

Number Talks Innovation Configuration Map

Number Talks Item	Level 1	Level 2	Level 3	Level 4
Teacher Presents the Problem (~3 minutes)	The teacher: <ul style="list-style-type: none"> • presents a problem with dot cards (K-1) or computation problems. • provides wait time for the majority of students to access the problem. • prompts the students to use a “thumbs-up” as the signal that they have an answer. 	The teacher: <ul style="list-style-type: none"> • All criteria in the previous level, PLUS... • selects a problem/dot card designed to elicit a particular approach. • notices the types of mental computation strategies students use especially those that are inefficient, i.e., use of fingers or writing the problem on the floor. • anticipates how students will respond by thinking through possible strategies for each problem beforehand. • asks students to think on their own and to estimate before they compute. • removes pencil and paper from students access. 	The teacher: <ul style="list-style-type: none"> • All criteria in the previous level, PLUS... • selects a well-crafted series of problems/dot cards that align with the teacher’s purpose. • notices the types of mental computation strategies students use and provides further instruction with alternative strategies at another time. • periodically encourages students to keep thinking about the number of <i>additional</i> strategies that will work and indicate the number of strategies on their fingers. • uses a real-life context to help students access the math. 	The teacher: <ul style="list-style-type: none"> • All criteria in the previous level, PLUS... • increases the rigor of the problems over time. • consistently has students think of more than one strategy that will work and indicate the number of strategies on their fingers. • provides targeted small group instruction to those students needing additional instruction/practice.
Teacher Records Answers (~1 minute)	The teacher: <ul style="list-style-type: none"> • records all answers to be considered. 	The teacher: <ul style="list-style-type: none"> • All criteria in the previous level, PLUS... • records all answers to be considered without giving any verbal or physical expressions of agreement. • has students share answers. 	The teacher: <ul style="list-style-type: none"> • All criteria in the previous level, PLUS... • periodically uses overt methods such as number cards (K/1) or whiteboards etc. to elicit the answers of all students. • has students discuss which answers are reasonable and which answers could be ruled out 	The teacher: <ul style="list-style-type: none"> • All criteria in the previous level, PLUS... • keeps records such as checklists, anecdotal notes of students’ answers and/or participation. • strategically chooses when students will use overt methods to reveal answers • discusses reasonableness of answers based on logic and number sense.

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Teacher Records Student Thinking (~8 minutes)	The teacher: <ul style="list-style-type: none"> provides opportunities for several students to share their strategies. records student thinking. resources are displayed such as ten frames, hundreds charts and number lines. 	The teacher: <ul style="list-style-type: none"> All criteria in the previous level, PLUS... occasionally uses Talk Moves to help students explain their thinking and/or orient their thinking to others with little student engagement or discussion. records student thinking in a mathematically correct manner by using proper notation. displays sentence and question starters to help students frame their questions and comments. periodically references resources that are displayed such as ten frames, hundreds charts, number lines and strategy posters. regularly provides opportunities for students to orally practice using displayed sentence/question starters to help frame their questions and comments. 	The teacher: <ul style="list-style-type: none"> All criteria in the previous level, PLUS... regularly uses Talk Moves records student thinking using numbers as well as pictures, open number lines, area models, etc. as appropriate. regularly references tools that are displayed such as ten frames, hundreds charts, number lines and class created strategy posters. 	The teacher: <ul style="list-style-type: none"> All criteria in the previous level, PLUS... invites students to explain thinking to the class by drawing pictures, open number lines and area models when appropriate. strategically uses a variety of Talk Moves to further classroom discussion and understanding of the mathematics. strategically references tools that are displayed such as ten frames, hundreds charts, number lines and class created strategy posters and asks students to reference those tools during their explanation.
Further Discussion (~3 minutes)	The teacher: <ul style="list-style-type: none"> may or may not provide opportunities for further discussion. limits the number talks to 10 to fifteen minutes. 	The teacher: <ul style="list-style-type: none"> provides opportunities for further discussion. leads a discussion that identifies the correct answer. calls out new strategies used. 	The teacher: <ul style="list-style-type: none"> All criteria in the previous level, PLUS... leads a discussion on the most efficient strategy rather than asking for the correct answer to a problem. 	The teacher: <ul style="list-style-type: none"> All criteria in the previous level, PLUS... using Talk Moves, facilitates class discussion in which students explain which strategy they believe is most efficient and why. asks students if other problems presented during the session can be solved using the new strategy and if it would be the most efficient for that particular problem.

Materials/Resources

- Number Talks; *Helping Children Build Mental Math and Computation Strategies Grades K-5*, Sherry Parrish - available at all school sites in the principal's office
- Dot Cards and Problem Set packets were distributed in K - 1 math content training in 2013-2014 and are posted on the math intranet – instructional tools – Elementary – Number Talks
- Rekenreks will be introduced in Grade 1 during the 2014-2015 school years. Rekenreks are composed of two rows of stringed beads, each with 5 beads of one color and 5 beads of another color. They are used to help students build fluency with numbers 0 – 20, and compute using number relationships.