

2017-2018 Teacher Time for Infant/Toddler Teachers—Episode 3 Viewers Guide

Cognitive Development for Infants and Toddlers: Early Mathematical Thinking

Summary:	<p>In the introduction to High Five Mathematize (p.2), it says, “Early math is critical; children who are prepared have an advantage that carries far beyond the early years.” And research tells us that early math skills predict later math skills—and that early math skills may be better predictors of academic success than early literacy skills! We know how important math concept and skill development is for all children, and it starts with infants and toddlers. Episode 3 digs a little deeper into how you can support infants’ and toddlers’ early mathematical thinking, an important part of early cognitive development as described in the Head Start Early Learning Outcomes Framework (ELOF).</p>
Today’s Topic and Guest Expert	<p>Emergent Mathematical Thinking</p> <p>Early mathematical thinking is important for children’s development. Knowing about early math development helps you create an environment that supports early math learning, expose children to math concepts, and use the language of math, or math talk, with even the youngest babies. Guest expert, Dr. Doug Clements, shares some information to inform our understanding of early math development.</p> <p>NOTES: What are some ways your learning environment supports early math learning?</p>
Videos and Guest Expert	<p>As a teacher, you have an important role to play! You bring math to life for infants and toddlers through your understanding of early math development, the materials and experiences you provide, and through nurturing and responsive interactions. Dr. Clements offers suggestions for effective practices that support early mathematical thinking.</p>

	<p>NOTES: What are some strategies mentioned by Dr. Clements that you would like to try?</p>
<p>Teacher Videos and Chat</p>	<p>You watched videos of teachers using some of the strategies that Dr. Clements shared.</p> <p>NOTES: What strategies stood out for you? What did you notice about how the children responded?</p>
<p>Approaches to Learning</p>	<p>Approaches to learning focuses on <i>how</i> children learn, rather than <i>what</i> they learn. This domain describes the skills and behaviors that children use to learn. This domain also includes initiative, curiosity, and creativity. When using these skills, children learn to do things that are challenging, frustrating, or simply take time to do.</p> <p>Infants and toddlers use cognitive self-regulation skills, initiative, and curiosity to learn about and express their understanding of their world. You support young children’s approaches to learning by:</p> <ul style="list-style-type: none"> • Developing consistent, positive relationships you develop with them

	<ul style="list-style-type: none"> • Providing interesting materials and experiences you provide • Helping them focus and persist • Using math talk with them <p>NOTES: How do you create an environment that lets children know they are safe to explore and learn?</p>
<p>Ongoing Assessment</p>	<p>Observing and documenting growth in children’s emergent mathematical thinking requires <i>focused observation</i> and <i>intentional engagement</i> with children.</p> <p>Watch for how infants and toddlers show they are developing a sense of number and quantity, use spatial awareness to understand objects and their movement in space, and using matching and sorting of objects or people to understand similar and different characteristics.</p> <p>Engage in ongoing two-way communication with families about children’s exposure to and experiences with math concepts at home—as well as the language(s) children are hearing/understanding/using at home. This will help you better assess children’s emergent mathematical thinking.</p> <p>NOTES: What are some early math skills you want to intentionally observe for this week?</p>

<p>Questions and Answers with Hosts</p>	<p>NOTES: What’s one teaching practice or assessment strategy you will use in the next week?</p>
<p>Wrap Up & Resources</p>	<p>Early Childhood Learning and Knowledge Center (ECLKC) https://eclkc.ohs.acf.hhs.gov/</p> <ul style="list-style-type: none"> • Effective Practice Guides: Cognition – https://eclkc.ohs.acf.hhs.gov/school-readiness/effective-practice-guides/cognition • News You Can Use: Supporting Early Math Learning for Infants and Toddlers – https://eclkc.ohs.acf.hhs.gov/school-readiness/article/news-you-can-use-supporting-early-math-learning-infants-toddlers • High Five Mathematize – https://eclkc.ohs.acf.hhs.gov/publication/high-five-mathematize • Text4Teachers – https://eclkc.ohs.acf.hhs.gov/teaching-practices/article/text4teachers

