Citizen Science at Your Library

October 20, 2023
Welcome!

Pick up 3 post it notes and add your answers to the wall of questions.

What kind of STEM programming do you offer at your library for adults? For youth?

What is one challenge when you consider STEM programming at your library?
Today's Agenda

- Intro to Citizen Science
- Getting Started
- Building Awareness & Interest
- Programming Ideas
- Questions
What is citizen science?

A global movement that enables people from all walks of life to collaborate with scientists by participating in real scientific research.

It’s how people, from youth to seniors, can make an impact on issues they care about!
4 COMMON FEATURES THAT DEFINE CITIZEN SCIENCE:

1. Anyone can participate,
4. Participants use the same protocol so data can be combined and be high quality,
3. Data can help real scientists come to real conclusions and,
4. A wide community of scientists and volunteers work together and share data to which the public, as well as scientists, have access.
Project Squirrel as an example:

1. Anyone can participate as long as tree squirrels are present in the direct environment.

4. Participants use the same protocol so data can be combined and be high quality, a form is used to gather data on the type of squirrel, types of surrounding plants, and location.

3. Data can help real scientists come to real conclusions, this count helps scientists better understand squirrel ecology in urban environments.

4. A wide community of scientists and volunteers work together and share data to which the public, as well as scientists, have access. The map of squirrel observations is publicly available.
Citizen Science Projects

• Bird populations have **declined by 50%**
• Birds are breeding **earlier**
• 50+ types of bacteria **live in your belly button**
• The first flowering of 19 species of plants has moved **9 days earlier** over the past decade
• In one weekend in 2019, citizen scientists accomplished **2,566 research hours, or 3.5 months of lab-equivalent research time**, for an Alzheimer’s research project
Our space knowledge is expanding, we have identified...

- Most of the known comets
- Every single sample of interstellar material
- 100,000s of emperor penguin nests
- Thousands of candidate near-Earth asteroids
- Thousands of brown dwarfs
- Hundreds of exoplanets
- The star-forming regions called “yellowballs”.
- The “Peter Pan” disk phenomenon
- 7 meteorites

- There’s a new auroral phenomenon in the night sky (and the citizen scientists named it Steve!)
Because of public participation in science research, we have rediscovered….

In 2020, a high school student rediscovered a salamander that hadn't been spotted for over 40 years. A post to iNaturalist of the famed “toilet weasel” led to a rediscovery of a species thought to be extinct.
Benefits to Science & Society

Citizen science enables people from all walks of life to actively learn more about the world and address issues they are curious or concerned about.
What is SciStarter?

A globally acclaimed web and mobile site that connects millions of people to thousands of projects, events, and tools. SciStarter hosts field-tested, customizable resources designed for libraries and community-based organizations!

Create a free account at SciStarter.org
Barriers to Participation

For Public: Global demand for increased science literacy and public engagement in science; desire for community; access to specialized instruments and resources

For Scientists: Lack of public awareness of citizen science; need to recruit, train and sustain citizen scientists to accelerate research

For Libraries: Desire for turnkey, adaptable and locally relevant STEM opportunities that align with their capacity and community interest
Join the Network

Join a growing network of libraries and other community-based organizations dedicated to engaging their communities in citizen science managed by Arizona State University, SciStarter and the National Girls Collaborative Project.

Sign-up at scistarter.org/library-network
Network Goals

**Build**
Build capacity of libraries to become community hubs for citizen science

**Support**
Support a community of libraries engaging their users in citizen science

**Broaden**
Broaden participation of diverse communities in citizen science

**Accelerate**
Accelerate and shape scientific research
Getting Started

Network Resources, Training and Planning
**Build Your Knowledge**

### Online, Self-guided Training Tutorials
- Foundations of Citizen Science
- Libraries as Community Hubs for Citizen Science
- Others

*Receive a Digital Badge!*

SciStarter.org/training

### Monthly Live Webinars
- Relevant topics like pollinators, STEM, summer reading
- Speakers with examples of programs in action

SciStarter.org/library-events

### Guides and Turnkey Resources
- Event guides
- Kit building guides
- Promotional materials (bookmarks, rack cards, fliers)
- Facilitator slides for programs

SciStarter.org/library-resources
Prepare Your Staff

Host a Staff Meeting

Participate in citizen science as an icebreaker or team building activity

Encouraging staff to join the Citizen and Community Science Library Network

Promote the Online Training

Read the Library and Community Guide to Citizen Science

SciStarter.org/library
Define Your Program Goals & Community Needs

What do you hope to achieve as a hub for citizen science?

- What audiences are you trying to engage?
- What projects would your community be interested in or benefit from participating in?

What does your community care about?

