

# Office of Head Start Early Childhood Science National Webcast Series

## Discovering Science

### Webcast #4:

***Bringing it All Together With Intentional  
Teaching in Effective Environments***

# Discovering Science Series Highlights

## Webcast 1

### Let's Do Science!

- What science looks like in the early childhood classroom
- Creating quality learning opportunities
- Fostering children's curiosity
- Building their foundational knowledge about the world
- Developing basic scientific thinking skills

# Discovering Science Series Highlights

## Webcast 2

### **Look What I Know. See What I Can Do.**

- The development of science process skills from birth to five

## Webcast 3

### **Language and Literacy through Science**

- Ways teachers and parents can foster development across domains through science experiences

# Discovering Science: Webcast #4

## Bringing it All Together With Intentional Teaching in Effective Environments

- How to create environments to foster science skills and understandings

# www.eclkc.ohs.acf.hhs.gov



U.S. Department of Health and Human Services  
Administration for Children & Families

[ACF Home](#) | [Services](#) | [Working with ACF](#) | [Policy/Planning](#) | [About ACF](#) | [ACF News](#) | [HHS Home](#)

Search:

[Questions?](#) | [Privacy](#) | [Site Index](#) | [Contact Us](#) | [Download Reader](#) | [Print](#)

[ECLKC Home](#) | [Early Childhood Development & Health](#) | [Education and Early Childhood Development](#) | [Early Childhood Development](#)

[Print](#) | [Email](#) | [Suggestions](#)



Have a question?  
Search

ECLKC  Current Location

[Login](#) | [Registration](#)

Early Childhood Development & Health

Disabilities

Education and Early Childhood Development

Assessing

Creating Environments

English Language Learners and Dual Language Acquisition

Focusing on Child Development

Individualizing

Involving Families and Parents

Management and Staff Support

Planning and Curriculum

Health

Mental Health

Early Head Start (EHS)

ECLKC Calendar

Images

Myles Test

Research

Review Folder

What's New

For Parents

Dual Language Learners (DLL) and Their Families

Family and Community Partnerships

Program Design & Management

Professional Development

Resources

## What's New



Science Webcast #1: Let's Do Science  
[Read more >](#)

- Science Webcast #1: Let's do Science
- Science Webcast #2: Look What I Know. See What I can do!
- Science Webcast #3: Language and Literacy Through Science
- Science Webcast #4: Creating an Environment for Science

## Early Childhood Development Topics



**Assessing**  
Locate information for understanding children's ongoing progress and child outcomes.



**Planning & Curriculum**  
Learn about the Goals, Experiences, Roles, Materials, and Sound child development & Standards (GERMSS) that make your curriculum healthy.



**Focusing on Child Development**  
Get ideas on how to create learning experiences for infants, toddlers, and preschool children.



**Involving Parents & Families**  
Find resources that discuss center-based and home-based options, home culture, diversity and dual language learners.



**Individualizing**  
Learn to understand individualization for all infants, toddlers, and preschoolers.



**Creating Environments**  
Locate resources that describe daily routines, materials, equipment, and how to plan and arrange spaces.

## Featured Topics

**Math and Science Resources for Teaching Teams Working with Infants, Toddlers, and Preschoolers**

Explore strategies and experiences that promote children's development in math and science.



**A Head Start on Picturing America**

View experiences that focus on vocabulary, book reading, and child outcomes in the context of the artworks.



**Steps to Success for Early Literacy Mentor Coaches in Head Start and Early Head Start**

Discover resources and strategies to support the development of strong, effective early literacy mentor-coaching skills and systems.



## Tools and Resources

Head Start Leaders Guide to Positive Child Outcomes [PDF, 1.82MB]

Head Start Child Outcomes Framework

Super Things Parents and Caregivers Can Do

A Checklist for Early Childhood Curriculum

Creating a Learning Environment for Young Children

Steps to Success: Decision Maker Guide

## Education Links

- National Institute for Literacy
- National Institute for Early Education Research
- Early Head Start National Resource Center
- National Head Start Family Literacy Center
- National Child Care Information and Technical Assistance Center
- National Early Childhood Technical Assistance Center— National &



# Today's Webcast will Answer the Following Questions:

1. What can I do to create an environment that inspires children to ask questions?
2. How can I become more aware of children's questions?
3. How do I decide which of children's science questions to explore?

