4-H Science in Urban Communities
4-H Science in Urban Communities Promising Practices

TRAINING COLLABORATING STAFF AND VOLUNTEERS TO DELIVER HIGH QUALITY SCIENCE PROGRAMMING

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TRENTON, NEW JERSEY
HOW WE DID IT

• 4-H professionals nominated by SPL and science liaisons
• Each self-identified strengths in content areas
• Provided description, promising practices, and challenges in each of top 5 content areas
• Compiled info for each content area
• Conference calls in each content area
• Writing and review
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1. PROGRAM DESIGN
2. ENTREPRENEURIAL
3. PARTNER
4. BUILD CAPACITY
5. TELL THEIR STORY
SECTION 1: 4-H SCIENCE CORE PRINCIPLES

- 4-H Science Program Design – 4-H Science Checklist
- Inquiry Based Learning Approaches
- Providing Youth Authentic Opportunities to Practice and Share Science Abilities
- Training Others to Deliver Science Programs
SECTION 2: PARTNERSHIPS

• Afterschool Providers
• Summer Program Providers
• City Government & City Parks and Recreation
• Universities & Campus-Based Scientists
• Science Centers & Museums
• State Level Practices to Advance Urban Programming
SECTION 3: STAFFING, RECOGNITION, MARKETING

- Content Rich Volunteers
- AmeriCorps Members
- Teenagers as Teachers
- Recognizing Youth & Showcasing Efforts
- Marketing & Branding 4-H Science in Urban Communities
Eighteen 4-H Youth Development professionals from across the country contributed to the development of this promising practices guide for 4-H Science in Urban Communities as part of a National 4-H initiative funded by the Noyce Foundation. The guide includes promising practices, case studies, and suggested resources in each of 15 content areas - all with a focus on expanding the quality and quantity of out-of-school science programming.

View the Guide
Download PDF versions
Training Others to Deliver High Quality Science Programming

Introduction

It is quintessential that the most underappreciated component of high quality 4-H Science programming is staff and volunteer training. Program planners and frontline staff usually have high hopes for program success, but are often disappointed when outcomes do not match expectations. The culprit may reside in the program's design, but is it lack of adequate preparation for those embarking upon program delivery? This can be easily remedied by developing training materials with the same care and attention to detail that goes into the program planning process.

Perhaps the most important reason to develop a high quality training program is to ensure fidelity of implementation. A fidelity of implementation is a measure of how well program activities correspond to the total model as outlined by the program planner (or other stakeholder). Is it easy for educators to deliver the program? Is it easy for participants to make progress? Is there a clear pathway for staff development? Often, fidelity of implementation becomes the most important aspect of a 4-H program because it is the manner in which success occurs. If a program is not delivered in a consistent manner across various staff and audiences, both at the event level and when several people are responsible for program delivery, the shared diversity of potential facilitators (e.g., 4-H colleagues, parent volunteers, staff, contracts, etc.) can cause misunderstandings, memories, collaborating differentiated and similar staff, community volunteers, etc. Virtually guaranteeing there will be differences in implementation.

The key, therefore, is to provide training that will help program staff and volunteers implement current, relevant, developmentally appropriate science programs in a similar manner across facilitators, audiences, and venues. In the service of fidelity of implementation, it is important to mention that one must train does NOT work. To illustrate, one written training does not work. It is critically important to fidelity of implementation, as well as youth outcomes, that a training program provide the continuous, ongoing support program staff, volunteers and youth need for success.

The purpose of this chapter is to detail promising practices for training others to deliver high quality science programming. There are, however, a few training practices worth emphasizing at this point:

1. Make it fun—future facilitators will model what they see.
2. Use an experiential, inquiry-based approach—future facilitators will model what they see.
3. Limit the use of scientific terminology—future facilitators will model what they see.
4. Focus on science process—future facilitators will model what they see.

Promising Practices

The promising practices for Training Others to Deliver High Quality Science Programming are articulated into three categories: (1) Program Planning – Professional Development Opportunities, (2) Program Delivery – Professional Development Opportunities, and (3) Supporting and Recognizing Program Staff and Volunteers.
• Introduction
• 4-H Science Program Design – 4-H Science Checklist
• Providing Youth Authentic Opportunities to Practice & Share Science Abilities
• **Training Others to Deliver Quality Science Programs**
• Partnering with Afterschool Providers
• Staffing with Teenagers & Teens as Cross-age Teachers
PD CONSIDERATIONS

• 4-H Science Program Design (Experiential, Inquiry, 4-H Science Abilities, Essential Elements of 4-H)
• Fidelity of Implementation
• 4-H colleagues/peers, associate staff, contracted staff, content rich volunteers, teenagers, collaborating afterschool and summer staff, community volunteers, etc.
• One-shot training does not work!
PD CONSIDERATIONS

Fear Factor

Modeling

Materials Kits & Curricula

Ongoing Training/Support

4-H Science in Urban Communities – Training Staff & Volunteers
PD CONSIDERATIONS

Make it fun!

