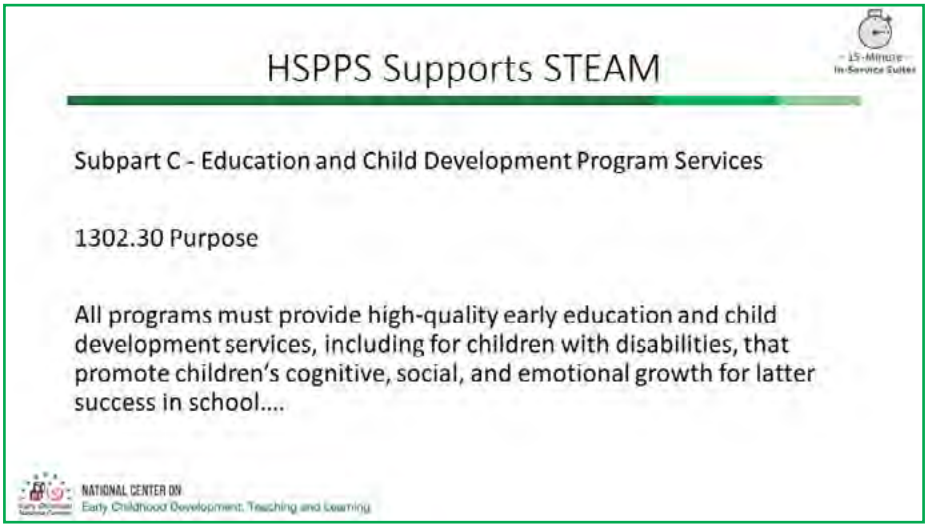
STEAM PRESENTER NOTES - OPTIONAL

OPTIONAL SLIDES FOR ALL SETTINGS



OPTIONAL SLIDE 1:

Read the content on the slide first:

1. STEAM does all of this! It develops thinking and communication skills, fosters positive interactions with adults and children, and builds confidence and joy in learning. All of these skills and behaviors promote school readiness.
2. STEAM integrates many areas of learning and development across the ELOF domains. In the course of exploring and investigating, children are relating to others, developing concepts, expressing themselves, managing their emotions, and learning to problem-solve. These are ELOF goals across the developmental continuum for infants, toddlers, and preschoolers.
3. STEAM is already embedded in much of what you do. It is not something extra that you need to add to your curriculum or planning. Rather, it informs decisions about interactions and supports that you provide parents.

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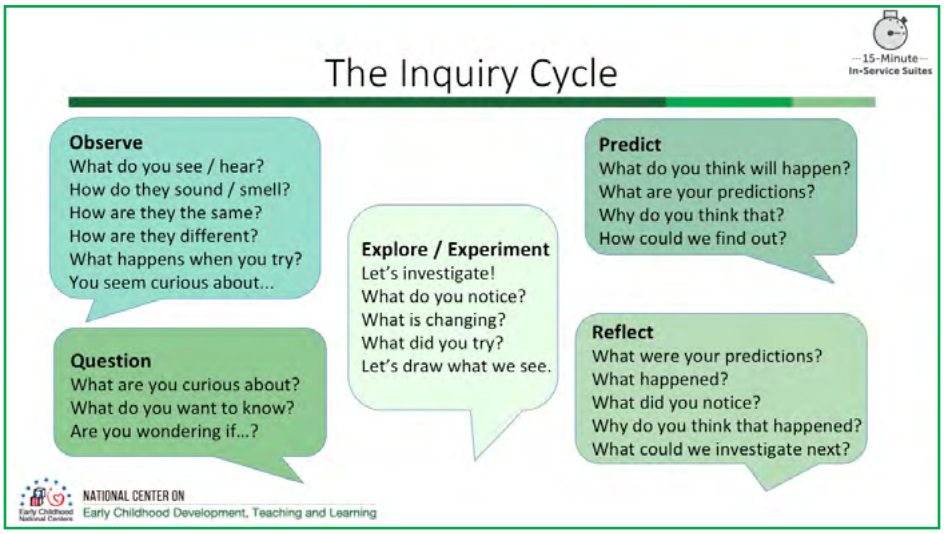

OPTIONAL SLIDE 2:

The inquiry cycle or scientific method is at the heart of STEAM. Adults use the scientific method naturally, and so do children!

Observation → First we observe, notice, or question something about the world.

Question → What question are you curious about or do you want to know the answer to?

Predict (or hypothesize) → We make a prediction or hypothesis about what we think will happen. (A hypothesis is your "best guess" or saying "I predict that x will happen" right before doing y.) ***Emphasis* It doesn't matter if your hypothesis ends up being right or wrong!**

Explore/Experiment → You do various investigations or explorations based on your hypotheses.

Reflection → Think about how your findings related to your prediction. This often leads to more questions. Hence the CYCLE of inquiry. **Note:** The inquiry cycle is not always linear. We move back and forth through the steps because we might notice something new, realize we have a different question after exploring further, etc.

Adults can foster this problem-solving approach in their conversations with children. Asking questions can help children reflect on what they are trying to do, whether what they have tried has worked or not, and how to plan their next move.

Encourage children who are dual language learners to ask questions in the language(s) in which they feel most comfortable to support curiosity and questioning or provide visual aids that children can use to communicate their thinking. Keep in mind that children who are dual language learners may be actively engaged listening to others' observations but may not yet feel confident to respond in English. Remember to adjust your questions to match a child's current level of receptive and expressive language and/or English.

