



# 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!

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## 4 COMMON FEATURES THAT DEFINE CITIZEN SCIENCE:

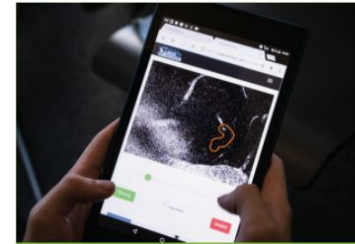
1. Anyone can participate,
4. Participants use the same protocol so data can be combined and be high quality,
3. Data can help real scientists come to real conclusions and,
4. A wide community of scientists and volunteers work together and share data to which the public, as well as scientists, have access.

# 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.
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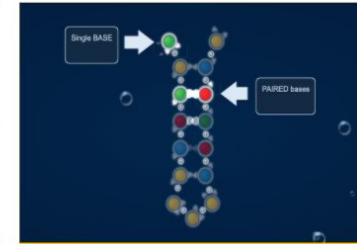
# Citizen Science Projects

- 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



## 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.



## GLOBE AT NIGHT

Help gather light pollution data.



## FLU NEAR YOU

Spread the word. Not the flu.



## ISEECHANGE

Document change in weather and climate in your community.



# 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!)





iNaturalist

@inaturalist · Follow

Never know what you might find in the...bathroom! The Colombian Weasel is so rare that there were \*zero\* live photos known until 2018 when sultana posted it to iNaturalist! The rediscovery led to a publication and [#toiletweasel](#) in 2019. Details: [inaturalist.org/posts/20273-th...](https://inaturalist.org/posts/20273-th...)



10:46 AM · Sep 25, 2020



## Participation in science covered....

A post to iNaturalist of the famed “toilet weasel” led to a rediscovery of a species thought to be extinct



