



## NACAA: Search for Excellence in 4-H Programming

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**Award Title:** *Agri-science Career Pathway Foster Life Skill Development via 4-H Embryology*

### Abstract:

The purpose of the RVA 4-H Embryology program was to educate urban youth and foster the development of quality life skills and character development via the animal science career pathway. Richmond Public Schools services over 25,000 youth from varying socioeconomic backgrounds that are limited in their agri-science knowledge. RVA 4-H Embryology correlates with the Virginia Standards of Learning LS.1-LS.13(VA SOLs) with life science implementation creating a target audience of grades 3<sup>rd</sup>-8<sup>th</sup>. Educators registered their classes to receive an embryology kit inclusive of an incubator, eggs, poultry life cycle chart, incubator temperature chart, and embryology journal. Participants received weekly educational poultry lessons where they learned about the poultry anatomy, poultry products and uses, state poultry industries, and engaged in various egg-speriments to learn about the scientific method. In the midst of COVID19, a virtual RVA 4-H Embryology component was offered that serviced approximately 5,019 youth at 16 schools, and 27 classrooms in Richmond, VA. 25 adult volunteers took the lead on this project to aide in the hatching of 263 chicks. The superintendent and other school board officials were informed of this virtual option created to meet Richmond Public Schools Performance Based Assessments (PBA) requirements for all students. Students from Broad Rock Elementary School were featured on the Richmond Public Schools homepage at <https://t.e2ma.net/click/fujd2f/3c2uyw/nefs3hb>. Over the course of 2017-2020, the RVA 4-H Embryology program has reached approximately 9,752 youth and hatched over 990 chicks. The program has grown and adapted to offer more poultry animal science-based learning opportunities and accommodate ESL learners by offering programming materials in Spanish. Evaluation data is noted below.

Students participated in weekly quizzes with the following results:

- 92% of participants understand that chickens can serve a dual purpose for meat and egg production.
- 68% of participants were able to identify the poultry facilities in Virginia.
- 91% of participants gained a better understand of agriculture industry careers in relation to the poultry industry.

Teacher Survey Results:

- 85% of teachers observed knowledge increase on select agriculture topics.
- 96% of teachers really enjoyed the program and would like to participate again in 2021 with more student resources.



## **Objectives:**

The purpose of the RVA 4-H Embryology program was to educate urban youth and foster the development of quality life skills and character development via the animal science career pathway. Richmond Public Schools services over 25,000 youth from varying socioeconomic backgrounds that are limited in their agri-science knowledge. RVA 4-H Embryology correlates with the Virginia Standards of Learning LS.1-LS.13(VA SOLs) with life science implementation creating a target audience of grades 3rd-8th. The goal of this program is to increase urban agriculture education amongst youth gradually by 15% annually.

## **Educational Objectives:**

The RVA 4-H Embryology program was developed to provide youth an opportunity to develop quality life skills and character development traits via the animal science career pathway. Richmond Public School teachers, counselors, administrators, and fellow positive youth development partnering agencies, noticed an interest in agri-science among urban youth. Richmond Public Schools services over 25,000 youth that ascend from varying socioeconomic backgrounds. RVA 4-H Embryology correlates with the Virginia Standards of Learning LS.1-LS.13(VA SOLs) with life science implementation starting at 2nd grade. Utilizing this information, implementing agri-science via RVA 4-H Embryology program was accomplished. By introducing urban youth to significant opportunities in the field of agriculture, their career and lifestyle choices are increased and they understand that they have more options outside of their “norm”. Agriculture has changed greatly over the years, and identifying avenues of education to display to youth affords them an opportunity to understand the multibillion-dollar food, fiber, and commodities industry.

## **Program Activities & Teaching Methods:**

Teachers selected weekly lesson appointments for their class during the embryology hatching cycle of 21 days. Poultry lessons lasted for one hour and were designed to build upon the developmental embryo stages of the chicks and educate youth about poultry products and their uses.

- Lesson 1: What is Embryology overview, chicken breeds, poultry careers, parts of the chicken, poultry facilities in VA, and two eggsperiments (Rubber Eggs & Egg Geodes)
- Lesson 2: Candling, one eggsperiment (Fertile or Infertile), scientific method, poultry bingo (Spanish and English cards)
- Lesson 3: Hatch week, chicken needs, care and handling, chick gender, program youth survey

As we worked through each lesson, time was allotted on the back end for debriefing sessions and Embryology Journal work completion.

## **Impacts & Results:**

From 2017-2020 the RVA 4-H Embryology program results are noted below:

Number of Youth Enrolled: 9752

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Number of Adult Volunteers Associated with Program: 61

Numbers of Schools Enrolled: 28

Number of Chicks Hatched: 990

Overall Hatch Rate: 75% over a 3-year span

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### **Evaluation:**

Program impact was measured by teacher/student surveys from both early spring and late spring sessions. Each year teachers are required to return evaluations to secure their spot for the next year's program and information collected from the surveys helps improve the program for the following year. Teachers have requested more hands-on sessions for students and that was delivered for 2020 prior to COVID19. Journal completions from students and one on one interviews indicated that youth were gaining knowledge from the detailed lessons. Youth, teachers, and administrators participated in our poultry lessons where informative dialogue had taken place around the poultry industry. This process helped me identify techniques and methods to enhance the program for coming years as I work to develop a statewide curriculum that is SOL based and can be adapted for use across school districts.