Here are some useful questions to encourage problem solving with young children. These are also included on your handout. **Note:** Provide a few examples from the slide.

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OPTIONAL SLIDE 3:

Describe ways listed on the slide to create a culture of inquiry.

Model a questioning mind. This helps children become critical thinkers and problem solvers. One way to model a questioning mind is to use questions that begin with *I wonder what, how, or why*.

Learning to inquire is most successfully modeled when adults truly do not know the answer, do not have a preconceived answer in mind—or when they clearly are surprised by the results of the investigation. When adults do not know the answer, they allow the time and opportunity for children to figure things out, and they are at ease with faulty findings as children engage in the investigative process.

A culture of inquiry includes all learners. By actively observing individual children, we can assess their understanding of concepts. Children who are dual language learners may understand the concepts you are working on, but they could need assistance developing the English vocabulary to discuss their understandings. For children in group care who are learning a tribal language, provide concepts in the language of the classroom and the tribe. Allowing children to speak in the language(s) in which they feel most comfortable is important in fostering curiosity and questioning. For children with disabilities or suspected delays, adults might consider offering visual supports to provide the children with another way to communicate, instead of relying on verbal communication.

Some examples of visual supports are available on the ECKLC website.
https://eclkc.ohs.acf.hhs.gov/children-disabilities/article/classroom-visuals-supports

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OPTIONAL SLIDE 4:

In the traditional idea of adult-child interactions, the adult presents knowledge, and students learn and retain it. When we change our perspectives about what teaching STEAM looks like, we move from teaching specific content to children, to listening to children's questions and modeling a questioning mind.

You don't have to be the expert or have all the answers—and in fact, research shows that it's better for children's learning if you explore with them or let them lead in the exploration! Researchers have found that too much direction from teachers can sometimes narrow the range of alternate solutions that children think about. Parents also frequently use this approach, so it is important to help families think about their role and allow the child to lead the exploration or explore together.

Note: Go through the quotes from left to right to show how we can change our thinking from being an expert to exploring together.

DISCUSSION: AFTER READING THE QUOTES ON THIS SLIDE ASK THE PARTICIPANTS HOW DOES THIS IMPACT YOUR METHODS FOR SUPPORTING CHILDREN AND FAMILIES? ASK HOME-BASED PROVIDERS HOW CAN YOU ENCOURAGE FAMILIES TO BEGIN TO EXPLORE TOGETHER?

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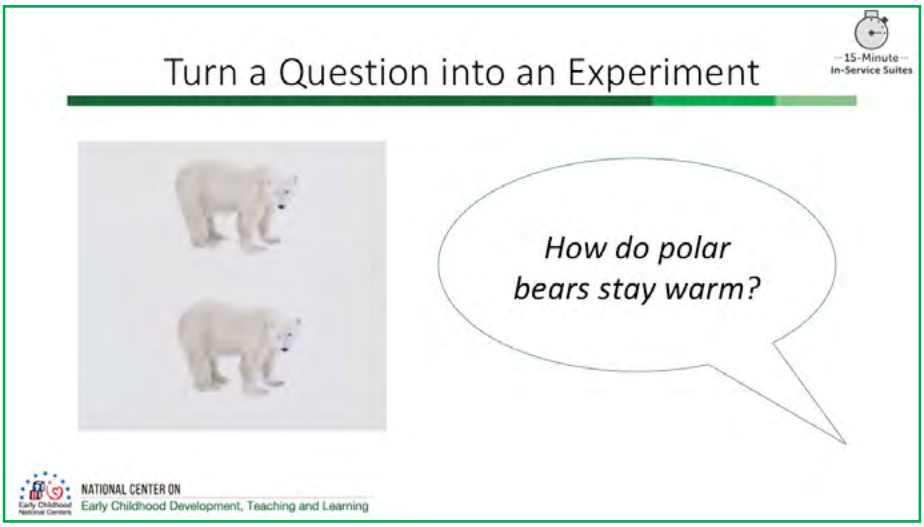

OPTIONAL SLIDE 5:

Option to end by watching a video example that brings together everything that we've been talking about today.

In this video, a teacher is supporting a child during a classroom experiment about polar bears. She is using the inquiry cycle to help the young girl answer a question she had after hearing about polar bears in a book the class read about Alaska. The little girl asked, "How do polar bears stay warm?"

Note: Ask participants to think about how the teacher is using nurturing, responsive, and effective interactions as she and student engage in a STEAM activity.

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Video is 1 minute, 15 seconds long

OPTIONAL SLIDE 6:
Play Video

DISCUSSION: LEAD PARTICIPANTS IN A DISCUSSION ABOUT HOW THE TEACHER USED NURTURING, RESPONSIVE, & EFFECTIVE INTERACTIONS.

1. Use **scaffolds** (e.g., Teacher guides the activity by asking questions, focusing on the child currently doing the experiment, helping her put her hand in the blubber)
2. Introduce basic **inquiry skills** (Teacher engages child in all steps of the inquiry cycle; e.g., make observations, predictions, and comparisons)
3. **Speak STEAM** (e.g., Teacher asks child to make prediction then simplifies to say, "what do you think will happen?")
4. Invite the child to **communicate** (e.g., Teacher asks child to make predictions and discuss what the findings mean)

Encourage participants to think about activities and STEAM skills bubbling out of the observations and questions that kids naturally ask. Infuse the cycle of inquiry throughout the day by listening to children's questions or what they are showing interest in and creating hands on activities for them. Support families to do the same.

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