

**Addition and Subtraction Case Study**

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### **First Grade Addition and Subtraction Case Study**

In this first-grade classroom, there is a total of 19 students. The case study information revolves around student's addition and subtraction understandings using a testing of CBM Computation. Students were tested using the CBM Computation on a two-week basis. Using all of this information to lead to a plan that two groups of students will need interventions.

Since there is no documentation on when these assessments were taken for example towards the fall, winter, or spring, and additionally where this first-grade classroom is expected to be at in their addition and subtraction understanding. I took the whole class's week one scores and averaged them, receiving an average of 5 points. Then I took the whole class's week two scores and averaged them, receiving an average of 6 points. Using this average number of both week one and week two is one aspect of how I based my instructional groups on.

The first group that will need further instruction is Daniel, Kelly, Ilene, Paul, and NaKeiya. I choose to group these individuals because these students had significantly low scores of 0,1, 2, and 3 which were below average in both weeks one and two. Based on their score differences from week one to week two, I concluded that they needed significant further instruction.

The second group that will need further instruction is Emily, Cynthia, and Taylor. These students were grouped because Cynthia and Taylor had above-average scores during week one and fell below average on week two. While Emily had a below-average score both week one and two she had more understanding from the students in the first group but a similar understanding to Cynthia and Taylor.

### **Goal Statements**

Group One Goal Statement: When give the CBM Computation in addition and subtraction facts students will be able to solve 5 problems correctly within 2 minutes.

Group Two Goal Statement: When given the CBM Computation in addition and subtraction facts students will be able to solve 6 problems correctly within 2 minutes.

## Timeline

**Case Study Plan Timeline**  
Addition and Subtraction

**Day One**

- 1) Basic Re-teach of what it means to add and subtract
- 2) Hughes Pg. 68 Connection Cubes
- Formative Assessment: Exit Ticket 2 addition/2 subtraction problems
- Practice CBM for 2 minutes.

**Day Two**

- 1) Using a number line strategy
- Counting On
- Counting Back
- Hughes Pg. 92 & 94
- Formative Assessment: Task Card one for addition and one for subtraction.
- Practice CBM for 2 minutes.

**Day Three**

- Group One: Adding/Subtracting with Picture Strategy
- Hughes Pg. 86
- Group Two: Looking for Doubles
- Hughes Pg. 80 & 82
- Formative Assessment: White Board Check (check for understanding list documentation)
- Practice CBM for 2 minutes.

**Day Four**

- Group One: Looking for Doubles
- Hughes Page. 80 & 82
- Group Two: Adding/Subtracting Using Doubles
- Hughes Page 118 & 120
- Formative Assessment: Explain/Show to a partner
- Practice CMB for 2 minutes.

**Day Five**

- Group One: Adding/Subtracting Using Doubles
- Hughes Pg. 118 & 120
- Practice CBM for 2 minutes and Review.
- Group Two: Practice CBM for 2 minutes and Review.
- Formative Assessment: Practice CMB for 2 minutes.

<https://padlet.com/sarahmertz85/tstaaqw1f622fg62>

This is a brief descriptive timeline created from my plans to meet the groups of students who need further instruction on their addition and subtraction facts.

## Plan to Meet Goals

For each day of the week, I will be doing each of these plans in small group instruction. The students that needed further instruction were grouped into group one and group two. I will be using Number Talk strategies from *Number Talks: for Kindergarten, 1<sup>st</sup>, and 2<sup>nd</sup> Grade Teacher Book* by Nancy Hughes (2019). Students will be taught the Number Talk strategy along with daily reinforced practice on their white boards with manipulatives.

Day One: On the first day we will be specifically focusing on a basic re-tech of addition and subtraction. Focusing on what does it mean when we are adding and subtracting. When we add we are adding on and when we are subtracting we are taking away. Modeling Number Talks

if I have 5 connecting cubes and I connect 2 more cubes, I will have a total of 7 cubes. I know that I can take the 7 connecting cubes and snap off 2 cubes to give me 5 cubes (Hughes, 2019, pg. 68). My formative assessment will include students completing an exit ticket on a note card with 2 addition and 2 subtraction problems using the connecting cubes. Lastly, students will do a practice run on the CBM Computation for 2 minutes and record their scores for data points.

