

## Grade 2

### Number Sense and Numeration

## Learning goal

We are learning that there are many ways, or coin combinations we can make, to show the same amount of money.

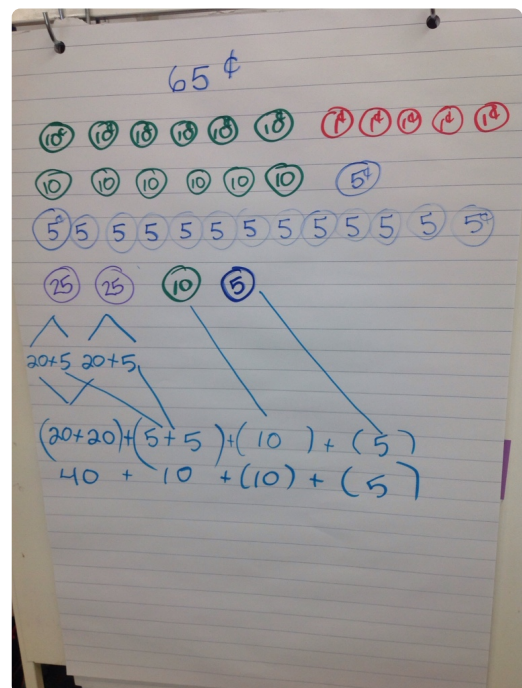
## Minds On

"I have lost 65 cents, can you find it for me?"

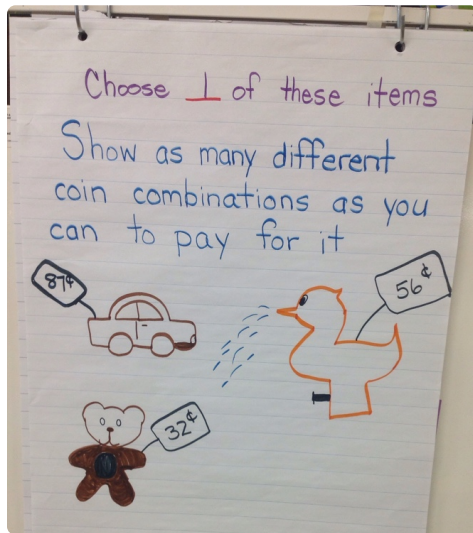
- students, in partners, use the money manipulatives to make 65 cents
  - share their combinations in a whole class discussion, and teacher annotates on chart paper
  - look for patterns
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- One student returned to the carpet with a 50 dollar bill, a dime and a nickel. Teachers did not intervene, and when the student came back to the carpet some of the other students intervened and questioned his choice and he and his partner went back to the kit and traded it for two quarters...AHA moment!



Some of the students' coin combinations.



## Annotating student thinking.



## The Problem:

Students work in partners, coin manipulatives are available, and they are given markers and chart paper to make their thinking visible.

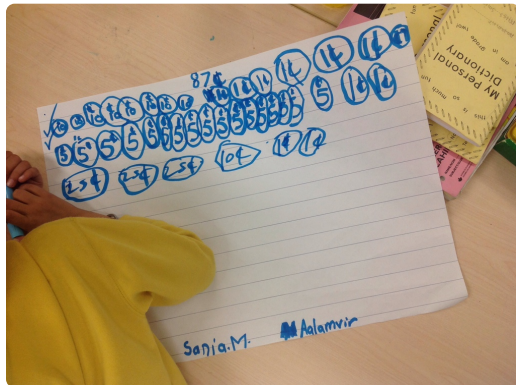
We have investigated the problem and predicted that students will use these strategies.



Strategy	Key Questions to Ask	Who and What	Order
Subitizing	How did you know it was that much?		
Skip Counting	Do you think there is another way to group the coins? Is there a more efficient way to count them up?		
Doubling	How did you know ...?		
Counting On	How did you know to start at that number?		
Repeated +	Why did you group the numbers that way?		
Splitting	How else could you break those numbers apart?		
Landmark #'s	What number could you start with? How could you make this a friendlier number?		

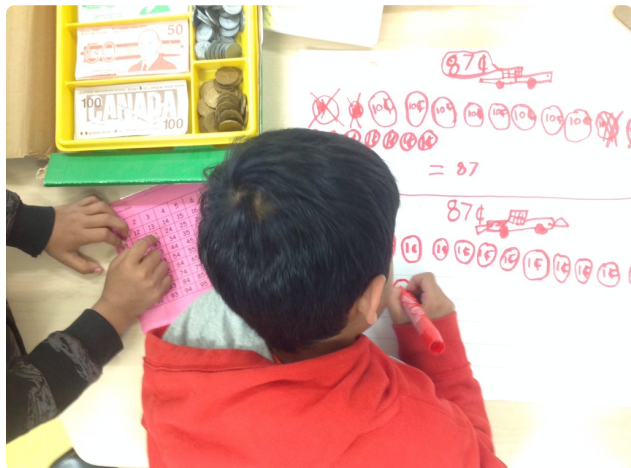
We also designed some probing and coaching questions to push student thinking. This becomes the pedagogical documentation tool, to determine who is using which strategy/strategies, and how they are using or representing them.

