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 your community.
- Some ideas for citizen science projects:
  - The Great Sunflower Project (greatsunflower.org).
  - The Great Bird Count (gbbc.birdcount.org).
  - Ant Picnic (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 a 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.
**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.

### 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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**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.

**Curriculum**

- Cornell University, Citizen Science Central Toolkit [http://www.birds.cornell.edu/citiscitoolkit/toolkit/man](http://www.birds.cornell.edu/citiscitoolkit/toolkit mannual)

**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.

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**University of California** Agriculture and Natural Resources

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UC ANR 4-H Youth Development Program - [http://4h.ucanr.edu](http://4h.ucanr.edu)
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Website: http://ucanr.edu/sites/anrstaff/Diversity/Affirmative_Action/.

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