Providing Science Professional Development for Early Childhood Teachers

May 16, 2017

Collaborative for Early Science Learning

- 6 museums across the country
- Delivering
  - Webinar series
  - Online tool kit
  - Conference session workshops

This project was made possible by the Institute of Museum and Library Services

INSTITUTE of Museum and Library SERVICES

CESL
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Series Overview

Series of three webinars to provide tools for museum professionals to start, expand, or improve early childhood teacher professional development

- May 9th – Building and Sustaining Partnerships with Head Start
- Today – Providing Science Professional Development for Early Childhood Teachers
- May 23rd – Engaging Head Start Families in their Children's Learning

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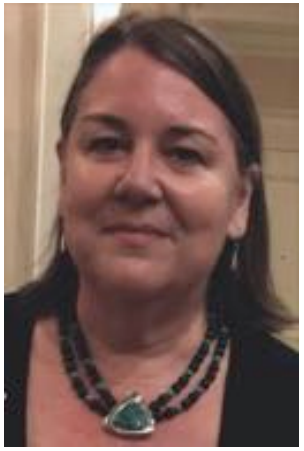
Presenters

Lauren Van Derzee (Sciencenter, Ithaca NY)

Miriam Krause (Maryland Science Center, Baltimore MD)

Cheryl Juárez (Frost Science, Miami FL)

Vicki Starcevic (Turtle Bay Exploration Park, Redding CA)



Webinar Objectives

You will leave with:

- An understanding of the importance of incorporating science in early childhood classrooms
- Examples of museum-based professional development plans
- **Resources** you can use

Tell us about your experience poll

Why Science Professional Development?

- **Science is developmentally valuable for young children**
- Many teachers are uncomfortable with science
- Museums have resources and knowledge

Air Activity

- Pick 2 or 3 objects on your desk.
- Predict which object you can move by blowing on them.
- Play with different angles or blowing harder or softer.

Process Skills Poll

Science Process Skills

Observing

Measuring

Communicating

Categorizing

Predicting

Experimenting

Drawing conclusions

Peep Video Poll

In the chat box share:

- How are the teachers in the video helping children develop science process skills?

Components of Professional Development

- Sign-in
- Snacks
- **Ice breaker**
- Introductions
- Review workshop goals

Components of Professional Development

- Hands-on activity
- Walk through activities with large, small group discussions
- Evaluation
- **Distribute materials, training resources, and certificates**

Case Studies: Catering PD to your teachers

- Frequency of workshops during the year
- Length of workshops
- Content/activities
- Number of participants
- Funding
- Other

Frost Science

- Content / Activities
  - **Early Childhood Hands-On Science** (ECHOS) PD model allows participants to learn about preschool science pedagogy, try out lessons and activities, ask questions, network with other teachers.
  - Each workshop introduces 2-3 ECHOS curriculum units: key concepts & lessons

Frost Science

- Number of participants
  - 33 teachers and 33 teacher assistants= 66!
- Frequency of workshops
  - 4 workshops per year
- Length of workshops
  - 3-hour workshops,
    on Saturdays or PD days
- Funding
  - W.K. Kellogg Foundation

Frost Science

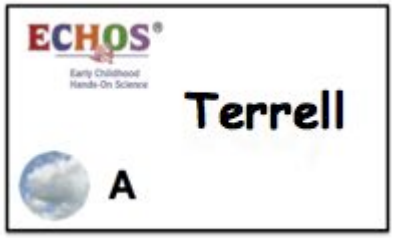
- Blend of structures
  - Whole group: present key concepts, share implementation challenges and strategies
  - Small groups: **hands-on station rotations**

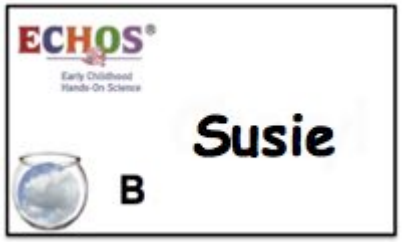
Frost Science

- Station Rotations

Frost Science

- Fishbowl Strategy
  - In this example, participants with the nametags pictured to the right will do the following at Station #1
    - Susie will be a lesson participant in the fishbowl (sitting at the table.)
    - Terrell will be an observer outside of the fishbowl
    - At Station #2, Susie and Terrell will switch roles





Maryland Science Center

- Frequency of workshops
  - Single workshop, not a series
- Length of workshops
  - 3 hour workshops; generally in evenings or PD days
  - Workshops are Maryland State Department of Education approved for 3 clock hours of PD
- Content / Activities
  - **MSC developed from many resources**

Maryland Science Center

- Number of participants
  - 20-40 teachers, include assistant teachers & education coordinators
- Funding
  - Head Start Partnership, including workshops, is grant funded
  - Workshops for other groups are fee-for-service

Maryland Science Center

- Other
  - Head Start teachers also receive PD during classroom visits by MSC staff - model best practice of EC science
  - Online advertising through state EC training database
  - Offsite

Maryland Science Center

- **Icebreakers**
  - Hands or minds on activity at the beginning of the workshop
  - Set the tone
  - Allow participants to connect

Who's Cooking?

