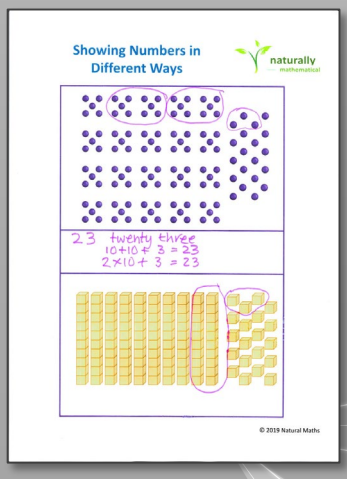
Sample Mental Routine

Different Ways Target Strategies

- representing numbers in different ways
- matching number sentences (equations to representations)
- reading and writing numbers in words and numerals
- partitions and combines numbers flexibly.

Resources

A *Showing Numbers* mini-whiteboard board for each student, made from Slide 5 of this file, laminated or in a plastic sleeve, and with a marker and eraser.



I like seeing the different ways that my students answer the mental routine questions on this chart.

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Sample Mental Routine

Closed Questions

1. In the middle space write 23 in words and numerals. Show how to make 23 as 20 and 3 more in the top space and as 2 tens and 3 more in the bottom space. Write a matched number sentence for each example (e.g. 20 + 3 , 2 lots of 10 and 3 more, 2 × 10 + 3)
2. Write the number 76 in words and numerals. Show how you can make 76 as 60 and some more in the top box and as 7 tens and some more in the bottom box. Write a matched number sentence for each example.
3. Write the number 103 in words and numerals. Show how to make 103 with 90 and some more in the top box and using as many 10s as you can in the bottom box. Write a matched number sentence equation for each example.
4. For my first diagram I wrote the equation 20 + 23 and for the second diagram I write the number sentence 4 lots of 10 and 3 more. What was my number and what did my representations look like?

Sample Mental Routine

Open Questions

1. I showed the number 13 in 2 different ways. What might they have been and what number sentences might I have used?
2. I made the number 63 in 2 different ways they both used more than 4 tens. How might I have done it and what number sentences might I have used.
3. I wrote 2 number sentences for the number 34 what might they have been and what would the matched representation look like?
4. My number is a friendly number, but I didn't make it with all 10s. What might my number be and how might I have made it?

It was good to see this as a response to Q2. The choice of -3 as the pattern element made it easy to get started.

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Sample Mental Routine

Flip Questions:

Make My Number

This is a game-like situation where students ask you yes/no questions so that they can represent your number in 2 different ways. Limit the range to reduce the number of questions to a manageable level. For the following clue:

"My number is in the 40s."

the following questions could be used:

Student: "In the top box did you loop more than 2 tens?"
Teacher: "Yes, so what does that tell us? There were 3 or 4 tens looped."
Student: "In the top box, did you loop more than 3 tens?"
Teacher: "Yes, so what can we mark on our boards? Yes, we know how that there must be 4 tens in the top box and only 3 tens in the bottom box.
Student: "Did you use between 2 and 5 ones?"
Teacher: "Yes , so how many ones might I have used?"
Student: "Is your number more than 44?"
Teacher: "Yes, so what do you know now? Yes, you can show how I represented my number in both boxes."

Showing Numbers in Different Ways

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