## The Student Work:



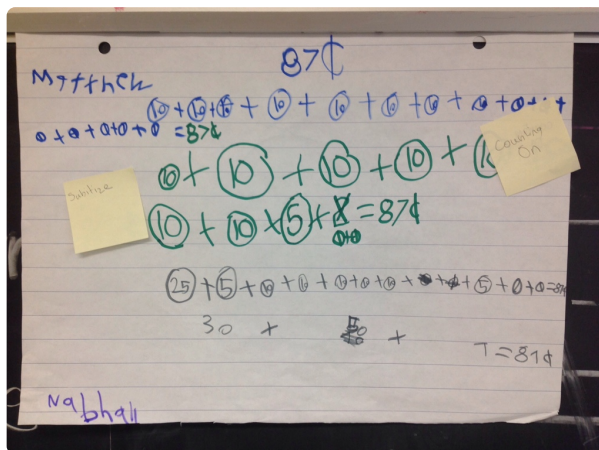
- skip counting by 10, and then counting on from 80 by one
- skip counting by fives to 85, then counting on by ones
- subitizing and conserving number: one student knew that three quarters was 75 cents, and then counted on 10 more, and then by ones
- are they splitting the numbers to make other combinations?

"Can you show me how you knew that using the coins?"

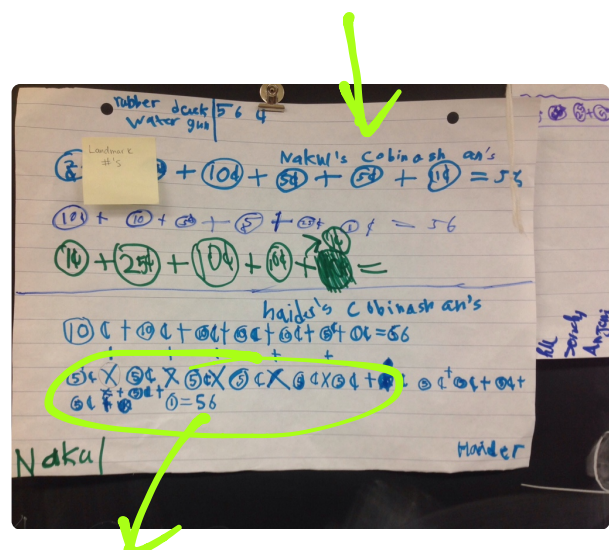


- Using a hundreds chart to count up by ones, 87 times, and drawing 87 pennies.
- is there a more efficient strategy?

- landmark, friendly number, fives to count up



- using addition and equals signs
- subitizing and counting on.



- using multiplication symbol

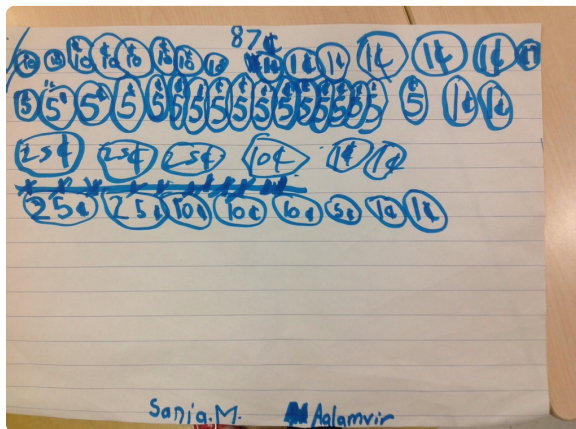


-turn and talk to your partner- how could we group these pennies together to count them more efficiently?

Which would use fewest coins?

-students came up with by: fives, by tens, by 25, and the teacher annotated this on the student work by circling the ones into these groupings, and modelled how to use the hundreds chart to make jumps of five and ten

-they knew that making 25s would use the fewest coins



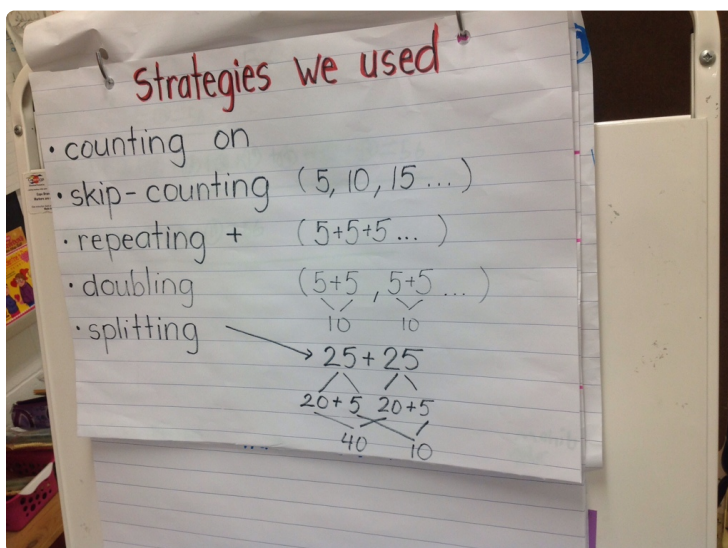
2. Exploring skip counting by 10, 5 and 25

-decomposing the dime to nickels, and how that relates to doubling

-decomposing the quarter to dimes and nickels, or splitting

-counting on from 75 cents (and subitizing, conserving number)

-connect the symbolic use of the addition and equals sign, relate to the strategy of repeated addition



We can name our strategies!