Lobby Question

Think of a STEAM skill that you used this morning and share it in the chat box.

Infant and Toddler Explorers: Building STEAM Skills from the Start

What Is STEAM?

- Science
- Technology
- Engineering
- Art
- Math
Session Objectives

At the end of this webinar, you should be able to:

- Identify ways infants and toddlers naturally engage in inquiry, reasoning, and problem-solving
- Understand how STEAM is for everyone and children use it every day
- Explain at least three ways to support children’s STEAM skills and thinking

Session Agenda

Here’s what we’re doing today:

1. STEAM and the inquiry cycle
2. Young explorers: What the research tells us
3. Strategies for supporting STEAM skills and thinking

Understanding Inquiry
You Naturally Use the Scientific Method

Observe → Question → Predict → Explore → Reflect → Observe

Explore

Predict

Reflect

Observe

Question

Explore

Predict

Reflect

Observe

Question

Explore

Predict

Reflect

Observe

Question

Explore

Predict

Reflect

Observe

Question

Explore

Predict

Reflect

Observe

Question

Explore

Predict

Reflect

Observe

Question

Explore

Predict

Reflect

Observe

Question

Explore

Predict

Reflect

Observe

Question

Explore

Predict

Reflect
The “A” In STEAM

Observe → Question
Reflect → Explore
Predic → Observe

STEAM Mindset and Abilities

STEAM Stretches Across the ELOF Domains

- Cognition (Infant/Toddler)
  - Exploration and Discovery
  - Memory
  - Reasoning and Problem-Solving
- Approaches to Learning
- Social and Emotional Development
- Language and Communication
Young Explorers: What the Research Tells Us

STEAM Concepts

Learning Through Observation and Experimentation

Schulte, 2015 (image); Stahl & Feigenson, 2015
Theory-Building: Probability

(Waismeyer, Meltzoff, & Gopnik, 2015)
Theory-Building: Probability

4 of 6 = 67%

2 of 6 = 33%

Machine Marble dispenser
Making Sense of a Messy World

Learning from Music

Brainstorm

- How do you already support STEAM learning in infants and toddlers?
Engaging Environments

- Provide open-ended materials
- Use a variety of materials
- Pay attention to children’s interests
- Engage the senses
- Consider the developmental level of the child
- Arrange materials so they are accessible
Nurturing, Responsive, & Effective Interactions

Use Scaffolds

Introduce Basic Inquiry Skills

**Observe**
- What do you see / hear?
- How do they sound / smell?
- How are they the same?
- How are they different?
- What happens when you try?
  You seem curious about...

**Question**
- What are you curious about?
- What do you want to know?
- Are you wondering if…?

**Explore / Experiment**
- Let’s investigate!
  - What do you notice?
  - What is changing?
  - What did you try?
  - Let’s draw what we see.

**Predict**
- What do you think will happen?
- What are your predictions?
- Why do you think that?
- How could we find out?

**Reflect**
- What were your predictions?
- What happened?
- What did you notice?
- Why do you think that happened?
- What could we investigate next?
Speak the Language of STEAM

- Observe, observation
- Measure
- Question
- Count
- Predict, prediction
- Investigate
- Similar, different
- Explore
- Experiment
- Compare, contrast
- Test
- Hypothesize, hypothesis
- Discover
- Record
- Explain
- Predict, prediction
- Hypothesize, hypothesis

Invite Children to Communicate

“How are you making the wheel spin?”

Learning Experiences / Activities
STEAM Is For Everyone

“Always be on the lookout for the presence of wonder.” ~ E.B. White

Wrap Up: Building STEAM Skills from the Start

How are you going to take what we’ve learned today and apply it to your work with children and their families? What additional tools or information might you need to support your work?
Resources
Early Childhood Learning & Knowledge Center (ECLKC) – STEAM/STEM
Understanding STEAM and How Children Use It: https://eclkc.ohs.acf.hhs.gov/publication/understanding-steam-how-children-use-it
Marvelous Explorations through Science and Stories: https://eclkc.ohs.acf.hhs.gov/school-readiness/article/marvelous-explorations-through-science-stories
Fostering Children’s Thinking Skills: https://eclkc.ohs.acf.hhs.gov/video/fostering-childrens-thinking-skills
Using the Scientific Method: https://eclkc.ohs.acf.hhs.gov/video/using-scientific-method

Resources
Early Childhood Learning & Knowledge Center (ECLKC)
Dual Language Learners Toolkit https://eclkc.ohs.acf.hhs.gov/culture-language/article/dual-language-learners-toolkit
Classroom Visuals and Supports https://eclkc.ohs.acf.hhs.gov/children-disabilities/article/classroom-visuals-supports

Thank You!
Please fill out a survey: