

# 4-H Agri-Science in the City

## Cincinnati, Mid-Term Report

### 2017-2018



**THE OHIO STATE UNIVERSITY**

COLLEGE OF FOOD, AGRICULTURAL,  
AND ENVIRONMENTAL SCIENCES

4-H Agri-Science in the City

4210 Dane Ave. Cincinnati, OH 45223

# Letter from the Program Manager

Recently, I was confronted with a challenging situation. I had to choose whether to express my offence or sit quietly and wait for the situation to pass. I chose to use my voice and began to engage in a conversation about the value of representation in the telling of one's history. I have always been aware of this importance, but I have developed a much more intimate relationship with the value of representation and voice through my work with Cincinnati Public Schools.

The students and teachers 4-H Agri-Science in the City works with are amazing, engaging, successful and inspiring in ways that can't even be described. While only half of the 2017-2018 school year is behind us, the students have already demonstrated a strong commitment to confidence, focus, purpose and honesty. The students have engaged in countless transformative experiences and have shown that, with hard work, anything is possible.

In September, the students were provided field experiences by Cincinnati Parks, then the opportunity to hatch chicks by Hamilton County Extension and finally experiments about states of matter. The students were exposed to new concepts and demonstrated an understanding far greater than anticipated. As the next semester begins the students will be provided with a new challenge to engage in self-directed learning in cooperation with their classroom teachers.

It continues to be a privilege to work with the students and teachers in Cincinnati Public Schools and I look forward to a successful rest of the school year and a happy new year!

-Tony Staubach  
Program Manager, 4-H Youth Development

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A student handles a freshly hatched chick.



Left: A student shoots a rocket.

Right: Teachers study engineering.



Right: Students pass around a ball filled with the ingredient to make ice cream.



## Row Cover

Children in urban environments don't often encounter large-scale agricultural practices. So, when you introduce a tool designed for a farm into a school garden, students are unable to make connections between the product and its use. When you ask children to describe word row cover, you get some interesting answers. Because their gardens don't grow in traditional rows (typically they grow in small beds), their comprehension of the word and the use of the material provides them

with some creative thinking. Students commented that the row cover looked like the lining under the bottom of a chair. While I personally found this response creative and intelligent, they were intrigued to learn that the real purpose of the fabric is to provide some shelter to the growing plants in the harsh fall and spring months.

Through support from the Civic Garden Center of Greater Cincinnati, students at Pleasant Hill planted and covered three beds with row

cover. The experience was eye-opening and helped the students think more intentionally about the environment and how humans interact with the natural world. The students drew a connection to the water cycle and to the role the sun and clouds play in regulating Earth's temperature.

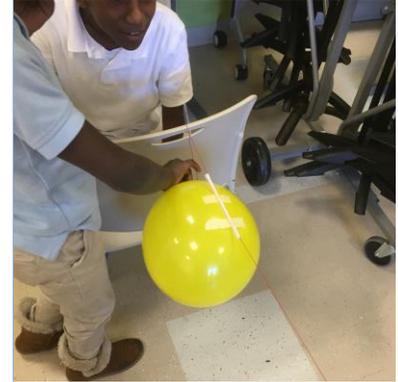
The hard work performed by the young students is nothing in comparison to the valuable lessons learned in the garden.



*Students work with our partner from the Civic Garden Center to cover garden beds with row cover.*



## What's on the Horizon for 4-H Agri-Science in the City



Students can learn by reading, watching or doing. You cannot downplay the value of learning to acquire knowledge independently, but learning in groups and experiential learning are equally as valuable. Students who engage in project based learning develop a greater appreciation of fellow students from different social, ethnic and cultural backgrounds, [1] seek higher-level instructional feedback and develop higher level questioning strategies. Teachers learn to identify how to integrate content into more subject areas, better facilitate student discussion, and assist in student self-assessment.[2] Additionally, students perform better on assessments as measured by pre and post-tests.[3]

Project based learning is the foundational approach of all 4-H programs. 4-H Agri-Science in the City is offered during the school day to the students at Pleasant Hill through a cooperative agreement between Ohio State University Extension and Cincinnati Public Schools. Capitalizing on the Vision 2020 approach and the Environmental Science designation, students at PHA have access to hundreds of self-directed projects that they can complete for our annual judging competition in the spring.

Project judging is a new component to 4-H Agri-Science in the City. In January students will have an opportunity to select a project to complete in cooperation with the classroom teacher. In May students will attend a 4-H Expo at their school and participate in a project judging. One of the greatest benefits of 4-H is an appreciation for self-directed education. Students find that spark within themselves to be the best that they can and produce the best project they can.