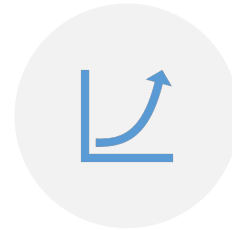
BROADENS THE SCOPE OF WHO CAN CONTRIBUTE TO SCIENCE



ENABLES PEOPLE TO ENGAGE IN DATA COLLECTION, ANALYSIS, AND INTERPRETATION



ENABLES PEOPLE TO LEARN ABOUT THE NATURE OF SCIENCE AND SCIENTIFIC REASONING



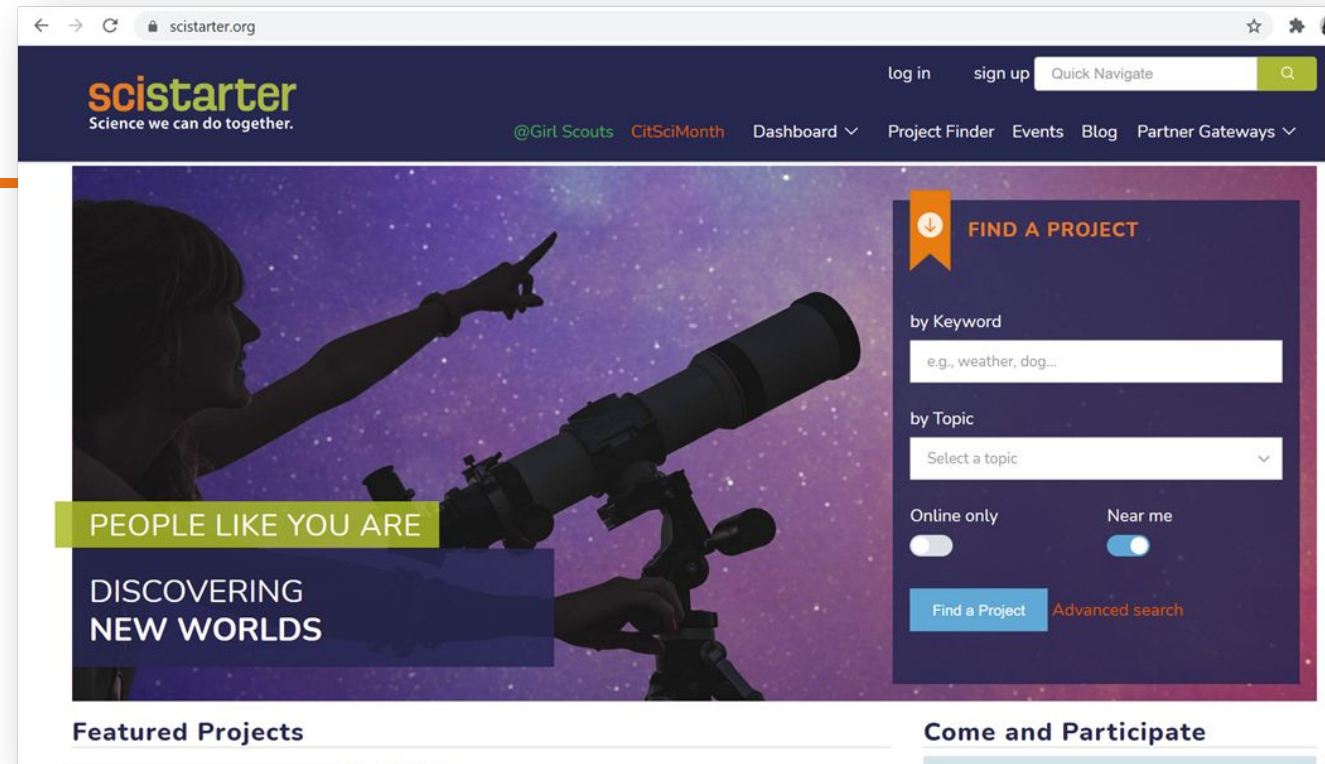
ACCELERATES IMPORTANT RESEARCH AND DISCOVERY

## 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](https://www.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

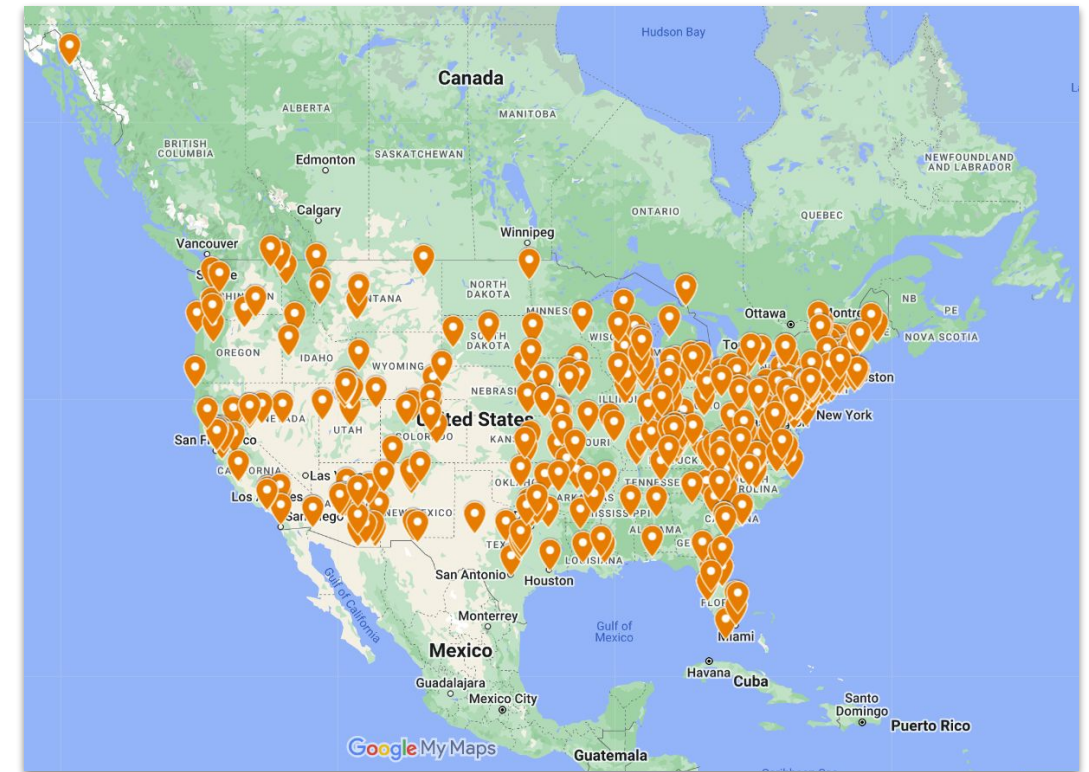
**For Libraries:** Desire for turnkey, adaptable and locally relevant STEM opportunities that align with their capacity and community interest



