world to identify wildlife caught on camera.
- [FISHstory](#) - Count and identify fish within historic dock photos. People with South Atlantic species fish ID skills are encouraged to participate, however training materials are included in the project to allow for anyone to get involved.
- [C-BARQ and Fe-BARQ](#) - Complete a questionnaire about your dog or cat. The C-BARQ (or Canine Behavioral Assessment and Research Questionnaire) is designed to provide dog owners and professionals with standardized evaluations of canine temperament and behavior. The Fe-BARQ is a new behavioral survey instrument for cat owners.

Outdoor animal and nature observation projects.

- [Cat Tracker](#) - Learn the secret life of your outdoor cat using GPS technology!
- [SquirrelMapper](#) - Report squirrel observations, classify squirrel color, play evolution game, explore data.
- [Project Squirrel](#) - Count squirrels anytime, anywhere, report findings online.
- [QuestaGame](#) - Find plants and animals, photograph, join quests, clans, challenges with free-to-play, outdoor mobile adventure game

RESOURCES

Books

Adult nonfiction

- Cavalier, Darlene. *The Field Guide to Citizen Science — How You Can Contribute to Scientific Research and Make a Difference*. Timber Press. 2020. 978-1604698473.
- [Citizen Science Association book list](#) for citizen science enthusiasts.

Children's fiction

- Bathala, Neeti, Keats Curtis, Jennifer, and Jones, Veronica V. (Illustrator). *Moonlight Crab Count*. Arbordale Publishing, 2017. 9781628559309.
- Forrester, Anna. *Bat Count: A Citizen Science Story*. Arbordale Publishing. 2017. 9781628558944.

Web

- [Resources for Public Libraries](#) from the NNLM includes health information and programming resources, webinars, and funding opportunities.
- [Resources for Crowdsourcing and Citizen Science](#) from the NNLM.
- [SciStarter](#) is a globally acclaimed, online citizen science hub where more than 3,000 projects, searchable by location, topic, age level, etc, have been registered by individual project leaders or imported through partnerships with federal governments, NGOs, and universities.
- [Library and Community Guide to Citizen Science](#) from SciStarter includes tutorials and project examples for libraries and community-based organizations.
- [Zooniverse](#) is a searchable citizen science web portal with links to many citizen science projects.

EVALUATION

[Project Outcome](#) is a free toolkit from the Public Library Association designed to help public libraries understand and share the impact of essential library services and programs by providing simple surveys and an easy-to-use process for measuring and analyzing outcomes.

ANIMAL TEETH STORYTIME!

(Dental Health) – Children’s and Family Program

Promote child dental health with a storytime featuring shark or animal teeth! Scale this program down to a single storytime or consider partnerships to create an oral health fair for kids and families.

PROGRAM DESCRIPTION

Storytime Songs

- Brush your Teeth (adapted from Brush Your Teeth by Raffi Cavoukian)
- “When you wake up in the morning at a quarter to eight
The first thing you do is something great
You brush your teeth ch ch ch ch, ch ch ch ch
You brush your teeth ch ch ch ch, ch ch ch ch
(repeat)
- Brush our Teeth (to the tune of Here We Go Round the Mulberry Bush)
“This is the way we brush our teeth
brush our teeth, brush our teeth
This is the way we brush our teeth
so early in the morning.”
(repeat)

Activities

- Start program with your favorite story about animals with unique teeth.
- Consider adding practices from [sensory storytimes](#) like a visual schedule.
- Explore how different cultures experience tooth loss with *Throw Your Tooth on the Roof: Tooth Traditions from Around the World*.
- Consider including stories about beasts of the oceans with shark titles like *Nugget and Fang* and *If Sharks Disappeared*.
- Select a puppet with large teeth like a shark or walrus. Purchase a giant toothbrush and demonstrate good brushing habits during a storytime song.

MATERIALS

- Storytime materials like books, whiteboard, large toothbrush, puppet with teeth
- Dental Health informational handouts for caregivers
- Art supplies (optional activity)

PERSONNEL

- 1-2 library staff
- Optional: Partner with a local dentist or oral health association

SPACE

- Online or when possible in a library meeting space.

TIP:

Consider using white board art to help children match pictures to words/actions. For example, you could draw a mouth on the whiteboard and erase colored in sections to demonstrate cleaning food and plaque from teeth.

TIP:

Consider offering the songs as guides for how long to brush teeth, miming on your own face or on a puppet. For example: “We’re going to sing our song two times, one for top teeth and one for our bottom teeth”.

- Play the [Mammal Teeth Guessing Game](#) from the American Museum of Natural History. Or make your own by using examples from photos of teeth from humans and animals.
- Offer simple craft using dental coloring pages from the [ADA's Mouth Healthy](#) website.