# Today's Webcast will Answer the Following Questions.

4. What kinds of tools or materials are most helpful in supporting children's inquiry?
5. How can we help families engage in children's science learning?
6. What can I do in terms of professional development to become more skilled at supporting children's scientific inquiry?

# Discovering Science

What can I do to create an environment that inspires children to ask questions?

# Attitudes and Dispositions Key to Supportive Learning Environment for Science

- 1. All children can successfully experience and learn science.**

# Discovering Science



# Discovering Science



# Discovering Science



# Discovering Science



# Discovering Science



# Attitudes and Dispositions Key to Supportive Learning Environment for Science

1. All children can successfully experience and learn science.
2. **Teachers are curious and motivated to learn new things.**

# Attitudes and Dispositions Key to Supportive Learning Environment for Science

1. All children can successfully experience and learn science.
2. Teachers are curious and motivated to learn new things.
3. **The classroom atmosphere supports taking intellectual risks.**

# Discovering Science



# Discovering Science



# Discovering Science

How can I become more aware of children's questions?

# Parts of a Learning Story

## Narrative

*“What...”*

## Reflection

*“So what...”*



## Opportunities and Possibilities

*“Now what...”*

# Parts of a Learning Story

## Narrative

*Describes the context of the learning*

- What a child does and says
- Focus only on the positive

# Parts of a Learning Story

## Reflection

*An analysis of what the child was doing*

- What is this trying to make sense of?
- What strategies are used?
- What is the significance of what I saw?

# Parts of a Learning Story

## Opportunities and Possibilities

*Focuses on what adults, teachers, and parents can do*

- to make this learning deeper and more complex
- to provide support to the children to achieve their goals.

# An Example of a Learning Story

Tom Drummond

North Seattle Community College

With thanks to Margaret Carr and  
Wendy Lee

# Josie Drips Down a Hill





Josie had been painting a while when I saw her make a hill by pushing the paper toward the paint tray.



I had never seen anyone do this before, so I began to take pictures. Josie was closely watching the paint.



Josie touched the brush to the painting at the top of the hill. A drip slowly ran down the hill making a blue line.



Josie filled her brush again and added more blue paint at the top of the slope in the very same place.



Then she added paint to the pink area on top of the hill.



Then she added paint to the pink area on top of the hill.



This second drop of paint began to slide down hill through the pink area. The first drip line was now all the way at the bottom.



Josie pushed the paper towards the paint tray and made the hill steeper. The drip was going almost straight down now.



She added more paint to the top.



Josie watched intently as the drip slowly made its way to the bottom of the hill.



### ***What it means:***

Josie, you discovered how to make paint draw a line by sliding down a hill. You concentrated on how it moved. Not only were you a painter, today you were a scientist. You did an experiment. You watched the effect of the hill on the drip that you caused. That careful looking is how scientists discover how things work.

You wondered about something and figured it out.



## ***Opportunities and Possibilities***

Josie seems to have a disposition to wonder and be intrigued with the physical properties of paint that is worth exploring in greater detail. We can bring out the easels tomorrow with thick paint and water that she can mix. Eye droppers may help, too.

We will want to show these drip lines to the other children, for it may spark their interest, too. Then a group of children might have some ideas of what to try next.

# Discovering Science

How do I decide which of children's science questions to explore further?

# Selecting Topics to Investigate

**The topic is interesting to the child  
AND the teachers.**

# Selecting Topics to Investigate

**The topic can be:**

- **explored deeply and over time.**
- **experienced directly.**
- **connected with “Big Science Ideas”.**

# Discovering Science



# Discovering Science



# Selecting Topics to Investigate

What is the potential to connect  
with “Big  Ideas”?