# 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](https://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



## THE NATIONAL CITIZEN & COMMUNITY SCIENCE LIBRARY NETWORK



# 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](https://SciStarter.org/training)**

## Monthly Live Webinars

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

**[SciStarter.org/library-events](https://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](https://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](https://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

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# Sparking Interest

Book Displays, Inquiry Posters, Rack Cards

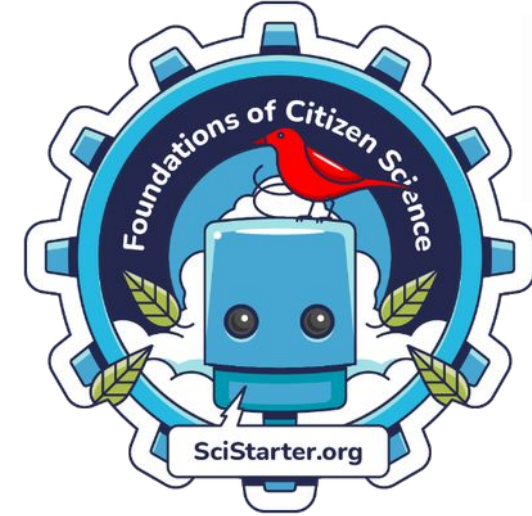
CHECK IT OUT!  
**CITIZEN SCIENCE**  
AT YOUR LIBRARY



RESOURCES FOR YOUR LIBRARY!



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



**BUILD YOUR OWN!**

### EXPLORING BIODIVERSITY

Document and identify plants and animals around you. Great for all locations and ages.

[DOWNLOAD KIT BUILDING GUIDE](#)




**BUILD YOUR OWN!**

### OBSERVING POLLINATORS

Identify and count pollinators. Good for all ages. Usable anywhere plants are flowering.

[DOWNLOAD KIT BUILDING GUIDE](#)



**BUILD YOUR OWN!**

### MEASURING LIGHT IN THE NIGHT

Help gather light pollution data. Great for astronomy enthusiasts of all ages.

[DOWNLOAD KIT BUILDING GUIDE](#)



**BUILD YOUR OWN!**

### MONITORING AIR QUALITY

Capture measurements using an AirBeam sensor.

[COMING SOON](#)



**BUILD YOUR OWN!**

### ZOMBEE HUNTING

Track ZomBee Flies in your region. Good for locations with ZomBee Fly infestation.

[DOWNLOAD KIT BUILDING GUIDE](#)



**BUILD YOUR OWN!**

### MAPPING MOSQUITO HABITATS

Add your local observations to NASA satellite data!

[COMING SOON](#)

