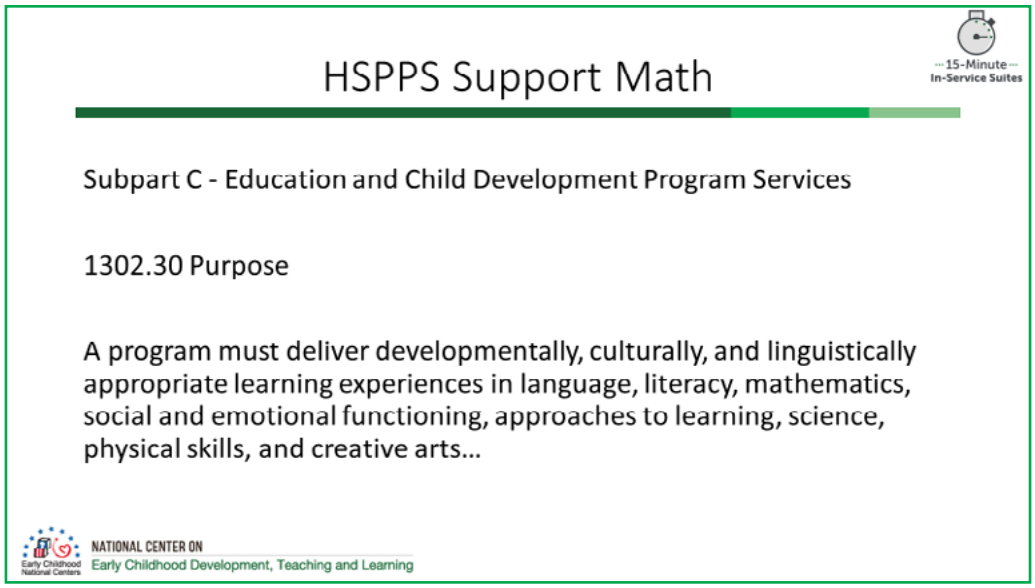
MATH: NUMBER RECOGNITION AND SUBITIZING – AIAN PRESENTER NOTES- OPTIONAL



OPTIONAL SLIDE 1:

Read the content of the slide first.

Programs must provide high-quality early education and child development services to all children, including for children with disabilities, that promote children's cognitive, social, and emotional growth for later success in school.

Children's success in math-related skills is linked with school readiness goals, therefore it is important to provide a high-quality math-rich environment for young children to facilitate growth in this area. Using math language such as "Please pick up 2 blocks" or "You have 4 berries on your plate" will help children develop a sense of number and quantity and eventually perceptual subitizing—recognizing the number of objects without counting. Additionally, playing games with dice will help promote conceptual subitizing—putting together the parts of multiple sets.

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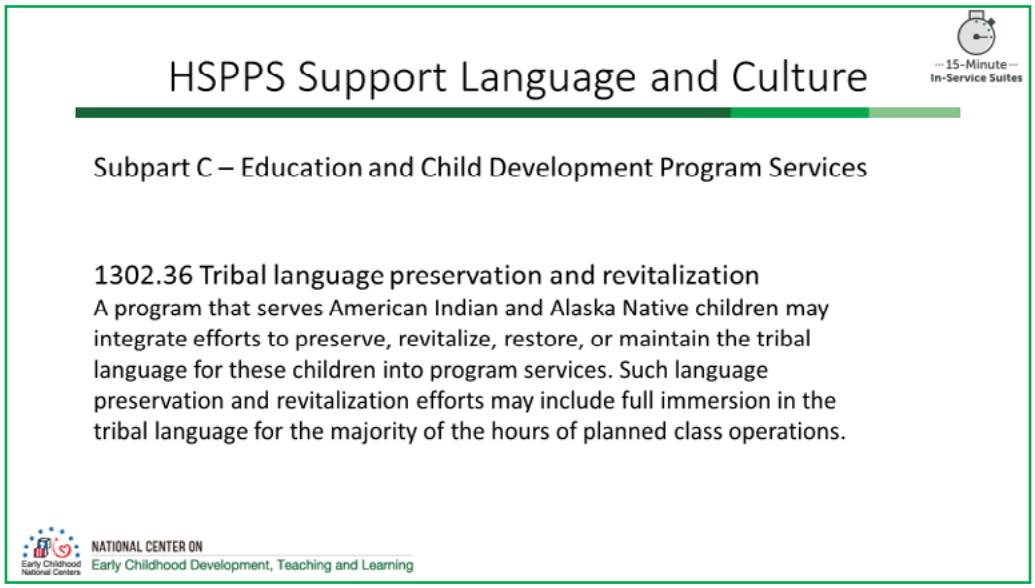

OPTIONAL SLIDE 2:

Read slide.