Future facilitators will do what they see and do!
PD CONSIDERATIONS

Use an experiential, inquiry based approach!
Future facilitators will do what they see and do!
PD CONSIDERATIONS

Limit the use of scientific terminology!
Future facilitators will do what they see and do!
PD CONSIDERATIONS

Focus on science processes!

Future facilitators will do what they see and do!
PD CONSIDERATIONS

Fear Factor
Modeling
Materials Kits & Curricula
Ongoing Training/Support
4-H Youth Experiences in Science
4-H On the Wild Side
4-H Water Wizards

TRAINING STAFF AND VOLUNTEERS
CASE STUDY

Marianne Bird
4-H Youth Development Advisor
University of California - Davis
SACRAMENTO, CALIFORNIA
Program Overview:

4-H Youth Experiences in Science (YES)

- Teen led; work in teams with adult coach
- Weekly science lessons in after school programs
- YES curriculum for youth K-3
- Goals:
  - enjoyment of science
  - exploration and discovery
  - meaningful service for teens

4-H Science in Urban Communities – Training Staff & Volunteers
TRAINING:
4-H YOUTH EXPERIENCES IN SCIENCE (YES)

- 10-hour session for teens and coaches (Friday evening and all day Saturday)
- Utilizes teens in training team
- Content includes
  - Science processes for K-3 youth
  - Working with children
  - Model YES lesson
  - Practice planning and delivering lessons
PROGRAM OVERVIEW:
4-H ON THE WILD SIDE

- Teen planned and led
- Weekend-long environmental education program held at camp (two sessions)
- Serves youth grades 4-6 from schools in lower-income communities
Program Overview: 4-H On the Wild Side

• Goals for participants
  – Increased knowledge of natural world
  – Enthusiasm for nature
  – A fun, positive experience

• Goals for teen staff
  – Understanding of SET Abilities
  – Skills and confidence in planning and delivery
  – Feeling as though they’ve contributed
TRAINING:
4-H ON THE WILD SIDE

• Monthly meetings Feb-May
  – overview, roles, responsibilities
  – select and plan activities
  – 4-H SET Abilities
  – teambuilding/youth-adult partnership

• Weekend retreat at camp
  – practice session
  – working with children
PROGRAM OVERVIEW:
4-H WATER WIZARDS

• Led by after school staff
• 12-session project delivered weekly in after school sites
• Curriculum for grades 4-6
• Goals:
  – Understanding water info and issues
  – Exploration and experimentation
  – Sense of bettering the community
  – Increase staff confidence in science program delivery
TRAINING:
4-H WATER WIZARDS

• Three 2.5 hour evening sessions for program staff

• Content includes
  – Science as inquiry
  – Doing lessons in curriculum
  – Distribution of materials
  – Evaluation and reflection
Those we teach often...

- Tend to “instruct” rather than “facilitate”
- Lack background and confidence in science
- Do what they see modeled
- Can be excellent teachers
Observations and Learnings

In training others...
• Have participants do the activities they will facilitate
• Model what you want to see
• Reinforce that it’s okay not to know
• Connect over time
• Instill a sense of importance and trust
4-H in the Corridor STEM Initiative Training Sessions

TRAINING STAFF AND VOLUNTEERS
CASE STUDY

Janet Martin
Urban 4-H Youth Specialist
Iowa State University
IOWA CITY, IOWA
CORRIDOR STEM INITIATIVE

Cedar Rapids/Iowa City technology corridor
“Out of School” committee
High Quality Science Programming
Fun
EXPERIENTIAL, INQUIRY BASED
LIMITED USE OF SCIENTIFIC TERMINOLOGY

4-H SCIENCE IN URBAN COMMUNITIES – TRAINING STAFF & VOLUNTEERS
FOCUS ON SCIENCE PROCESSES

4-H SCIENCE IN URBAN COMMUNITIES – TRAINING STAFF & VOLUNTEERS
PROGRAMS

Engineering is Elementary©
The University of Iowa
College of Engineering
K-12 Outreach Coordinator
STAFF DEVELOPMENT

Take Flight with the Iowa Children’s Museum

February 23, 2010 • 6:00-8:00 pm
The Iowa Children’s Museum
(At the Coral Ridge Mall)

Workshop Includes:
- Free Pizza Dinner
- Hands-on flight activities for after-school clubs
- Investigate the principles of flight
- Explore the flight exhibit at the museum
- Receive a full of flight science activities to use with students
- Participating programs will receive a free admission for one field trip to the ICM for their student group

Take Flight
Soar into science with your after-school program

Registration Deadline: February 15, 2010

4-H SCIENCE IN URBAN COMMUNITIES – TRAINING STAFF & VOLUNTEERS
PARTNERS

VAST (Van Allen Science Teaching) Center,
Grant Wood Area Education Agency, Cedar Rapids
The Iowa Children’s Museum

Launch into a world of serious fun.

4-H Science in Urban Communities – Training Staff & Volunteers
Brought to you by 4-H

Through the generous support of

Noyce Foundation