

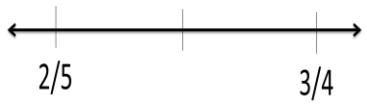
## What are Number Talks?

- A *Number Talk* is a short, ongoing daily routine that provides students with meaningful ongoing practice with computation. A *Number Talk* is a powerful tool for helping students develop computational fluency because the expectation is that they will use number relationships and the structures of numbers

Rationale	Number Talk Norms
<ol style="list-style-type: none"> <li>1. Talk can reveal understanding and misunderstanding.</li> <li>2. Talk supports learning by boosting memory.</li> <li>3. Talk supports deeper reasoning.</li> <li>4. Talk supports language development.</li> <li>5. Talk supports development of social skills.</li> </ol>	<ol style="list-style-type: none"> <li>1. Students are SILENT during work time.</li> <li>2. Students must be given an opportunity to correct themselves.</li> <li>3. Students are RESPECTFUL when hearing other ideas.</li> <li>4. Students are RESPECTFUL when commenting on other ideas...</li> </ol> <p style="text-align: center;"><i>"I respectfully disagree with Joshua. I believe 2 is in the middle because I subtracted and did not use addition."</i></p>

PROCESS STEPS	TEACHER LANGUAGE
<b>1. TEACHER PRESENTS PROBLEM</b>	<p>"Let's see who will think intelligently about this problem."</p> <p>"I'm ready to hear all of your marvelous takes on what the answer to this will be."</p>
<b>2. STUDENTS FIGURE OUT ANSWER (Similar to you do)</b>	<p>"I love the hard work I see in the room."</p> <p>You all are really focused in this room and I love it."</p>
<b>3. STUDENTS SHARE THEIR ANSWERS</b>	<p>"Let me get all these down."</p> <p>"I want to get as many of your thoughts down as possible. This is really helping me see how you think."</p>
<b>4. STUDENTS SHARE THEIR THINKING</b>	<p>"Who would like to share their thinking?"</p> <p>"Who did it another way?"</p> <p>"How many solved it that way?"</p> <p>"How did you figure that out?"</p> <p>"Sam. Do you have any questions for Tom?"</p>
<b>5. THE CLASS AGREES ON THE "REAL" ANSWER</b>	<p>"Who can explain to John why the 6 should be divided?"</p>

## Common Number Talk Types

TYPE	CHARACTERISTICS	EXAMPLE
<b>Number of the Day</b>	<ul style="list-style-type: none"> <li>Select a number</li> <li>Students find multiple ways to arrive to that number using calculations</li> <li>Extension: They use methods you are currently studying – or whatever parameters you set (only exponents and addition).</li> </ul>	<p><b>27</b></p> $9 \times 3$ $5^2 + 2$ $4^2 + 11$
<b>Number Lines</b>	<ul style="list-style-type: none"> <li>Draw a number line and plot numbers on it</li> <li>Students find the middle of two numbers or are given the middle and asked to find the edge.</li> <li>Extension: Do not use whole numbers. Use fractions, integers, and decimals.</li> </ul>	 <p><b>What number is in the middle of the numbers shown?</b></p>
<b>Number Strings</b>	<ul style="list-style-type: none"> <li>Start with a simple computation that helps illustrate a rule or truth.</li> <li>As students answer, make sure they describe how the simpler problem helps solve the new and how they are breaking a part numbers and putting them back together.</li> </ul>	$2 \times 5$ $4 \times 5$ $8 \times 5$ $16 \times 5$ $32 \times 5$ $48 \times 5$ $48 \times 0.5$ $48 \times 0.05$ $48 \times 0.25$
<b>Concepts of Equality</b>	<ul style="list-style-type: none"> <li>Present student with an equation with a missing number.</li> <li>Students separate, combine, alter numbers to solve the problem.</li> </ul>	$7 + 6 = \underline{\quad} + 5$ <p><b>Example:</b> Broke 6 into (1+5). Added the 1 back to 7. now I have 8+5. So the missing number is 8.</p> $12 + 9 = 10 + 8 + c$
<b>Number Trains</b>	<ul style="list-style-type: none"> <li>Verbal examples and nothing written</li> <li>Students use auditory modality to focus in on questioning to determine answer.</li> <li>No order of operations used because the train goes in the order spoken.</li> </ul>	<p>Your number is 200. Now divide by 2. Take 25% of that. Subtract 5. Find 1/5.</p> <p><b>What is your new number?</b></p>
<b>Percentage Understandings</b>	<ul style="list-style-type: none"> <li>Can be a number string or word problem</li> <li>Students break apart and combine numbers to simplify their mental process.</li> </ul>	$10\%$ of 780 $20\%$ of 780 $23\%$ of 780 $25\%$ of 782 <p style="text-align: center;"><b>OR</b></p> <p>After a 20% markup, Mr. Jones paid \$80 for a new pair of Sperry's. What was the original price?</p>

# NUMBER TALKS

Title: \_\_\_\_\_

Time Limit: \_\_\_\_\_

TYPE: Circle One

# of the Day

Number Lines

Number  
Strings

Equality

Number  
Trains

Percents

Key Tactics

#s are made from  
smaller #s

#s can be separated  
or combined

The small helps with  
the big

#s are organized into  
groups of ten

Problem(s)

Predicted  
Student  
Reactions

Reflection Note  
(For future  
Number Talks)

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