AIAN programs are encouraged to integrate tribal language and culture into program services. You can integrate language preservation and revitalization into home-based services. Home-based services are integral in preserving, revitalizing, and restoring tribal languages.

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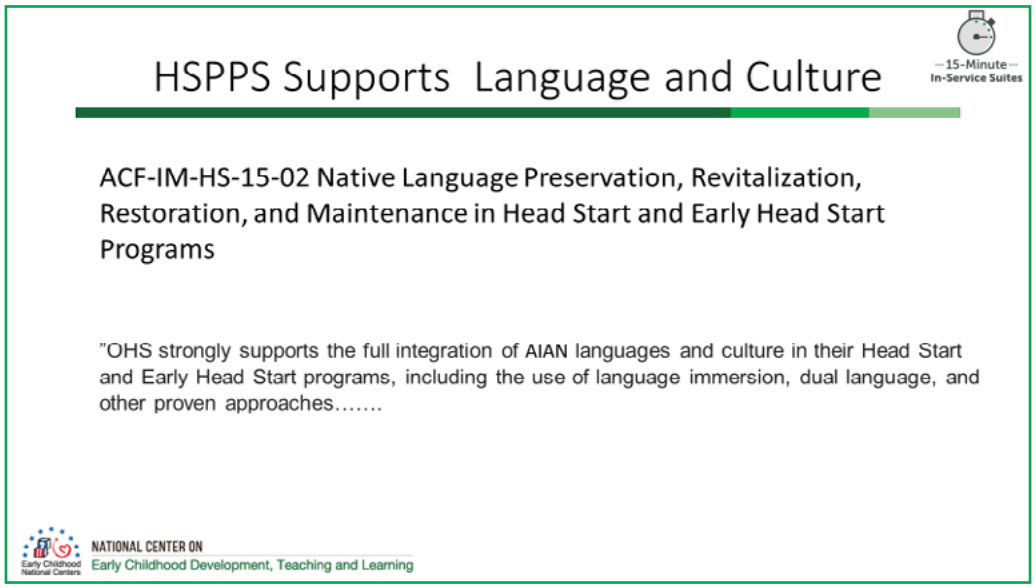

OPTIONAL SLIDE 3:

Read slide.

OHS strongly supports full integration of tribal languages and culture in EHS and HS programs.

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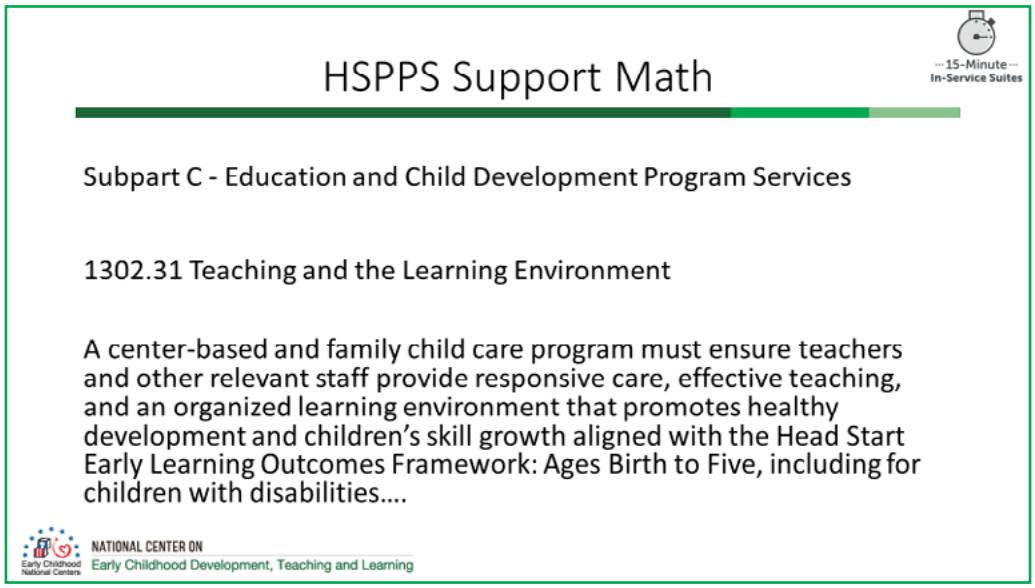

OPTIONAL SLIDE 4:

The teaching practices should not only provide learning experiences that support all the developmental domains of learning outlined in the ELOF, such as math and cognitive development, but also foster trust and security and support children's developmental progressions by intentionally creating an environment that builds upon children's individual development and learning patterns.