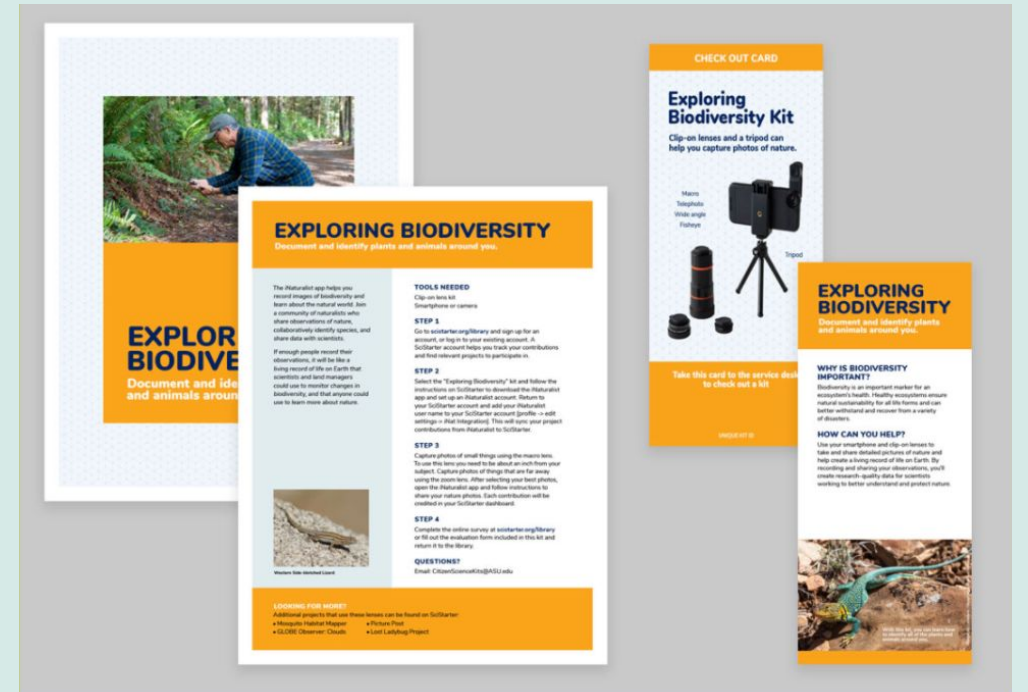


# Kit Building Guide Webpages

## 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](https://SciStarter.org/library-build-a-kit)



# Additional Programming Ideas

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# 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!**

**LIGHT DINNER WILL BE SERVED**

CRAFTS ♦ GAMES ♦ ACTIVITIES ♦ & MORE!

**FRIDAY APRIL 29**  
 2 P M - 5 P M  
 AT SHOW LOW PUBLIC LIBRARY

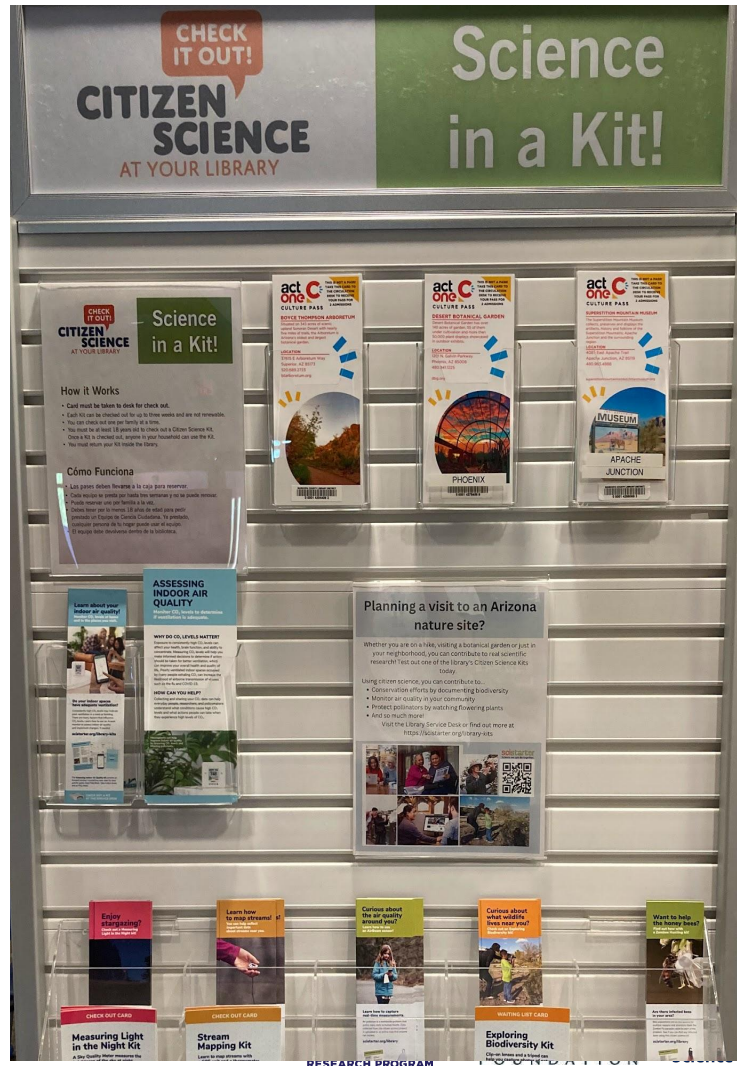
Register in person at Show Low Public Library or by phone at 928-532-4070





