Number Talk Guide – Quarter 1
2nd Grade

Adapted from - Number Talks: Helping Children Build Mental Math and Computation Strategies
By, Sherry Parrish

Addition and Subtraction Number Talks

The purpose of number talks in second grade is to provide students with opportunities to build computational fluency. Number talks should be designed to help students understand and easily use strategies to make addition easier. During number talks students develop mental strategies based on patterns (making ten, fact families, doubles). They begin to look for and further develop strategies that make computation more efficient. Students also practice their mathematical communication skills as they participate in mathematical discussions.

Number Talks facilitate discussions of Standards for Mathematical Practice 1, 2, 3, 6, 7, 8.

Second Grade Number Talks

What is a number talk?

A number talk is a short (10-15 minute), ongoing daily routine that provides students with meaningful practice with computation. Tools should be used during second grade number talks to provide a context for reasoning with numbers. Some examples of tools appropriate for second grade are rekenreks, ten-frames, double ten-frames, open number lines, and hundred charts. When using these tools it is helpful to record number sentences to match the students’ thinking.

What is the format for number talks?

- Teacher presents the problem.
- Students figure out the answer on their own.
- Students share answers – four or five students volunteer to share their answers and the teacher records them on the board.
- Students share thinking – three or four students volunteer to share their strategy. The teacher records the students’ thinking.
- The class agrees on the “real” answer for the problem.
- The steps are repeated for additional problems.

Note: During a number talk, the teacher only serves as a recorder and facilitator, not as a teacher.
What is the teacher’s role during number talks?
The teacher
• provides a safe environment where each child’s thinking is valued.
• selects groups or strings of problems that allow access to all children.
• selects problems that intentionally highlight mathematical concepts.
• focuses on how children got the answer.
• provides wait time.
• shifts focus from “see what I see”, to “What do you (the child) see?”
• records, clarifies, restates.
• realizes that if the children don’t “get it”, then it is the teacher’s responsibility to figure out misconceptions or lack of proficiency and to begin instruction at that point.

What questions do teachers ask?
• Who would like to share their thinking?
• How did you figure it out?
• Who did it another way?
• How did you think about that?
• What strategy did you use?
• How many people solved it the same way Billy did?
• Does anyone have any questions for Billy?
• Billy, can you tell us where you got that 5?
• How did you figure that out?
• What was the first thing your eyes saw, or your brain did?
• Which strategies seem to be efficient for this problem?
Suggested Progression of Number Talks
for the Second Grade Year

**August**

Number talks in August should focus on facts within 10. The following addition strategies should be practiced: “Counting All” and “Counting On”. The following subtraction strategies should be practiced: “Removal” and “Adding Up”.

Use “Counting All” and “Counting On” strategies for addition. Use “Adding Up” or “Removal” strategies for Subtraction.

Begin the month by using using rekenreks, or ten-frames to provide a context as students begin to reason with numbers. When using these tools it is helpful to record number sentences to match the students’ thinking. In second grade students need to be fluent in facts to 20! Take away the ten frames and rekenreks as soon as possible.

**How to Use Rekenreks for the “Counting On” Strategy**

Show students 6 on top and 3 on bottom. Have them tell you how many beads are shown. Talk about how to use the “Counting On” strategy. I knew there was 6 on top (five red and one white). Then I started with the number 6 in my head and added on 3 more….7,8,9.

Use these visuals to practice counting on for a couple of weeks, then transition to the number sentences. Use any number sentence that has a sum equal or less than ten and write on board. Allow students to find the answer using the counting on or counting all strategy.

**How to Use Rekenreks for the “Removal” Strategy**

Show students 9 beads on rekenrek. Remove 4. How many are left?

**How to Use Rekenreks for the “Adding Up” Strategy**

Show students 8 beads on rekenrek. Tell them the fact is 8 – 3. Have students start at the 3 on the rekenrek and count up to the 8.
September

Focus on combinations to 20; Doubles/Near Doubles strategy
(and review any strategies previously learned for addition and subtraction facts)

Number talks in September will continue working on the combinations to ten and bring in problems within 20. Introduce the strategy “Doubles/Near Doubles”. When using the doubles / near-doubles strategy, students adjust one or both of the numbers to create a double or near double combination. When students use doubles / near doubles, they are creating equivalent but easier or known sums.

Begin the month by using using rekenreks, or double ten-frames to provide a context as students begin to reason with numbers. When using these tools it is helpful to record number sentences to match the students’ thinking.