Number recognition and subitizing are supported in the Cognition domain of the Early Learning Outcome Framework (ELOF). Children develop a sense of number and quantity during the infant and toddler years and will begin to recognize the number of small objects in groups without counting! These are ELOF goals across the developmental continuum for infants, toddlers, and preschoolers.

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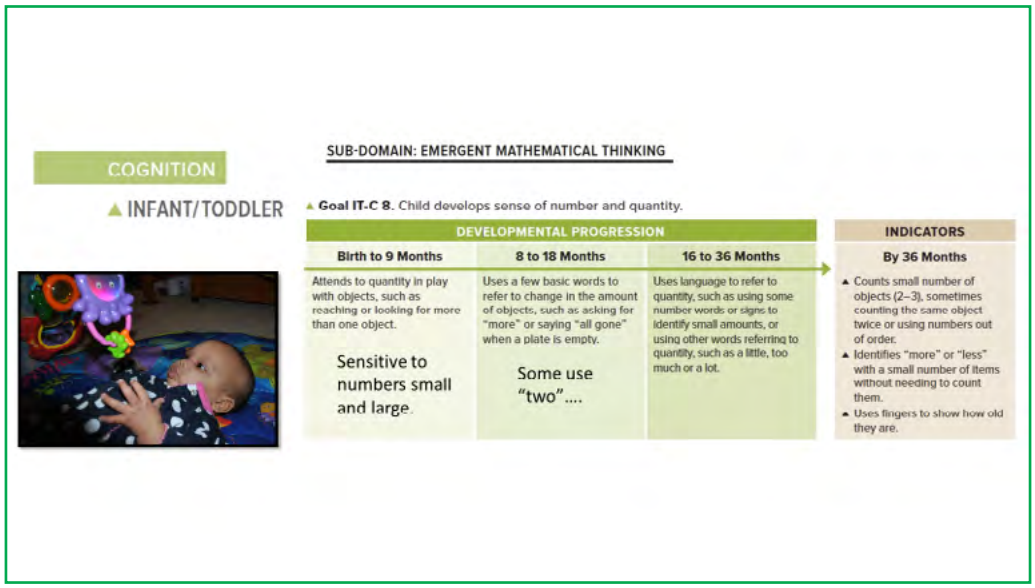

OPTIONAL SLIDE 5:

For each ELOF slide, start by briefly discussing the boxed text. *Then* move to the presenter notes, *in synchrony with* clicks to prompt each note. That is—one click/one note on screen/one paragraph to present.

Goal IT-C 8 describes how children develop a sense of number and quantity.

[Click]

Children are sensitive to numbers and can intuitively compare numbers both small and large (if one group is a lot more numerous than the other) in their first year of life.

[Click]

Some children learn their first number words by 18 months. They usually learn "two" first. They can also recognize very small numbers without counting…

