CONSTRUCTING TASK: I HAVE A STORY, YOU HAVE A STORY

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.
6. Attend to precision.
8. Look for and express regularity in repeated reasoning.

BACKGROUND KNOWLEDGE

Students should be familiar with the concept of solving word problems in math and with seeing symbols for unknowns, such as squares or triangles.
Some students will have difficulty with ____ + 8 = 85 simply because they are so accustomed to seeing a number first. Students need to understand that they may subtract the given number from 85 or count up from 8 to 85 using an empty number line to find the value of the missing number. We also want students to recognize that ___ + 8 yields the same sum as 8 + ___ due to the commutative property of addition.
Students need experiences with many different addition problem types. See the examples on pages 6 and 7. Provide students with opportunities to solve a variety of problems presented in varying contexts. Then allow students to write similar stories providing experiences in both creating and solving many types of problems.

ESSENTIAL QUESTIONS

- 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?

MATERIALS

- White board, overhead projector, or interactive white board for whole group instruction
- "I Have a Story, You Have a Story" recording sheets for small group or cooperative learning groups

GROUPING

Whole/Small Group/Partner Task

TASK DESCRIPTION, DEVELOPMENT AND DISCUSSION

When students make up their own number stories, teachers gain insight into the students' understanding of the problem solving process. Simplify or extend these situations to help students grasp how to solve addition problems with the use of subtraction.

Before students solve the problems in partners or small groups, model the process of solving and writing a similar story problem with the whole class (or rotating with small groups). Use a missing addend problem similar to those on the student sheet.

Task Description

Students will solve two story problems and write two similar story problems.

1. Here is my story:
The video game store is stocking up on the hottest new game. They already have 127 on the shelf, but they are selling quickly. They just received a new shipment today and now they have 384 copies of the game. How many copies of the game came in today's shipment?
Now write a similar story about having quarters in your pocket and later finding a hole in your pocket.
How much money fell through the hole in your pocket? How do you know?

2. Here is another story:
I have 137 marbles in a jar. My brother was playing football in the house and knocked the jar off of the table. I was only able to find 119 marbles. How many are still missing?
$\square + 119 = 137$
What number goes in the box? How do you know?

3. Write a story for this number sentence:
$56 + \square = 190.$
What number goes in the box? How do you know?

FORMATIVE ASSESSMENT QUESTIONS

- How much money was there at the beginning?
- What do you know? What do you need to find out? How can you find it out?
- What is a number sentence and what must it include?
- What information will you give in your story? What information needs to be found?

- What strategies did you use to solve the problem?
- How do you know your answer is correct?

DIFFERENTIATION

Extension

- For the first problem on the student sheet, have students determine the value of the money that fell through the pocket. For the third problem, have students find the value of 85 quarters. Also, the stories students create can be extended in a similar manner.
- Have students create their own subtraction stories where the minuend is unknown. (In the subtraction problem 5 – 3 = 2, 5 is the minuend, 3 is the subtrahend, and 2 is the difference.)

Intervention

- Provide a story frame to assist students in organizing and writing a number story.
- Some students may have difficulty with ____ + 8 = 85 simply because they are accustomed to seeing a number first, rather than an unknown quantity. They may need additional experiences with this format to understand that subtracting an addend from the sum will give the remaining addend. Students also should understand that ___ + 8 yields the same sum as 8 + ___ due to the commutative property of addition.

TECHNOLOGY CONNECTION

- http://www.cdli.ca/CITE/math_problems.htm Provides teachers with resources for a variety of word problems at different levels

Name _____Date _____

I Have a Story, You Have a Story

1. Here is my story: The video game store is stocking up on the hottest new game. They already have 127 on the shelf, but they are selling quickly. They just received a new shipment today and now they have 384 copies of the game. How many copies of the game came in today's shipment?	2.Now write a similar story about having a large shipment come into a store.

3. Here is another story: I have 137 marbles in a jar. My brother was playing football in the house and knocked the jar off of the table. I was only able to find 119 marbles. How many are still missing? What number goes in the box? How do you know? □ + 119 = 137	4. Write a story for this number sentence: 56 + □ = 190 What number goes in the box? How do you know?