SCAFFOLDING TASKS: "LET'S THINK ABOUT ADDITION AND SUBTRACTION"

Adapted from North Carolina's Core Essentials Mathematics Program

STANDARDS FOR MATHEMATICAL CONTENT

MCC.3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

STANDARDS FOR MATHEMATICAL PRACTICE

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
8. Look for and express regularity in repeated reasoning**.**

BACKGROUND

According to research, students will develop many different strategies for addition and subtraction. As a teacher, you will want to make sure that students have at least 2 efficient, mathematically correct, and useful strategies that can be used with various numbers. Number Talks are a great way to develop these strategies and is a forum for sharing these amongst their peers.

It is not unreasonable for third grade students to mentally add and subtract two digit numbers, however you must not push **all** students to pure mental computation. (Van De Walle, Teaching Student Centered Mathematics, Vol. I, p. 108)

ESSENTIAL QUESTIONS

- How can I use addition and subtraction to help me solve real world problems?
- How can I show what I know about addition and subtraction and problem solving?
- How do we use addition and subtraction to tell number stories?
- How are addition and subtraction alike and different?
- How can I use what I understand about addition and subtraction in word problems?
- What is a number sentence and how can I use it to solve word problems?
- How can I use what I understand about money to solve word problems?

MATERIALS

- Math Journals (or paper)

- Manipulatives/cut outs (to help students create models for their problems)
- Chart Paper
- "Let's Learn About Addition and Subtraction" recording sheet

GROUPING

Students may be grouped individually, in pairs, or in small groups at the teacher's discretion.

TASK DESCRIPTION, DEVELOPMENT AND DISCUSSION

Although addition and subtraction were covered in 2nd grade, students can still benefit from acting the stories out. Students should use pictures, words and numbers to solve the word problems.

Part I
The teacher will begin by asking students to respond to the following questions in their math journals:

- There is a tree with five branches. On each branch there are three nests. In each nest there are four eggs. How many eggs are there in all?

Once students are finished, the class will discuss the strategies they used to add. There should also be discussion about using subtraction to verify results. This information may also be used to create an anchor chart.

Part II
In small groups, students will complete the "Figuring Out Addition and Subtraction" recording sheet. Students should be encouraged to solve their problems in multiple ways, using pictures, numbers, and words.

- Your school cafeteria sells popsicles for twenty five cents, nutty buddies for forty cents, and ice cream cones for thirty cents. If a student spends five dollars in the month of October for these treats, what could the student have bought? List as many combinations as you can find.
- Roberto is saving for a pair of tennis shoes that costs $55. He has $15 now. If he saves $3 a week, for how many weeks will Roberto need to save in order to buy the shoes?

Part III
In partner groups, allow students to answer the following question on chart paper:

Make a list of your favorite TV shows and the duration of each. If you watched all these shows in one week, how much time did you spend watching television?

QUESTIONS FOR FORMATIVE ASSESSMENT

- How would you explain addition and subtraction?
- In what situations should you add? Subtract?

- How can you use addition and subtraction to help solve real world problems?
- What strategies can you use to help you add and subtract accurately?
- How are addition and subtraction alike and different?
- What is a number sentence and how can I use it to solve word problems?

DIFERENTIATION

Extension

- In basketball, a player can score only three-point baskets and two-point baskets. **If a player scored 37 points, what combinations of baskets could he have made?**
- Draw a bullseye or target. Label each circular area with the following values: 6, 7, 8, 9. Imagine this situation and solve the problem below.

Five darts were thrown at the target and it was hit each time. One number was hit twice and another was hit three times. The total score was 41. Which numbers were hit? What scores other than 41 were possible?

Intervention

- Students may use manipulatives such as counters, and a calculator
- Work with students in a guided group and assist with thoughtful questioning

Name_____Date_____

Let's Think Addition and Subtraction!

***Try to solve each problem in more than one way using pictures, numbers, and words.**

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