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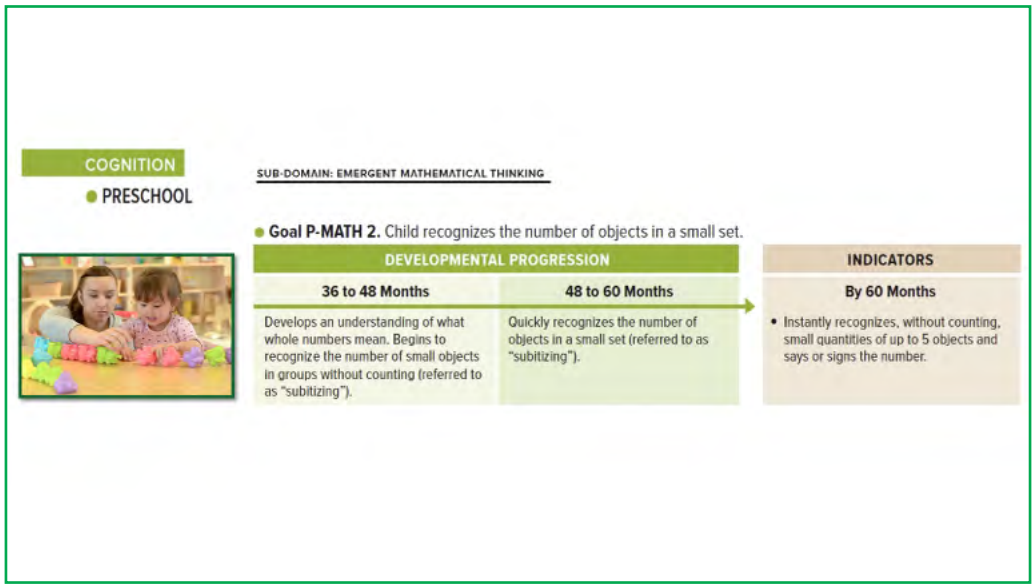

OPTIONAL SLIDE 6:

Here is where the ELOF first presents number recognition and subitizing. However, the foundations for this ability begin much earlier.

It is important that we distinguish between a developmental progression *and* a learning trajectory—the latter of includes a developmental progression at its core, but also includes the goal and is linked to educational activities.

Let's look at number recognition and subitizing through the lens of a developmental progression. Then through the lens of the complete learning trajectory.

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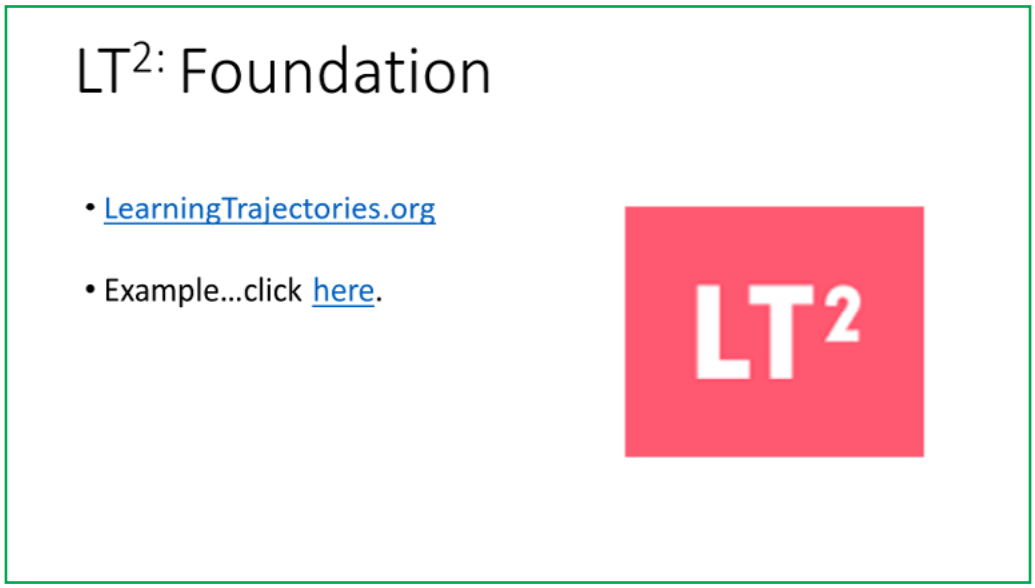

OPTIONAL SLIDE 7:

- Use the link in the 2nd bullet point above to see a video example. When the website loads, read the text below the video, watch the video, and discuss the video with participants.
- If there is time, show other videos of children at that level at LearningTrajectories.org (click on LearningTrajectories.org).
- Important note: Do not show the actual URL in the link in the second bullet or share it with anyone. The video should not be downloaded or disseminated in any form to maintain privacy agreements.

