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| **Nevada Math Series**  Session 2 |

Do Now

*Building Math Skills—Promoting Math Talk in the Classroom*

After watching the NAEYC video, respond to the following prompts:

* Why is it so urgent that our children are exposed to rich and varied vocabulary in math?
* What are you and your teachers already doing to promote language acquisition in math for your children? Where do you wish you were doing more?
* If you are an ELIS: How, if at all, have you worked with leaders and/or teachers to develop math vocabulary in children?

What is Math Talk?

*Building Math Skills—Promoting Math Talk in the Classroom*

***Preschool Children’s Mathematical Knowledge: The Effect of Teacher “Math Talk”***

“A Developmental Psych study examined the relation between the amount of mathematical input in the speech of preschool or day-care teachers and the growth of children’s conventional mathematical knowledge over the school year. Three main findings emerged.

* First, there were marked individual differences in children’s conventional mathematical knowledge by 4 years of age that were associated with socioeconomic status.
* Second, there were dramatic differences in the amount of math-related talk teachers provided.
* Third, and most important, **the amount of teachers’ math-related talk was significantly related to the growth of preschoolers’ conventional mathematical knowledge over the school year but was unrelated to their math knowledge at the start of the school year.**”

Jot down any notes that you find helpful from the group discussion here:

What is Math Talk?

* Math talk is as simple as it sounds: **talking with children about the math they experience.**
* The goal of math talk is to **keep the child talking**—this looks different dependent on a child’s age. For infants, you may be modeling this for them (we know their receptive language is high!). For toddlers and older children, you may be asking questions to keep the conversation going and to support them in verbalizing their thinking.
* Math talk is used to help children to **communicate their thinking** and **justify solutions to problems** they solve mentally.

Math Talk Video Analysis

*Building Math Skills—Promoting Math Talk in the Classroom*

**Key Idea:** Math talk needs to be intentionally incorporated into classroom interactions—no matter the setting or “subject”—but it doesn’t require a giant lesson plan! This should feel natural and intuitive; the more you do it, the more natural it will become.

As you watch the video of math talk in a preschool setting, watch **how the teacher infuses math talk** into her classroom.

* What math talk do you notice educators or children using?
* What other math talk opportunities do you see?
* What math skills are being built into these opportunities?

Key Look-Fors: Math Talk

*Building Math Skills—Promoting Math Talk in the Classroom*

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| Math Talk Look Fors | |
| **Infused Throughout the Day** | Takes advantage of opportunities that exist: routines such as attendance, lunch distribution, store center (counting money), building center (size and shapes), etc. |
| **Continues the Conversation** | Keep the child talking by asking questions, prompting, and more. |
| **Uses Appropriately Complex Math Vocabulary** | Tier 2 vocabulary  Children communicate accurately and confidently |
| **Promote Problem-Solving and Process, not just Skill** | It’s not just about vocabulary development or getting the right answer  Children explain their thinking and the process/approach they take. |

Planning for Math Talk

*Building Math Skills—Promoting Math Talk in the Classroom*

**Key Idea:** Over time, the language we use for math talk will become more intuitive and natural. Planning and practicing math talk will help us get there, especially as we consider how math talk may look/sound different with each developmental step children take.

Use the space below to jot down notes from the example that you find useful.

Practice

*Building Math Skills—Promoting Math Talk in the Classroom*

**Plan**

* **Imagine** you are popping into a two- or three-year-old classroom during center time. Children are engaged in **a blocks center, a library center, and a science center.**
* **Write one sentence you could use and one question you could ask of children in each center that would increase math talk.**

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| Blocks Center | *Sentence* |
| *Question* |
| Library Center | *Sentence* |
| *Question* |
| Science Center | *Sentence* |
| *Question* |

Leader Planning

*Building Math Skills—Promoting Math Talk in the Classroom*

**Take the next several minutes to create a plan for how you will share this content with the center staff that you support.**

* When will you deliver this content to your staff?
* How will you deliver content to your staff? (One whole-group two-hour professional development? Smaller groups? Smaller chunks of time? Direct facilitation vs. small group planning?)
* How will you support your team in implementing math talk? What tools will you create and provide them with?
* What challenges do you anticipate your staff may have with this content?
* If you are an ELIS: How will you help your leaders prepare and plan to deliver this content to their staff?

Do Now

*Practice: Observing for Math Talk*

**Reflect on your experience observing classrooms.**

What do you listen for to know that what’s occurring is high quality?

How do you ensure you are collecting evidence of what you are seeing and hearing in classrooms?

Observation Practice

*Practice: Observing for Math Talk*

Collect data focused on the **Math Language Development competency in the rubric** for teacher and child actions.

Rating on the Rubric

*Practice: Observing for Math Talk*

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| **How to Rate Overall Performance** |
| 1. Decide on your rating for each indicator. 2. Consider the ratings for all the indicators under a particular competency (i.e.. Building Oral Language Skills). 3. Using your evidence and indicator ratings, assign an overall rating to that competency: Ineffective, Approaching Developing, Developing, Proficient. 4. Write 2-3 evidence statements that support your overall rating. 5. Repeat for each relevant competency. |

Reflection on Observation

*Practice: Observing for Math Talk*

* 1. What did you find came naturally to you during this observation?
  2. What did you find challenging?
  3. What do you need to do as a leader to be ready to conduct these observations?

3-2-1 Exit Ticket

*Practice: Observing for Math Talk*

When are **3** different times of day you expect to see math talk (give an example of what it might sound like!)?

What are **2** next steps you will take as a leader to ensure you are making time for observing math talk in your center/school? (If you are an ELIS: What are **2** next steps you will take to ensure leaders make time for observing math talk in their weekly schedules?)

What is **1** reason you would share with someone for why math talk is critical for children? (Imagine you have a teacher or parent who is not invested or seeing the rationale for why math talk is critical.)

Next Steps

*Practice: Observing for Math Talk*

**Prior to our next Math training:**

**Teacher Observations:**

* Conduct at least 3 teacher observations using the Math Talk Look-Fors. Observe teachers during any time of the day to get an understanding of if/when/how math language is being used in their classroom.

**Building Math Talk:**

* Implement the teacher training content on Math Talk with at least one small group of teachers (approximately 5 teachers) prior to the **next** training. (Note that this gives you two months to implement.)
* Collect exit tickets at the end of the Math Talk training session and bring those with you to our next training.
* Before and after the training: Observe a small group of teachers who will participate in the training (3-5) to assess if and how math talk is being implemented in their classrooms before and after the training you provide.

**Ongoing:**

**Teacher Observations:**

* Prioritize time in your schedule to conduct observations of teachers each week. Enter those teachers’ math ratings into the observation tracker.