- Discover trends of interest, follow the local news
- Are patrons concerned about anything?
- Encourage open dialogue and share with each other

Pair and Share: How do you find out/prioritize your community needs or interests related to science?
Identify Your Local Resources

- **Municipal Departments** public works, environmental/air quality, public health agencies, Park rangers

- **Local Educational Institutions** high schools, junior colleges, universities

- **Unique and Local Expertise** beekeepers, Master Naturalists, International Dark Sky

- **Recreational Organizations** outdoor clubs, hiking clubs, amateur astronomy clubs
Building Awareness and Interest with Your Community
Sparking Interest

Book Displays, Inquiry Posters, Rack Cards

Promotional Resources
https://scistarter.org/library-promotional-resources
Host an Introductory Event

- Promote the **Foundations of Citizen Science Tutorial**
  - *Use the free Foundations Tutorial facilitator slides and speaker notes to provide a program*
- Tie a project into **an existing program**
  - *Icebreaker, continuation activity, make and take*
- Find a project that interests your community and meet to do it as a group for hands on experience
  - *MDT, ISeeChange, use as a service opportunities*
- Build a **kit** and have a project overview with staff and community
  - *Use one of ours or make your own!*
Library Kits Supporting Citizen Science

- Measuring Light in the Night
- Exploring Biodiversity
- Observing Pollinators
- ZomBee Hunting
- Monitoring Air Quality
- Mapping Mosquito Habitats
Kit Building Guide Webpages

Build a kit for your Community!

Includes…

● Supply lists
● Free downloadable activity guides, kit labels, bookmarks, rack cards, fliers, and more!
● General promotional resources also available

SciStarter.org/library-build-a-kit
Additional Programming Ideas
**Example Events**

**BioBlitz/CNC**
Use free apps, tablets/phones, and materials to document biodiversity.

- **Location:** Outdoor
- **Prep time:** 30 mins
- **Event time:** 1-2 hours+
- **Age level:** All ages
- **Partners:** Local Beekeepers, Master Gardeners, Girl Scouts

- **Projects:**
  - iNaturalist
  - GLOBE Observer Trees

**Star Party**
Observe the daytime or night sky to observe clouds or measure light pollution.

- **Location:** Outdoor
- **Prep:** 30 mins
- **Event time:** 1-2 hours+
- **Age level:** All ages
- **Partners:** Amateur Astronomers, NASA Night Sky Network

- **Projects:**
  - Globe at Night
  - GLOBE Observe Clouds

**Catch-a-thon**
Play an online game and help speed up research on Alzheimer’s.

- **Location:** Indoor
- **Prep:** 30 mins
- **Event time:** 1-2 hours+
- **Age level:** 13+
- **Partners:** Senior groups

- **Projects:**
  - Stall Catchers
  - Project Sidewalk
Case Study: Show Low, Arizona

Join Us for a Party for Pollinators

Family Fun Event

We invite you for an evening of family fun & education! Learn about our local pollinators and how you can help create a better environment for them with our new Observing Pollinators Citizen Science Kit!

Free Event Is Limited to the First 50 Families to Register

Register in person at Show Low Public Library or by phone at 928-532-4070

Light Dinner Will Be Served

Crafts • Games • Activities • & More!

Friday April 29

2 PM - 5 PM

At Show Low Public Library
Being a Community Hub is what you make of it

Fountain Hills, MCLD

Litchfield Park, MCLD
Being a Community Hub is what you make of it
Being a Community Hub is what you make of it
Being a Community Hub is what you make of it

City Nature Challenge

Citizen Science Expo

Because they need our help

SATURDAY, MARCH 28
10 A.M. - 2 P.M.
CORONADO PUBLIC LIBRARY

- Up to 20 booths from astronomy to zoology
- Featured speakers
- Find out about science happening locally
- Learn how to collect data and help the scientific community
- Confirmed participants include but are not limited to:
Upcoming Webinars & Opportunities

SciStarter.org/library-events
Eclipse and Citizen Science

- Total eclipse on April 8, 2024.
- You can do CS projects before, during and after the eclipse and you don’t need to be in the path of totality!

SciStarter.org/eclipse
City Nature Challenge

- Final Weekend of #CitSciMonth
- April 26th - 29th, 2024

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2023 Totals

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<th></th>
<th>Observations</th>
<th>Species</th>
<th>Participants</th>
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<tr>
<td>Pima County</td>
<td>1,870,763</td>
<td>57,227+</td>
<td>66,394</td>
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<td>Greater Phx Area</td>
<td>4,009</td>
<td>1,041</td>
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Where are our other counties?
Citizen Science Month

- April is Citizen Science Month
- Use it an an opportunity to introduce your community to CS!

SciStarter.org/citizensciencemonth
Take this tiny, 60-second-survey while I answer questions!

Not into QR codes? Not a problem:
https://scistarter.org/go/AZLA23

Questions?

Email: LibraryNetwork@scistarter.org
Thank you!

Join the National Citizen and Community Science Library Network at SciStarter.org/library-network