This person likes to cook at home.	This person models healthy eating to the children in their class.	This person has introduced fruits of vegetables to children.	This person has food allergies.
This person has taken a cooking class.	This person likes to garden at home.	This person likes to make healthy foods.	This person has baked bread from scratch.
This person reads books about cooking with their children.	This person talks with the children about nutrition.	This person likes to try new recipes.	This person has changed recipes to accommodate food allergies.
This person likes to bake at home.	This person has done a cooking activity in their classroom.	This person grows herbs or vegetables with children at school.	This person likes to eat fruits and vegetables.
This person likes to try new foods.	This person reads books about gardening with their children.	This person grows fruit or vegetables at home.	This person has picked fruits or vegetables at a farm.

Turtle Bay Exploration Park

- Content / Activities
  - **GEMS (Great Explorations in Math & Science) guides are used for workshop**
  - Presenter will model activities for the teachers
  - Small and Large group discussions with hands on activities
  - End of workshop with reflections and Professional Growth Certificate
- Frequency of workshops
  - Offered twice per year, some returning teachers, some new, stand alone workshop
- Length of workshops
  - 4 hours

Turtle Bay Exploration Park

- Evaluation
  - Open ended
- Number of teachers
  - Max 40 teachers, includes site supervisors, lead teachers and assistant teachers
- Funding
  - Began as grant funded, some costs written into contract
  - Small cost
- Other
  - Lending Library

GEMS EDUCATION

Sciencenter

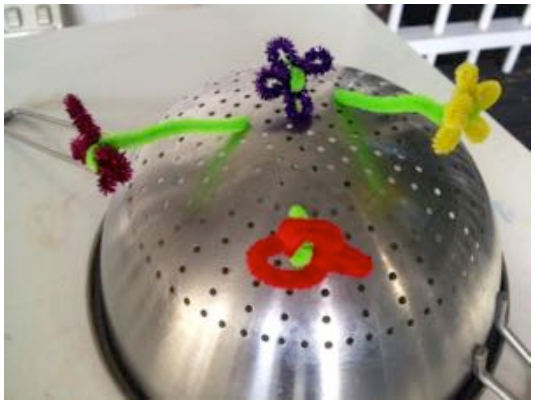
- Frequency of workshops
  - Once a month 9 times per year
  - 2 year partnership
  - Funding from IMLS Science From the Start, donors, Tompkins Community Action
- Length of workshops
  - 1.5hrs

Sciencenter

- Number of teachers
  - Approximately 25
- Teachers teaching each other

Sciencenter

- Content / Activities
  - 2-4 lessons at each workshop
  - Choosing activities using **Early Childhood Hands-On Science, Marvelous Exploration through Science and Stories, and Peep and the Big Wide World**
  - Provide PD for teachers working
    - in a classroom with 0-3
    - in a classroom with 3-5
    - in children's homes
- Open ended, inquiry based activities



Sciencenter

- Bees
- Blocks

Resources

Museumtools.org

Resources

RESOURCES

Engage. Educate. Empower.

Families, teachers and other professionals are invited to use and share our hands-on activities guides and professional materials. The Sciencenter will continuously add relevant information to this page.

KIDS & FAMILIES

- Chemistry Activities

EDUCATORS

- Field Trips Supplemental Activities
- Chemistry Activity Lesson Plans

COLLABORATIVE FOR EARLY SCIENCE LEARNING

Resources to support museums partnering with local Head Start programs to provide teacher professional development and family engagement focusing on early childhood science.

- Launch a Collaboration
- Working with Head Start Teachers
- Working with Head Start Families

COLLABORATIVE FOR EARLY SCIENCE LEARNING

Resources to support museums partnering with local Head Start programs to provide teacher professional development and family engagement focusing on early childhood science.

Launch a Collaboration

Working with Head Start Teachers

Resources to organize and lead Head Start teacher professional development.

KEY COMPONENTS OF PROFESSIONAL DEVELOPMENT FOR HEAD START TEACHERS

- Workshop Schedule
- Icebreakers
- Guide to Engaging Teachers
- Workshop Evaluation Methods
- Professional Development Checklist

CURRICULA

- Recommended Curricula

CLASSROOM ACTIVITY GUIDES

- Observing
- Predicting
- Measuring
- Exploring
- Using Tools
- Problem Solving
- Categorizing

EARLY HEAD START ADAPTATIONS

- Bubble Wrap
- Ice

Webinar Objectives

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Questions

Thank you for joining us

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Stay tuned for…

- May 23rd – Engaging Head Start Families in their Children's Learning

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