# Discovering Science



# MESS

## MESS components include:

Background Information

Materials List

Core Experiences

- ✓ Aim
- ✓ Science Concept
- ✓ Vocabulary
- ✓ Approach
- ✓ Science Center
- ✓ Integrated Experiences

Take-Home Experience

Recommended Books

Head Start Domains and Indicators  
from the Child Outcomes Framework



Teacher's Guide



# Resources used by You—the Viewers

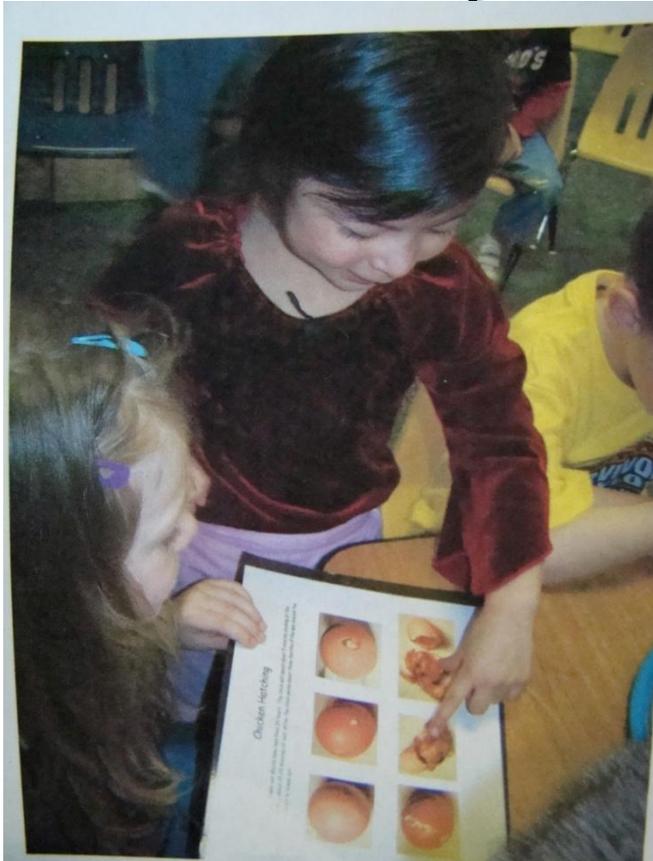
- **A Head Start on Science**
- **A local science curriculum (Stafford Schools, SC)**
- **Creative Curriculum Study Starters**
- **Preschool Pathways to Science**
- **Project Approach Website**
- **ScienceStart!**
- **Young Scientist Series**

# Discovering Science

**What kinds of tools or materials are most helpful in supporting children's inquiry?**

# Materials to support children's science learning

- Books and photographs



# Materials to support children's science learning

- Books and photographs
- Take advantage of the natural world.

# Take advantage of the natural world.



# Take advantage of the natural world.



# Take advantage of the natural world.



# Take advantage of the natural world.



# Take advantage of the natural world.



# Materials to support children's science learning

- Books and photographs
- Take advantage of the natural world.
- **Create collections for and with children.**

# Create collections for and with children



# Create collections for and with children



# Create collections for and with children



# Create collections for and with children



# Create collections for and with children



# Materials to support children's science learning

- Books and photographs
- Take advantage of the natural world.
- Create collections for and with children.
- **Use high quality science tools.**

# Materials to support children's science learning



# Materials to support children's science learning

- Books and photographs
- Take advantage of the natural world.
- Create collections for and with children.
- Use high quality science tools.
- **Use recycled materials.**

# Materials to support children's science learning

- Books and photographs
- Take advantage of the natural world.
- Create collections for and with children.
- Use high quality science tools.
- Use recycled materials.

# Materials to support children's science learning

- Books and photographs
- Take advantage of the natural world.
- Create collections for and with children.
- Use high quality science tools.
- Use recycled materials.
- **Use digital a camera, color printer, or camcorder.**

# Uses for Digital Cameras and Camcorders



# Uses for Digital Cameras and Camcorders



# Uses for Digital Cameras and Camcorders

- **Document investigations**
- **Support conversations with children**
- **Improve teaching**
- **Document children's progress**
- **Communicate with families**

# Discovering Science

**How can we help families engage  
in children's science learning?**

# Josie Drips Story

## ***Parent's voice:***

“Josie you are amazing. I see you do this kind of close looking many times. Now you can see yourself doing it, too.”

“It was a joy to read this story to Josie.”  
We read it over again and again.”

# Josie Drips Story

## ***Parent's voice:***

“I never would have paid any attention to those horizontal lines at the bottom of her painting without seeing the pictures of her absolute concentration in making them.”

“Thank you, teachers, for stopping to look at this precious person we love.”

