

## **CONSTRUCTING TASK: Tokens to Spend**

Approximately 1 Day



### **STANDARDS FOR MATHEMATICAL CONTENT**

**MCC2.NBT.6** Add up to four two-digit numbers using strategies based on place value and properties of operations.

**MCC2.NBT.9** Explain why addition and subtraction strategies work, using place value and the properties of operations.

**MCC.2.MD.8** Solve word problems involving **dollar bills, quarters, dimes, nickels, and pennies, using \$ and ¢ symbols** appropriately. *Example: If you have 2 dimes and 3 pennies, how many cents do you have?*

### **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.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

**\*\*\*Mathematical Practices 1 and 6 should be evident in EVERY lesson.\*\*\***

### **BACKGROUND KNOWLEDGE**

(Information quoted from Van de Walle and Lovin, Teaching Student-Centered Mathematics: Grades K-3, page 150)

In 2<sup>nd</sup> grade students will be working with money for the first time. Limit problems to the use of just dollar and cents symbols. There should be no decimal notation for money at this point. Students need to understand the relationship between quantity and value and be able to relate money amounts to whole-number place value and base-ten understandings

“The recognition of coins is not a mathematical skill at all. The names of our coins are conventions of our social system. Students learn these names the same way that they learn the names of any physical objects in their daily environment- through exposure and repetition.

The value of each coin- a nickel is worth 5¢, a dime is worth 10¢, and so on- is also a convention that students must simply be told. However, a student can say, “A dime is worth 10 cents” and not really understand what that means. For these values to make sense, students have to have an

understanding of 5, 10, and 25. More than that, they need to be able to think of these quantities without seeing countable objects. Nowhere else do we say, “this is five,” while pointing to a single item. A child whose number concepts remain tied to counts of objects is not going to be able to understand the values of coins. The social concept of having an *equivalent worth* or *value* is nontrivial for the young child. If your students seem to have good concepts of small numbers but still have difficulties with the values of single coins, then your lessons should focus on purchase power- a dime can *buy the same thing* that 10 pennies can buy.”

### **ESSENTIAL QUESTIONS**

- Why is it important to be able to count amounts of money?
- What are the different ways we can represent an amount of money?
- How does mental math help us calculate more quickly and develop an internal sense of numbers?

### **MATERIALS**

- Recording sheet with story about Mia
- Play money for intervention purposes

### **GROUPING**

Partners /Individual

### **TASK DESCRIPTION, DEVELOPMENT AND DISCUSSION**

Explain to students the following scenario:

Mia has \$30 to spend on toys that she will donate to a local charity for needy children. This is the only store she is going to, and she wants to spend all of her money there. What combinations of toys can she buy in order to spend all the tokens?

Together as a class, come up with one solution and record the solution on chart paper. While the students are discussing the solution, encourage additional strategies by asking the students to explain how they came to their answers. Then have the students come up with as many possible combinations as they can to ensure that Mia uses all of her money.

Come back together as a whole class and share combinations. Record what students share. When a combination is repeated (inevitably, this will happen) ask if there is a better way to record the information to keep track of all possible combinations (chart or table).

### **FORMATIVE ASSESSMENT QUESTIONS**

- How is working with numbers expressed as money amounts similar to working with other numbers that are not expressed as money amounts?

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*Second Grade Mathematics • Unit 4*

- What strategies were you using to mentally calculate, (keep track of), the number of tokens spent?
- How did you figure out multiple possibilities of combinations for spending Mia's money?
- How did you record your combinations to keep up with your work?
- Could someone else look at your work and understand how you thought about and solved this problem?

**DIFFERENTIATION**

**Extension**



- Allow Mia to earn/spend more money and encourage students to use a chart, table or some other organizer to record every possible combination.

**Intervention**

- Some students may still be having difficulty counting with money. Allow these students opportunities to use actual dollar bills or copies of them (play money), paper and pencil, as well as a number line or number chart to keep track of their totals.

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Common Core Georgia Performance Standards Framework  
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Name: \_\_\_\_\_

Amusement Center Store				
				
Yo Yo \$1	Doll \$2	Duckie \$1	Tractor \$5	Airplane \$6
				
Ball \$2	Racecar \$7	Dog \$4	Jump Rope \$1	Car \$5
				
Elephant \$3	Bear \$4	Xylophone \$7	Tank \$6	Checkers \$4
				
Boat \$8	Train \$6	Jacks \$2	Truck \$6	

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Show how you found your solutions.