Day Two: On day two we will focus on the strategy of using a number line to count on and count back. Hughes (2019), for addition students will use a number line to count on (pg. 92). Hughes (2019), for subtraction students will use a number line to count back. (pg. 94). Modeling and practicing I begin at 5 and count up 2 more (or make 2 jumps) to reach 7 ( $5 + 2 = 7$ ). Again, with subtracting modeling and practicing starting with the larger number 5 on the number line, and I could back 2 jumps until I reach 3 ( $5 - 2 = 3$ ). My formative assessment will include students completing 2 task card using a number line to add and subtract. Additionally, students will do a practice run on the CBM Computation for 2 minutes and record their scores for data points.

Day Three: On day three group one and two will be focusing on different activities. Group one will be focusing on the Number Talk strategy on the farm using picture strategies (Hughes, 2019 p. 86.). Students will be looking at pictures that represent a number of objects compared to another number of objects. For example, Hughes (2019) it shows a picture of four people and five farm animals. I would be modeling/asking students what we see, how many people/animals we see, are there more animals/people, and lastly how can we write a number sentence to match this story. Then having the students practice writing the equations and solving them. Group two will be focusing on looking for doubles strategy using connecting cubes. Assisting students in focusing on visualizing doubles using connecting cubes. For example,

Hughes (2019) if I compare 7 connecting cubes with 3 connecting cubes. They can see that in 7 there are 3 cubes and that  $3 + 3$  is a double making 6. Then there are 4 left over so  $4 + 6$  equals 10 (pg. 80 & 82). My formative assessment for both group one and two will be using the white board to check for understanding. I will document by using a check for understanding list. Additionally, I will have students do a practice run on the CBM Computation for 2 minutes and record their scores for data points.

Day Four: On day four group one and group two will be focusing on different strategies. Group one will be focusing on looking for doubles using connecting cubes strategy (Hughes 2019, pg. 80-82). Assisting students in visually seeing doubles to add and subtract.

Group two will be focusing on adding using doubles (Hughes 2019, pg. 118-120). Using what they learned the previous day about using doubles with connecting cubes now they are going to use this strategy with the equation. For example, if I have  $5 + 6$  I can decompose 6 to make 5. Taking  $5 + 5$  is a double to make 10 and then I need to add one more to make 11. Having the students use their visual strategy from the previous day to implement in the equation. The formative assessment that will be used for both groups is to explain/show the strategy to a partner. Additionally, I will have students do a practice run on the CBM Computation for 2 minutes and just record their scores for data points.

Day Five: For the last day groups one and two will be focusing on different activities once again. Group one will focus on adding/subtracting using doubles (Hughes 2019, pg. 118-120). Additionally, we will have a final practice run of the CBM for 2 minutes. After the 2 minutes students will review their answers correct or incorrect. We will meet one on one to discuss what strategies were used to get correct answers and where the student had challenges on

incorrect answers. Lastly, focusing on what strategies we learned through the week that can assist them in these challenges.

Group Two will focus on just a final practice run of the CBM for 2 minutes. After the 2 minutes students will review their answers correct or incorrect. We will meet one on one to discuss what strategies were used to get correct answers and where the student had challenges on incorrect answers. Lastly, focusing on what strategies we learned through the week that can assist them in these challenges.

### **Conclusion**

Addition and subtraction skills are essential skills that need to be practiced and supported daily for students. In order for students to be proficient in their basic mathematic skills they need to have a solid knowledge of number relationship that guides their thinking and reasoning in math. Using Number Talks strategy helps reinforce reasoning and tools to provide students with multiple strategies in a variety of way to make sense of math (Hughes, 2019). The many different strategies planned using Number Talks will guide students in their thinking and reasoning to solve addition and subtraction problems.

## References

Hughes, N. (2019). *Number Talks: For Kindergarten, 1<sup>st</sup>, and 2<sup>nd</sup> Grade Teachers*.

Ulysses Press.