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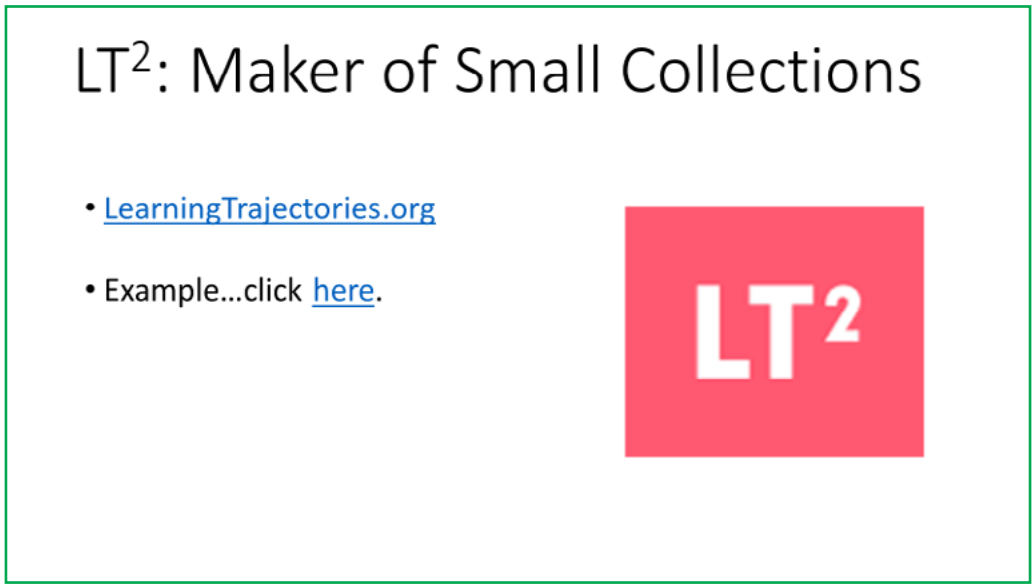

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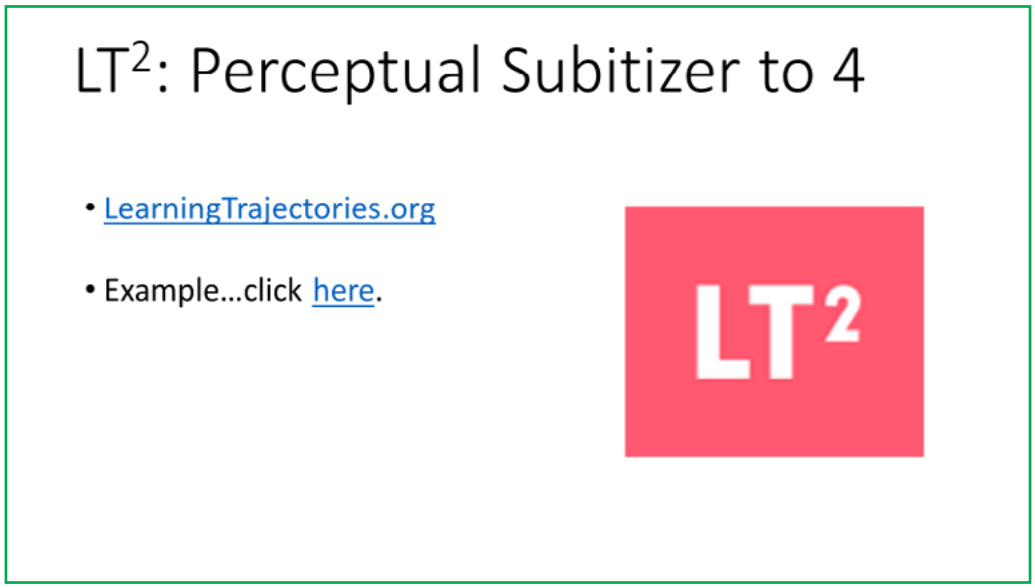