TIP:

For younger groups, consider using “human or animal”, for older try including more categories, as appropriate.

RESOURCES

Partners

- There are many dental health organizations that provide free information and materials, including toothbrushes and toothpaste.

Children's Nonfiction

- Beeler, Selby and G. Brian Karas. *Throw Your Tooth on the Roof: Tooth Traditions from Around the World*. Houghton Mifflin Harcourt, 2001. 978-0618152384.
- Less, Emma. *Dentists (Real-life Superheroes)*. Amicus Ink, 2018. 978-1681522746.
- Rudko, Che. *Ready, Set, Brush*. SFI Readerlink, 2018. 978-0794440633.
- Seuss, Dr. *The Tooth Book*. Penguin Random House, 1981. 978-0375824920.
- Steig, William. *Doctor De Soto*. Farrar, Straus and Giroux, 1982. 978-0312611897.
- Williams, Lily. *If Sharks Disappeared*. Roaring Book Press, 2017. 978-1626724136.

Children's Fiction

- Dahl, Michael. *Pony Brushes His Teeth*. Picture Window Books. 2010. 978-1404857278.
- Jarvis. *Alan's Big Scary Teeth*. Candlewick Press. 2016 978-0763681203.
- Sauer, Tammi and Michael Slack. *Nugget and Fang*. Turtleback Books, 2015. 978-0606368254.
- Suen, Anastasia. *Loose Tooth*. Puffin Books. 2003. 978-0142500644.
- Ziefert, Harriet and Emily Bolam. *Does a Tiger Go to the Dentist?* Blue Apple Books, 2014. 978-1609054519.

Web

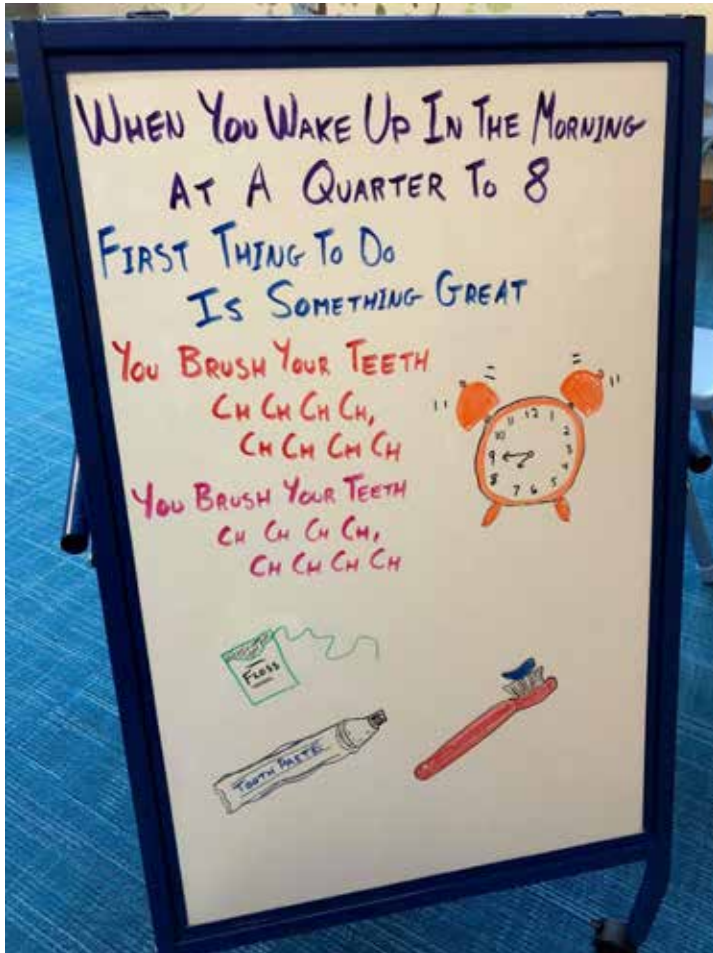
- [Resources for Public Libraries](#) from the NNLM includes health information and programming resources, webinars, and funding opportunities.
- [MedlinePlus: Child dental health](#) – Health information from the National Library of Medicine.
- [American Dental Association: Activities and Resources](#)

Games

- [Toothsavers Brushing Game](#) - Save the fairy tale kingdom with your toothbrush!

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CITIZEN SCIENCE AND ZOONOSIS (Health and Science Literacy) – Adult/Teen Program

Zoonosis is the word scientists use to describe infectious diseases that may be spread to humans which originate in animals. The coronavirus that causes COVID is just one of many human diseases thought to be caused by zoonosis, or a “spillover” event. This program will introduce patrons to the concept of zoonosis, ways it is tracked and studied, and what is being done to prevent or minimize the risks of future spillover events.