	<ul style="list-style-type: none"> • On Early Educator Central – The Building Blocks of Mathematics for Infants and Toddlers: An Annotated Bibliography for Course Developers (2015) – https://earlyeducatorcentral.acf.hhs.gov/sites/default/files/public/resources/The%20Building%20Blocks%20of%20Mathematics%20for%20Infants%20and%20Toddler%20s.pdf • Teaching and Learning with <i>Learning Trajectories</i> (LT²) – https://www.learningtrajectories.org/ • Zero to Three early math videos <ul style="list-style-type: none"> ○ Everyday Fun With Spatial Awareness: Let’s Talk About Math – https://www.zerotothree.org/resources/251-everyday-fun-with-spatial-awareness-let-s-talk-about-math-video ○ Everyday Fun With Shapes: Let’s Talk About Math – https://www.zerotothree.org/resources/250-everyday-fun-with-shapes-let-s-talk-about-math-video ○ Everyday Fun With Counting: Let’s Talk About Math – https://www.zerotothree.org/resources/252-everyday-fun-with-counting-let-s-talk-about-math-video • Support Math Readiness Through Math Talk (Eugene Geist, NAEYC) – https://families.naeyc.org/learning-and-development/music-math-more/support-math-readiness-through-math-talk • Support Math Readiness Through Music (Eugene Geist, NAEYC) – https://families.naeyc.org/learning-and-development/music-math-more/support-math-readiness-through-music <p>Head Start Early Learning Outcomes Framework (ELOF) https://eclkc.ohs.acf.hhs.gov/school-readiness/article/head-start-early-learning-outcomes-framework</p> <ul style="list-style-type: none"> • There’s the ELOF for That (video) • ELOF Interactive Framework • ELOF2GO Mobile App • Effective Practice Guides <p>MyPeers https://eclkc.ohs.acf.hhs.gov/about-us/article/mypeers-collaborative-platform-early-care-education-community</p>
<p>Head Start Program Performance Standards</p>	<p>Information in this episode reflects the following Head Start Program Performance Standards:</p> <p>§1302.31 Teaching and the learning environment</p> <p>(b) Effective teaching practices</p> <p>(1) Teaching practices must:</p> <p>(i) Emphasize nurturing and responsive practices, interactions, and environments...</p> <p>(ii) Focus on promoting growth in the developmental progressions described in the Head Start Early Learning Outcomes Framework...</p>

- (iii) Integrate child assessment data in individual and group planning; and
- (iv) Include developmentally appropriate learning experiences in language, literacy, social and emotional development, math, science, social studies, creative arts, and physical development...

(2) For dual language learners, a program must recognize bilingualism and biliteracy as strengths and implement research-based teaching practices that support their development. These practices must:

- (i) For an infant or toddler dual language learner, include teaching practices that focus on the development of the home language, when there is a teacher with appropriate language competency, and experiences that expose the child to English

(c) Learning environment

(1) For infants and toddlers, promote relational learning and include individualized and small group activities that integrate appropriate daily routines into a flexible schedule of learning experiences.

§1302.33 Child screenings and assessment

(c) Characteristics of screening and assessment

(2) If a program serves a child who speaks a language other than English, a program must use qualified bilingual staff, contractor, or consultant to:

- (i) Assess language skills in English and in the child's home language, to assess both the child's progress in the home language and in English language acquisition;
- (ii) Conduct...assessments for domains other than language skills in the language or languages that best capture the child's development and skills in the specific domain;

Subpart F—Additional Services for Children with Disabilities

§1302.60 Full participation in program services and activities

A program must ensure enrolled children with disabilities...receive all applicable program services...and that they fully participate in all program activities.