# Home-school-work



# Home-school-work



# Home-school-work

## Things We Sit On

bicycle

rocking  
chair

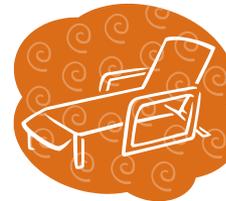
sofa  
couch

wheel  
chair

chaise  
lounge

toilet

shopping  
cart



# Discovering Science

What can I do for professional development to become more skilled at supporting children's scientific inquiry?

# Resources

- The Head Start Leaders Guide to Positive Child Outcomes
- The Head Start Mentoring Guide, *Putting the Pro in Protégé*
- *Steps to Success-Decision Making Guide*
- State Early Learning Standards
- Department of Education early education website

# Resources (continued)

- CLASS
- SOLAR

3-minute break

# The Head Start Act of 2007

The Head Start ACT of 2007 requires that:

- “information from the assessment of teachers is inform professional development plans to lead to improved teacher effectiveness”
- Each Head Start teacher shall attend not less than 15 clock hours of professional development per year

# The Head Start Act of 2007

The Head Start ACT of 2007 requires that:

- Professional development needs to be high quality, sustained, intensive, and classroom focused

# The Head Start Act of 2007

The Head Start ACT of 2007 defines ***professional development*** as high-quality activities to improve the knowledge and skills of Head Start teachers and staff and to provision of services and instructions.

# The Head Start Act 2007

**Professional Development Plans-** Each Head Start agency and program shall create, in consultation with each employee, a professional development plan for all full-time employees.



Have a question?  
Search

ECLKC  Current Location

[Login](#) | [Registration](#)

Early Childhood Development & Health

Disabilities

**Education and Early Childhood Development**

Assessing

Creating Environments

English Language Learners and Dual Language Acquisition

Focusing on Child Development

Individualizing

Involving Families and Parents

Management and Staff Support

Planning and Curriculum

Health

Mental Health

Early Head Start (EHS)

ECLKC Calendar

Images

Myles Test

Research

Review Folder

What's New

For Parents

Dual Language Learners (DLL) and Their Families

Family and Community Partnerships

Program Design & Management

Professional Development

Resources

### What's New



Science Webcast #1: Let's Do Science  
[Read more >](#)

- Science Webcast #1: Let's do Science
- Science Webcast #2: Look What I Know. See What I can do!
- Science Webcast #3: Language and Literacy Through Science
- Science Webcast #4: Creating an Environment for Science

### Early Childhood Development Topics



**Assessing**  
Locate information for understanding children's ongoing progress and child outcomes.



**Planning & Curriculum**  
Learn about the Goals, Experiences, Roles, Materials, and Sound child development & Standards (GERMSS) that make your curriculum healthy.



**Focusing on Child Development**  
Get ideas on how to create learning experiences for infants, toddlers, and preschool children.



**Involving Parents & Families**  
Find resources that discuss center-based and home-based options, home culture, diversity and dual language learners.



**Individualizing**  
Learn to understand individualization for all infants, toddlers, and preschoolers.



**Creating Environments**  
Locate resources that describe daily routines, materials, equipment, and how to plan and arrange spaces.

### Featured Topics

#### Math and Science Resources for Teaching Teams Working with Infants, Toddlers, and Preschoolers

Explore strategies and experiences that promote children's development in math and science.



#### A Head Start on Picturing America

View experiences that focus on vocabulary, book reading, and child outcomes in the context of the artworks.



#### Steps to Success for Early Literacy Mentor Coaches in Head Start and Early Head Start

Discover resources and strategies to support the development of strong, effective early literacy mentor-coaching skills and systems.



### Tools and Resources

Head Start Leaders Guide to Positive Child Outcomes [PDF, 1.82MB]

Head Start Child Outcomes Framework

Super Things Parents and Caregivers Can Do

A Checklist for Early Childhood Curriculum

Creating a Learning Environment for Young Children

Steps to Success: Decision Maker Guide

### Education Links

- National Institute for Literacy
- National Institute for Early Education Research
- Early Head Start National Resource Center
- National Head Start Family Literacy Center
- National Child Care Information and Technical Assistance Center
- National Early Childhood Technical Assistance Center— National &



Email questions and suggestions  
to:

ScienceWebcasts@esi-dc.com