PROGRAM DESCRIPTION

Participants will be introduced to the topic of zoonosis, which is the spread of disease from animals to humans. The CDC One Health page (listed below) is an excellent resource to find more information, as well as graphics and flyers. Participants will then be introduced to the SciStarter platform and one or more citizen science projects related to the topic of zoonosis and disease tracking. The following are some recommended projects.

- [Outbreaks Near Me](#) - This is a project of Boston Children’s Hospital and Harvard School of Public Health to track outbreaks of infectious disease through self-reported symptoms. Some of the diseases they are tracking, including COVID and flu, likely have zoonotic origins.
- [Mosquito Byte](#) - This project is sponsored by NCSU to track mosquito activity. Mosquitos are a common animal source or vector for multiple human diseases, including malaria, zika and yellow fever.
- [The Three Mosquiteers](#) - Sponsored by the Laboratory of Vector Ecology and Applied Entomology, this project aims to raise awareness about mosquito-borne diseases.
- [Fight Malaria At Home](#) - This program allows you to donate some of your computer’s work capacity/processing speed, to be used to help researchers looking at possible protein targets for malaria treatments.
- [Open Pandemics](#) - The World Community Grid project, sponsored by IBM, aims to use crowdsourced computing power to tackle pandemics, such as COVID.

MATERIALS

- Selection of recommended books and films
- Device with internet access

PERSONNEL

- 1-2 Staff to set up program space (or virtual space)
- 1-2 Staff to set up passive program display

SPACE

- Program room or outdoor space appropriate to local COVID guidelines
- Virtual program platform such a Zoom, WebEx or Google Meet
- Table, counter top or similar display space

ACTIVITIES

Virtual Options

Citizen Science Webinar - Introduce the concept of zoonosis through research with citizen science with a live webinar or shared streaming video through SciStarter. SciStarter has an [Introduction to Citizen Science](#) tutorial that introduces the who, the what, the how, and the why of citizen science. There are several ongoing projects you and your patrons can get involved in that help track diseases with zoonotic roots or animal vector spread. If possible, partner with a local disease ecologist, infectious disease doctor, or similar expert to share their expertise and answer questions about zoonosis and what human populations can do to help.

Introduce Zoonosis in your book club - [The NNLM Reading Club](#) is a selection of “ready-to-use” book titles along with free and downloadable materials designed to help libraries support the health information needs of their communities. The selections are reflective of national health observances like Mental Health Awareness, LGBTQ Health, Nutrition, Racism and Health, and many others. NNLM Reading Club also includes Public Health titles and information about infectious diseases and vaccination. Each month topics and titles are added along with downloadable resources to facilitate either a book club including the book discussion guide, print & social media promotional materials & corresponding health info pieces.

Passive Program

Create a virtual or in-person display of several of the suggested titles below, or similar titles in your collection along with a QR Code linking patrons to recommended citizen science projects. You might also include flyers or graphics from the CDC One Health resources page ([link below](#)).

Alternate Program Suggestions

Alternative programs might include a discussion with a local veterinarian about the importance of vaccination in limiting the spread of zoonotic infections, a book club featuring one of the suggested titles below, or a film screening of one of the suggested programs below.

RESOURCES

Non-Fiction

- Quammen, David. *Spillover: Animal Infections and the Next Human Pandemic*. W. W. Norton & Company. 2020. 978-0393066807.
- Andiman, Warren. *Animal Viruses and Humans: A Narrow Divide*. Paul Dry Books. 2018. 978-1589881228.
- Quammen, David. *The Chimp and the River: How AIDS Emerged From an African Forest*. W. W. Norton & Company. 2015. 978-0393350845.
- Quammen, David. *Ebola: The Natural and Human History of a Deadly Virus*. W. W. Norton & Company. 2015. 978-0393351552.

- Spinney, Laura. *Pale Rider*. PublicAffairs. 2017. 978-1610397674.
- Murphy, Jim and Alison Blank. *Invincible Microbe: Tuberculosis and the Never-Ending Search for a Cure*. Clarion Books. 2012. 978-0618535743.
- Shah, Sonia. *The Fever: How Malaria Has Ruled Humankind for 500,000 Years*. Picador USA. 2011. 978-0312573010.
- Crosby, Molly Caldwell. *The American Plague: The Untold Story of Yellow Fever, The Epidemic That Shaped Our History*. Berkley. 2007. 978-0425217757.
- Defoe, Daniel. *A Journal of the Plague Year*. Penguin Classics. 2003. 978-0140437850.
- Kelly, John. *The Great Mortality: An Intimate History of the Black Death, the Most Devastating Plague of All Time*. Harper Perennial. 2006. 978-0060006938.