[1] (Kaldi, 2011)

[2] (Miro, 2011)

[3] (Christopher J. Harris, 2015)

[4] (4-H, 2017)

## Science Tastes Good

Students in grades K-6 are expected to develop a strong understanding for the five senses and the three states of matter. While it can be easy to dismiss these as simple concepts, the reality is that for a child it can be confusing to understand what is and isn't solid, or how to investigate the world safely. The students in Cincinnati Public Schools have shown an unremitting drive to understand these concepts through scientific investigation and inquiry.

As the semester came to an end 4-H Agri-Science in the City had provided ample opportunities to explore the world through sight, smell, sound and touch, but not too much to investigate through taste. To celebrate a successful semester and to use the final sense in exploring the world, the students worked in groups to make ice cream. This project provided an opportunity to use the sense of taste, but also to further understand solids, liquids and gasses. The students watched in amazement as the liquid ingredients turned into a solid.

The students at all ages were able to accurately explain that temperature and pressure play a large role in the composition of matter and the how states of matter change. Second grade students were able to connect the experiment to the water cycle and develop a deeper understanding of how water changes from a liquid to a gas and back into a liquid and then solid.



# Annual Program Numbers

Ongoing 4-H Program Sites (All sites are Cincinnati Public Schools):

Pleasant Hill Academy, College Hill, Cincinnati, OH  
Rothenberg Preparatory Academy, Over-the-Rhine, Cincinnati, OH  
Silverton Paideia Academy, Silverton, Cincinnati, OH

Additional Program Sites:

Cincinnati Parks, Laboiteaux Woods and Nature Next Door, College Hill, Cincinnati, OH: STEM Camp  
John P. Parker Elementary School, Madisonville, OH: 4-H Classroom Programming

Highlighted Curriculum and Projects Conducted

**Go Plants-** Five-week, five-lesson unit focus on a specific part of the plant each week—seeds, roots, stems, leaves, flowers. Designed to be taught in 60 minutes with the potential to expand to 120 minutes. Digging Deeper and Going Beyond activities are conducted.

**Environment 101-** Designed by the Program Manager, Curriculum takes students on a journey to find food and clean water, to building a flashlight and find shelter on an uncharted island. Students engage in a variety of one week projects.

**Rockets Away-** Study the science of rocketry through a variety of hands-on experiments for all ages. Members conclude this project by building and launching 2-liter bottle water rockets.

**Wired Up-** Modified by the Program Manager students build mini electric circuits and experiment with electrical conductivity of various resources by using the Makey-Makey device.

**Chick Quest-** A Science Alive 4-H School Enrichment program that challenges youth to use science, technology, engineering, and math skills to investigate the life cycle of an embryonic chicken egg.

Special Events:

Chick Quest Training: 7 Teachers Attended  
Cincinnati Public School Science Teacher PD: 56 Teachers Attended

Grants:

Youth Service America: \$1,000 for Global Youth Service Day  
Ohio 4-H Foundation: \$6,500 for Hands-On, Heads-Up Field Experiences

Formalized and Professional Partnerships:

Rothenberg Rooftop School Garden Board: Chair, Governance Committee  
Environmental Alliance for Leadership and Interconnection: Board Member  
Cincinnati Parks: STEM Camp Programming  
Cincinnati Public Schools: Consultant  
Gamble Montessori: High School Agriculture Advisory Committee  
Youth Service America & Mott Foundation: Global Youth Service Day Partner  
Taking Root: Arboretum Development (at Pleasant Hill)  
Hamilton County Parks: Programming Partner  
Civic Garden Center of Greater Cincinnati: Programming Partner  
Ohio 4-H Foundation: Hands-On, Heads-Up programming.

Number of Youth served:

Approximately: 624

Number of hours of instruction:

Approximately: 206

4-H Youth Served in Clubs:

37

Youth Served, School Enrichment:

561

Average hours of 4-H Instruction received per student:

7.5

Total Incidents of students served:

4,383

## Acknowledgements:

*Cincinnati Public Schools  
Silverton Paideia Academy  
Youth Service America  
Cincinnati Parks*

*Pleasant Hill Academy  
Rothenberg Rooftop School Garden  
Imani Family Center  
Ohio 4-H Foundation*

*Rothenberg Preparatory Academy  
Civic Garden Center of Greater Cincinnati  
EAli  
National Forestry Service*



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