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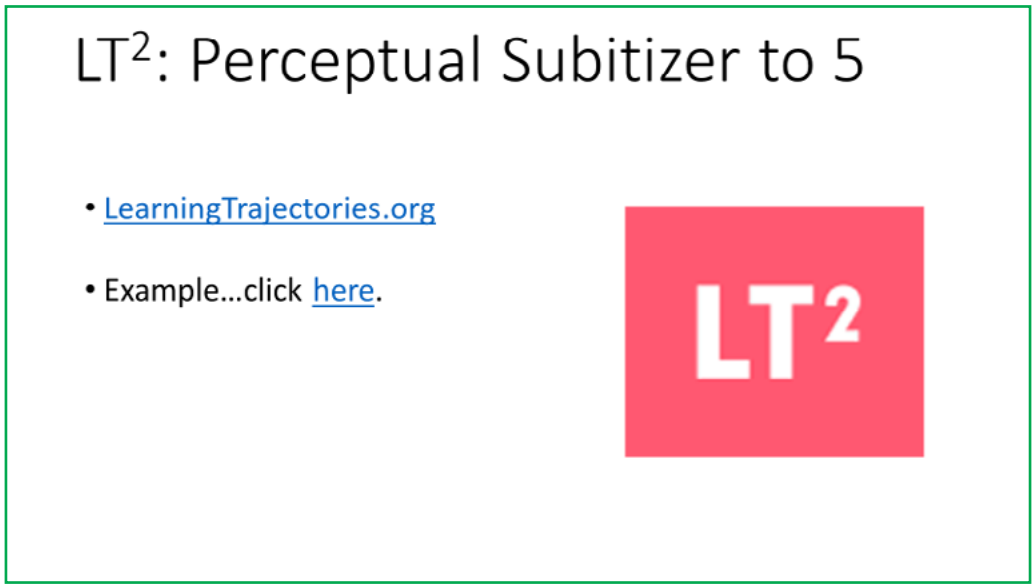

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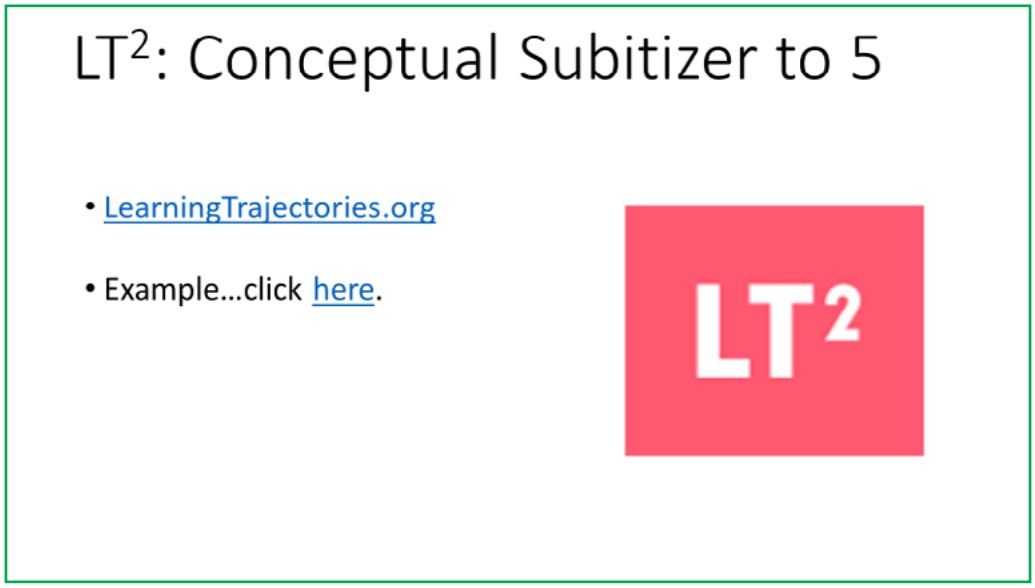

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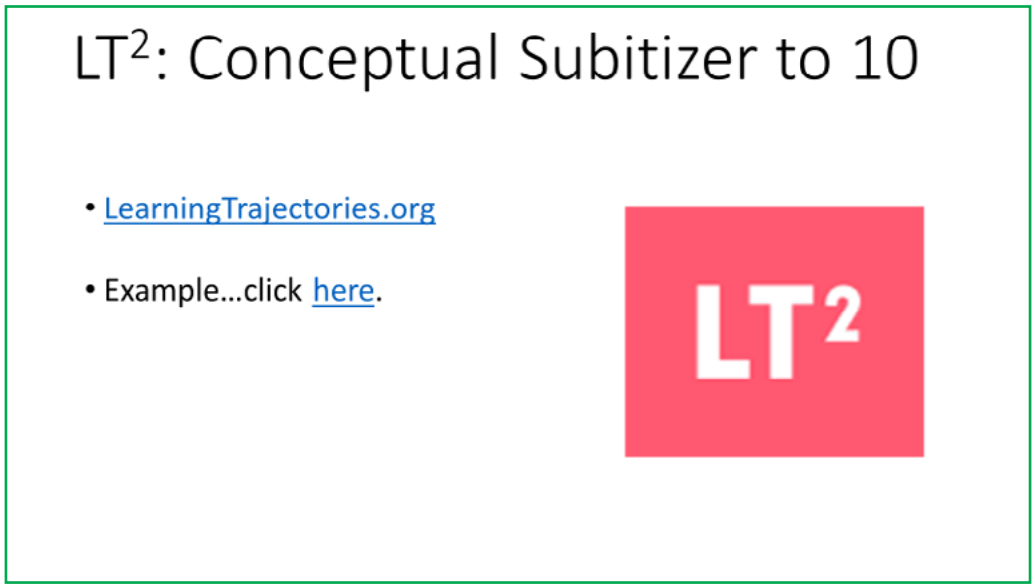