Use these visuals to practice Doubles/Near Doubles for a couple of weeks, then transition to the number sentences. Use any number sentence that has a sum equal or less than ten and write on board. Allow students to find the answer using the Doubles/Near Doubles strategy. In second grade students need to be fluent in facts to 20! Take away the ten frames and rekenreks as soon as possible.

How to Use Rekenreks for the “Doubles/Near Doubles” Strategy
Show 5 beads on top and 6 beads on bottom. Show students how to see 5 + 5 is 10 and one more from the bottom row makes it 11.

How to Use Double Ten-Frames (Doubles/Near Doubles)

Directions: Double ten-frame talks should consist of 3 to 5 problems used in a single session. As each problem is shown, ask students, “How many dots do you see? How do you see them?”
October

**Focus on** combinations to 20; making ten strategy
(and review any previously learned strategy for addition/subtraction facts)

During the month of October, students should work on combinations within 20 while using the strategy “Making Ten”. Begin by using using rekenreks or double ten frames (making ten) to provide a context as students begin to reason with numbers. When using these tools it is helpful to record number sentences to match the students’ thinking. Use rekenreks and double ten-frames for a couple of weeks and then transition to the number sentences. In second grade students need to be fluent in facts to 20! Take away the ten frames and rekenreks as soon as possible.

### How to Use Double Ten-Frames (Making Ten)

**Directions:** Double ten-frame talks should consist of 3 to 5 problems used in a single session. As each problem is shown, ask students, “How many dots do you see? How do you see them?”

<table>
<thead>
<tr>
<th><img src="image1" alt="Double Ten-Frame Example 1" /></th>
<th><img src="image2" alt="Double Ten-Frame Example 2" /></th>
<th><img src="image3" alt="Double Ten-Frame Example 3" /></th>
<th><img src="image4" alt="Double Ten-Frame Example 4" /></th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image5" alt="Double Ten-Frame Example 5" /></td>
<td><img src="image6" alt="Double Ten-Frame Example 6" /></td>
<td><img src="image7" alt="Double Ten-Frame Example 7" /></td>
<td><img src="image8" alt="Double Ten-Frame Example 8" /></td>
</tr>
</tbody>
</table>

Look at the first example 4 + 6. Students will see that they can quickly take that extra one from the bottom ten frame and move it to the top. Now the problem becomes 5 + 5 which is much easier to do in your head.

### How to Use Rekenreks (Making Ten)

Show students 4 on top and 7 on bottom. That makes the problem 4 + 7. Show students it’s easier to make a ten in your mind. Move 3 from the 4 on the top to the bottom so now the problem is 10 + 1.
November

Focus on Addition and Subtraction Facts within 20 using all strategies learned in previous months.

December

Focus on Addition within 100 using the strategy “Breaking Into Place Value” and “Sketching”.

During the month of December, students will work on adding within 100 while using the strategies of “Breaking Into Place Value” and “Sketching”.

January

Focus on Add within 100 using the “Friendly Number” strategy, “Breaking Into Place Value” strategy, and “Sketching” Strategies.

During the month of January, students will practice using the “Friendly Number”, “Breaking Into Place Value” Strategy, and “Sketching” to add within 100.

This would be a great time to start mixing up problems so that students have the opportunity to experiment with using the most efficient strategy.

Here are some sample problems that can be used throughout the month of January.

These problems lend themselves well to “Friendly Numbers”.

<table>
<thead>
<tr>
<th>49 + 27</th>
<th>79 + 14</th>
<th>18 + 23</th>
<th>48 + 25</th>
<th>51 + 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 + 24</td>
<td>59 + 22</td>
<td>39 + 43</td>
<td>69 + 22</td>
<td>44 + 19</td>
</tr>
</tbody>
</table>
February

**Focus on** Subtraction within 100 using sketching or adding up with blank numberline. During the month of February, students need to practice solving subtraction problems using the strategies of “sketching” or “adding up with blank numberlines”.

March

**Focus on** addition and subtraction within 100 (students choose strategy—encourage students to solve the problem more than one way)

Practice subtraction or addition problems within 100 on the board everyday. Allow students to solve the problem. Then share the strategies they used. Have a discussion about what strategies might have been more efficient than others.

April/May

**Focus on** addition and subtraction within 1000 using strategies previously learned and/or base ten blocks.