Fiction

- Roberts, Nora. *Year One*. St. Martin's Press. 2017. 978-1250122957.
- King, Stephen. *The Stand*. Anchor. 2011. 978-0307743688.
- Crichton, Michael. *The Andromeda Strain*. Vintage. 2017. 978-1101974490.
- Mandel, Emily St. John. *Station Eleven*. Vintage. 2011. 978-0804172448.
- Serpell, Namwali. *The Old Drift*. Hogarth. 2019. 978-1101907146.
- Wright, Lawrence. *The End of October*. Knopf. 2020. 978-0525658658.
- Brooks, Max. *World War Z: An Oral History of the Zombie War*. Three Rivers Press. 2007. 978-0307346612.

Websites

- [Resources for Public Libraries](#) from the NNLM includes health information and programming resources, webinars, and funding opportunities.
- [NNLM Reading Club on Infectious Diseases](#)
- [SciStarter Library Resources](#)
- [Library and Community Guide to Citizen Science](#)
- [CDC One Health Website](#)
- [CDC One Health Graphics and Flyers](#)
- [CDC National Center for Emerging and Zoonotic Infectious Disease](#)
- [CDC Healthy Pets, Healthy People Resources](#)

Films/TV

- American Experience: *The Forgotten Plague*. PBS. 2015.
- American Experience: *Rachel Carson*. PBS. 2017.
- *Contagion*. 2011.
- *Nova: Surviving Ebola*. PBS. 2014
- *World War Z*. 2013.
- *The Virus Hunters*. National Geographic. 2015.
- *Race Against the Killer Flu*. National Geographic. 2010.

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An exit ticket with 2-3 follow up questions is an easy way to gain feedback following the program. It might be a poll included in a webinar, a ¼ sheet survey in the display area or a tablet on an easel for an in-person program.

Suggested questions:

Do you know more about zoonosis as a result of attending this program?

Do you plan to participate in one of the citizen science programs presented?

Did you learn one way you can help address disease spread?

PET HEALTH AND CARE

– Children’s, teen, or adult audience

Caring for a pet, especially a pet with health issues, is not always easy. Animal rescue organizations and health departments in your area might have pet health education and vaccination programs available.

PROGRAM DESCRIPTION

Virtual and Socially Distant Activities

- Grief over the loss of a beloved pet can be as hard as—or worse than—losing a human loved one. Consider a book club or outside speaker that might offer an outlet for those who miss a pet.
- Partner with an animal shelter to do a virtual adoption meet and greet.
- Play a YES/NO game about what dogs can and cannot eat. Depending on the age group, you might use play food and YES/NO baskets, a felt board with food cutouts, or activity sheets to color.
- Host an “Ask Me Anything” webinar with a local veterinarian.
- Pet and People Health: Many people are more likely to address the health concerns of a pet but not their own health. Local health departments often have initiatives to teach CPR to members of the public. Consider hosting a dual human and pet CPR program like [The Health Pet Project](#).
- Pet vaccination drive with local animal rescue association.

RESOURCES

Partners

- [Find your local health department](#) in the NACCHO directory.
- Find your local [American Heart Association chapter](#).
- Find other local partners in the [NNLM Member Directory](#).

Children’s nonfiction

- Levine, Sarah. *Tooth by Tooth: Comparing Fangs, Tusks, and Chompers*. Millbrook Press. 2016. 978-1467752152.
- Loewen, Nancy. *Good-bye, Jeepers: What to Expect When Your Pet Dies*. Picture Window Books. 2011. 978-1404866805
- McWilliam, Howard and Sandra Markle. *What if You Had Animal Teeth?* Scholastic. 2013. 978-0545484381.
- Rogers, Fred. *When a Pet Dies*. Puffin Books. 1998. 978-0698116665

MATERIALS

- Pet health informational materials from [MedlinePlus](#)
- Highlight titles from your collection on animals and pet health
- Healthy snacks

PERSONNEL

- 1-2 library staff

SPACE

- Online or (when possible) in a library meeting space.

Children's fiction

- Demas, Corinne. *Saying Goodbye to Lulu*. Little, Brown Books for Young Readers. 2009. 978-0316047494
- Harris, Robie H. *Goodbye Mousie*. Aladdin. 2004. 978-0689871344
- Hest, Amy. *My Old Pal, Oscar*. Abrams Books for Young Readers. 2016. 978-1419719011
- Walsh, Barbara. *Sammy in the Sky*. Candlewick. 2011. 978-0763649272

Web

- [Resources for Public Libraries](#) from the NNLM includes health information and programming resources, webinars, and funding opportunities.
- [Medline Plus Health Topics – Pet Health](#) – Health information from the National Library of Medicine.
- [ASPCA Pet Care](#) - Comprehensive tips for pet parents of dogs, cats, and horses.
- [Pet Health program examples on Programming Librarian](#) - ProgrammingLibrarian.org is website of the American Library Association Public Programs Office with resources, connections, and opportunities for programming library staff.

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