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OPTIONAL SLIDE 14:

SOME QUESTIONS TO ASK WHEN CREATING A LEARNING ENVIRONMENT

- How are children's ideas incorporated into the learning environment?
- How can children be respectfully redirected?
  - visual cues
  - verbal support
  - suggestions
  - directions
- What subtle cues can redirect children?
- How do materials in the classrooms reflect the values and frame of reference of the community (e.g., does the posted alphabet have Tribal language and English; are the references local foods, animals, etc.)?
- Are there cultural tools, regalia, colors, etc., in the classroom?
- What questions can adults ask respectfully?
- How do staff use local cultural examples to teach concepts?
- Do staff ask why, how, and when questions?
- How do staff encourage and affirm student persistence?
- How (or if) do adults encourage back-and-forth exchanges? Do they
  - support tribal language and vocabulary?
  - plan vocabulary to support concepts?
  - intentionally expand and extend vocabulary?

RESOURCE:

Steps and Introduction to Making It Work:
https://eclkc.ohs.acf.hhs.gov/sites/default/files/pdf/no-search/making-it-work-2017.pdf. See page 18

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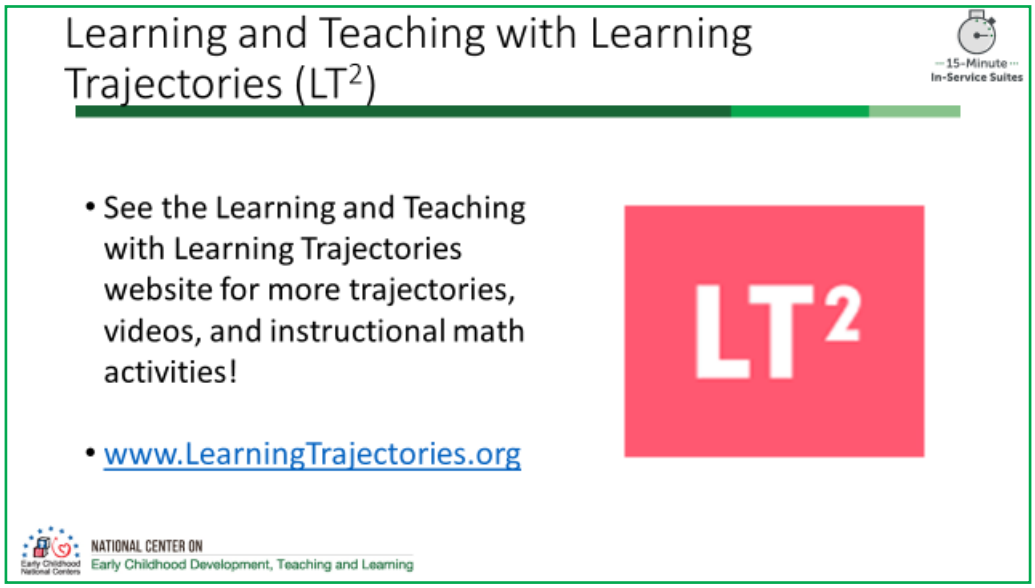

OPTIONAL SLIDE 15:

This website includes over 1000 videos, instructional activities, and computer games to across multiple math categories. Registration is free!

LT2 is a web-based tool for early childhood educators to learn about how children think and learn about mathematics and how to teach mathematics to young children (birth to age 8). The website provides teachers with access to information about learning trajectories for math. Teachers can also review short video clips of children's thinking along the math learning trajectories. Users can access hundreds of classroom activity ideas to support children's development along the math trajectories.

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