Citizen Science is public participation in scientific research in collaboration with scientists in community-driven research or global investigations. Citizen Science provides a platform for UC 4-H youth to be engaged in their community and participate in scientific research. As a citizen scientist, youth actively participate at the local level in global scientific research. Citizen Science includes:

- asking questions
- formulating a hypothesis
- collecting and reporting data
- interpreting the results and asking more questions
- reporting the results to the community

### Starting Out

**Beginner**

- Identify an area of interest. Find an existing citizen science project that matches this interest.
- Participate in a citizen science event or project.
- Share what you have learned with community.
- Some ideas for citizen science projects:
  - The Great Sunflower Project ([greatsunflower.org](http://greatsunflower.org)).
  - The Great Bird Count ([gbbc.birdcount.org](http://gbbc.birdcount.org)).
  - Ant Picnic ([studentsdiscover.org](http://studentsdiscover.org)).

### Learning More

**Intermediate**

- Identify needs, and choose or design questions for the study. Find an existing project that matches these questions.
- Learn about the data collection process, management of sampling, and communication with other participants.
- Communicate results with a (4-H) presentation. Increase community awareness of the project.

### Exploring Depth

**Advanced**

- Identify an issue of concern that has not been addressed, and work with scientist to develop a study.
- Identify needs, and gather information and resources.
- Develop explanations and possible alternatives.
- Design data collection methods, and collect and analyze data/samples, draw conclusions, and ask new questions.
- Communicate results with different audiences.

The activities above are ideas to inspire further project development. This is not a complete list.

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**4-H THRIVE**

**Help youth:**

**Light Their Spark**

A spark is something youth are passionate about; it really fires them up and gives them joy and energy. Help youth find how this project excites them.

**Flex Their Brain**

The brain grows stronger when we try new things and master new skills. Encourage youth effort and persistence to help them reach higher levels of success.

**Reach Their Goals**

Help youth use the GPS system to achieve their goals.

- **Goal Selection:** Choose one meaningful, realistic, and demanding goal.
- **Pursue Strategies:** Create a step-by-step plan to make daily choices that support your goal.
- **Shift Gears:** Change strategies if you’re having difficulties reaching your goal. Seek help from others. What are youth going to do when things get in their way?

**Reflect**

Ask project members how they can use their passion for this project to be more confident, competent, and caring. Discuss ways they can use their skills to make a contribution in the community, improve their character, or establish connections.
Expand Your Experiences!

**Civic Engagement**
- Make owl or bat boxes to donate to local farmers to help encourage nesting in the area.
- Use data from your citizen science project to present to local lawmakers to improve living conditions for your community.

**Healthy Living**
- Participate in health-related citizen science projects like measuring the vitamin C in food or monitoring the health of local streams, oceans, and lakes.
- Walk and collect air quality data.

**Science, Technology, Engineering, and Mathematics**

**Leadership**
- Research different citizen science programs and activities, and select one that can be done by your club. Organize and lead this project.
- Organize a citizen science day event for your club or county.

**College and Career Readiness**
- Collaborate with a local university to create a citizen science project.
- Intern with a beekeeper to learn about pollinators and the role they play in food production.
- Join a citizen science project working with a biotech laboratory.

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**Connections & Events**

**Presentation Days** – Share what you’ve learned with others through a presentation.

**Field Days** – At these events, 4-H members may participate in a variety of contests related to their project area.

Contact your UC Cooperative Extension office to determine additional opportunities available, such as a field day.

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**Curriculum**


**4-H Record Book**

4-H Record Books give members an opportunity to record events and reflect on their experiences. For each project, members document their experiences, learning, and development.

4-H Record Books also teach members record management skills and encourage them to set goals and develop a plan to meet those goals.

To access the 4-H Record Book online, visit [http://ucanr.edu/orb/](http://ucanr.edu/orb/)

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**Resources**

- SciStarter [https://scistarter.com/](https://scistarter.com/)
- Honey Bee Challenge Kit [https://shop4-h.org/products/honey-bee-challenge-kit](https://shop4-h.org/products/honey-bee-challenge-kit)

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**University of California** Agriculture and Natural Resources

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