Number Talks

A Tool for Building Mathematical Confidence

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Georgia Curriculum Leaders' Conference

Standards for Mathematical Practices

▶ Make sense of problems and persevere

▶ Reason abstractly and quantitatively

▶ Construct viable arguments and critique the reasoning of others

▶ Model with mathematics

▶ Use appropriate tools strategically

▶ Attend to precision

▶ Look for and make use of structure

▶ Look for an express regularity in repeated reasoning

Georgia Standards of Excellence

Use place value understanding and properties of operations to perform multi-digit arithmetic.

Progression of Terminology

▶ Strategies (student-invented)

▶ Algorithms (generalized strategies)

▶ Standard Algorithm

Grade Level	Strategies	Algorithms	Std. Algorithm
2	Addition Subtraction		
3	Addition Subtraction Multiplication Division	Addition Subtraction Multiplication Division	
4	Addition Subtraction Multiplication Division	Addition Subtraction Multiplication Division	Addition Subtraction
5	Addition Subtraction Multiplication Division	Addition Subtraction Multiplication Division	Addition Subtraction Multiplication
6	Addition Subtraction Multiplication Division	Addition Subtraction Multiplication Division	Addition Subtraction Multiplication Division

Number Talks

A five to fifteen minute classroom conversation around purposefully crafted computation problems that are solved mentally

A Number Talk Is Not

▶ Number of the day

▶ Pre-teaching strategies

Addition Number Talk

325 + 427

$$325 + 427$$

$$= (300+25) + (400+25+2)$$

$$= (300+400) + (25+25) + 2$$
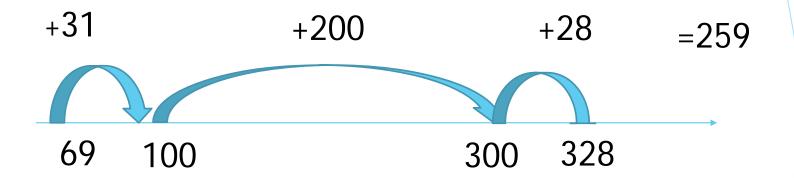
$$= 700 + 50 + 2$$

$$= 752$$

$$325 + 427$$

$$= (300+20+5) + (400+20+7)$$

$$= (300+400) + (20+20) + (5+7)$$

$$= \quad 700 \quad + \quad 40 \quad + \quad 12$$

$$= \quad 752$$

Classroom Snapshot: 328 - 69

$$\begin{array}{ccc} & 11 & \\ 2 & \cancel{12} & 18 \\ \cancel{3} & \cancel{2} & \cancel{8} \\ - & 6 & 9 \\ \hline 2 & 5 & 9 \end{array}$$

328 - 69

+31   +200   +28   =259

69   100   300   328

▶ How Do We Help Students Develop Strategies?

Principles of Number Talks

▶ Learning Community

▶ Purposeful Computation Problems

▶ Purposeful Recording

▶ Logico-Mathematical Knowledge

Purposeful Computation Problems

- ▶ Landmark numbers: 99 + 99

- ▶ Doubles: 16 + 15

- ▶ Compensation: 16   +   39

Purposeful Number Talk Strings
Relationships

15 + 15	50 + 50
15 + 16	49 + 49
18 + 18	60 + 60
18 + 17	59 + 59

Multiplication String

4 x 25

8 x 25

12 x 25

5th graders solving 12 x 15 Properties

https://players.brightcove.net/5387496875001/default_default/index.html?videoId=5441089509001

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