Number Talks to Inform Instructional Decisions
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Analysis Tool & Learning Trajectory

Analysis Tool
Focus
- What are students getting out of the talk and interaction?
- How is the classroom discourse serving as a formative assessment?

Step 1: Observe

What math talk shows that students understanding equality?	What math talk shows that students may need support to develop an understanding of equality?

Step 2: Analyze
Drawing on observations from Step 1, what did you learn about students' talk and interactions?

What did you learn about the classroom discourse serving as formative assessment?

Step 3: Action Steps
Drawing on the analysis from Step 2, what are one or two things you could implement in your (future) classroom practice?

Understanding the Equal Sign as a Symbol of Mathematical Equality
(Matthews, Rittle-Johnson, McEldoon, & Taylor, 2012)

Level	Description	Examples	
Rigid Operational	Solve equations or evaluate true-false statements that only have operations on the left side of the equal sign.	$4 + \square = 7$ $3 + 4 = \square$ $\square + 4 = 7$	T or F: $3 + 4 = 7$ T or F: $3 + 4 = 8$ T or F: $5 + 4 = 8$
Flexible Operational	1. Solve equations with operations on the right side of the equal sign. 2. Interpret statements that have no operations.	$\square = 3 + 4$ $7 = \square + 4$ $7 = \square$ $\square = n$	T or F: $8 = 3 + 4$ T or F: $7 = 3 + 4$ T or F: $7 = 7$ T or F: $n = n$
Basic Relational	Solve or evaluate statements with operations on both sides of the equal sign. Begins to recognize or explain a relational understanding of the equal sign.	$5 + 7 = 6 + \square$	
Comparative Relational	Use short cuts (e.g., compensation strategies) and properties of the operations to solve equations or evaluate statements. Consistently explains and generates a relational understanding of the equal sign.	Uses strategies to find most efficient ways to solve	

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