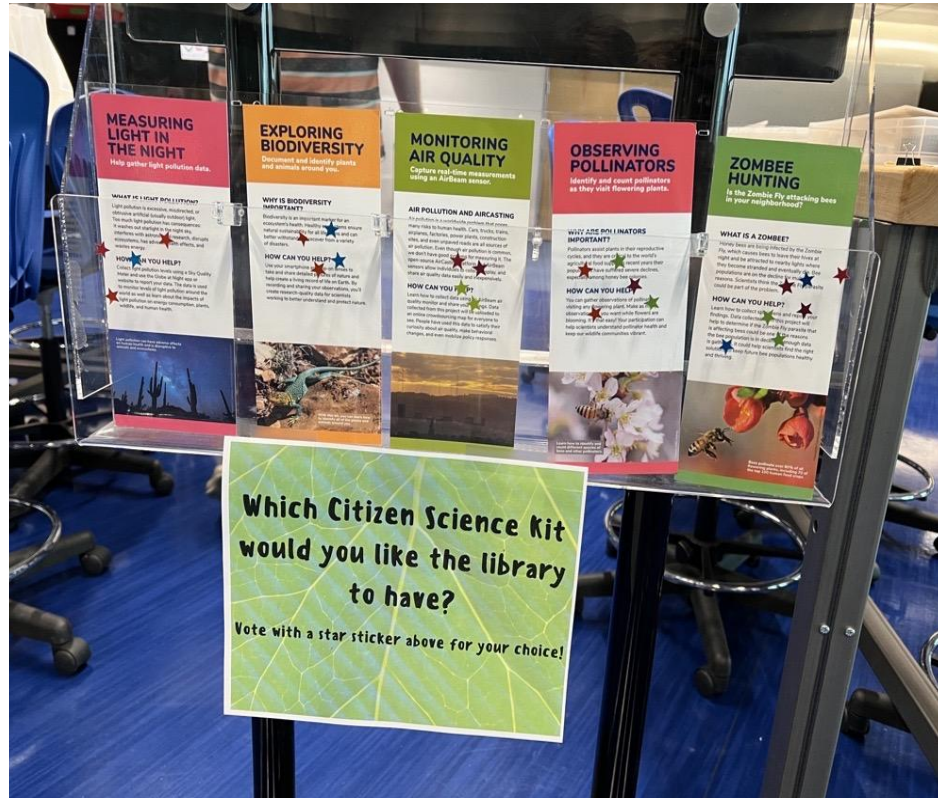
# Being a Community Hub is *what you make of it*

Fountain Hills, MCLD



Litchfield Park, MCLD

# Being a Community Hub is what you make of it



Burton Barr  
Central Library,  
Phx



# Being a Community Hub is *what you make of it*



## 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:



# Being a Community Hub is *what you make of it*



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# Upcoming Webinars & Opportunities

[SciStarter.org/library-events](https://SciStarter.org/library-events)

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# 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!
- Join **Boosting your Eclipse Programming with Citizen Science** webinar on Nov. 8, 2023.



[SciStarter.org/eclipse](https://SciStarter.org/eclipse)

# City Nature Challenge

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




**Sign-up as a City Organizer for 2025**  
 Sign-ups for the 2024 City Nature Challenge are closed. Planning for 2025 will begin in September of 2024. Please sign up here if you'd like to help organize your city to participate in the 2025 CNC.

Become a city organizer 




**Take Part Yourself**  
 You can participate by yourself, with your family, or even as part of a group.

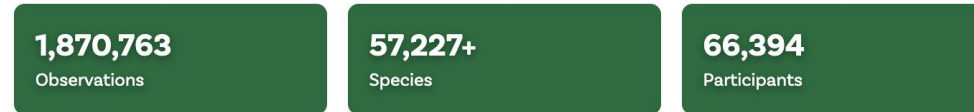
Become a CNC Participant 



**Take Part as a Class**  
 Engage students in community science and nature exploration by using the activities in our Education Toolkit.

Use our Education Toolkit 

## 2023 Totals



**Pima County**  
 4,009 Observations  
 891 Species  
 292 People

**Greater Phx Area**  
 7,570 Observations  
 1,041 Species  
 380 People

Where are our other counties?

# Citizen Science Month

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- April is Citizen Science Month
- Use it as an opportunity to introduce your community to CS!
- Join **Planning for Citizen Science Month** webinar on Dec. 13, 2023.



[SciStarter.org/citizensciencemonth](https://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](mailto:LibraryNetwork@scistarter.org)

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# Thank you!

Join the National Citizen and Community Science Library Network at [SciStarter.org/library-network](https://SciStarter.org/library-network)