Grade:2 Critical concept: Skip counting

<table>
<tr><td>Curricular content

Skip counting: by 2’s, 5’s and 10’s
Starting at different numbers by 10’s is important</td><td rowspan="2">Examples and Strategies

Learning to skip count fluently is important for developing number sense. When you count multiples, teach students that is what they are called. This will make it much easier to understand the difference between factors and multiples later on.

Skip counting by 10’s starting at any number is very important for being able to add and subtract.
Make sure you can count by 10’s starting from any number, both forwards and backwards.

Example 13, 23, 33, 44, 53, 63, 73 etc
AND 83, 73, 63, 53 etc

When you count by 10’s starting at a number other than a multiple of 10 (for example, 16) you <u>are not counting multiples</u>, but you are still skip counting.

(Vocab hint: if the number can be evenly split into groups of the size you are counting (e.g. 5), then it is a multiple. Therefore 35 is a multiple of 5 but 37 is not.)</td></tr>
<tr><td>Language

Multiples: if you skip count 2, 4, 6, 8
Or 5, 10, 15, 20
Or 30, 40, 50, 60
For example, you are actually counting <u>multiples.</u></td></tr>
<tr><td></td><td>Where does this lead?

Skip counting by 10’s starting at any number leads to addition and subtraction strategies

Example: 54 + 32 can be thought of as 54 + 30 + 2 Think 54, 64, 74, 84 and 2 more.

Subtraction using skip counting by 10’s Example: 85 – 24 Think 85- 20- 4 Say 85, 75, 65 and 4 less is 61</td></tr>
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Grade 2

Critical concept: Addition and Subtraction to 20

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<td>Curricular content

Addition and subtraction to 20</td>
<td>Examples and Strategies

Strategies:
Doubles: example 7 + 7

Near doubles: example 7 + 6 should be able to think flexibly about this. You can do either 7 + 7 then subtract 1; OR you can think 6 + 6 and add 1

Compensation: this is where the anchor of 10 becomes so important. Use ten frames to illustrate.

Think “how many more to 10?”

Think 7 + 3 + 1 =

Addition and Subtraction by decomposition

<u>Addition</u>
13 + 5
= 10 + 3 + 5
= 10 + 8
= 18

<u>Subtraction</u>
a) 14 – 8 = is like 10-8 + 4 OR 14 – 4 – 4
b) 15 – 7 is like 10 – 7 + 5 OR 15 – 5 – 2

Think “how many to get to 10, then how many more to still subtract.
E.g. starting at 15 means 5 to get to 10, and 7 is 5 + 2 so take away 2 more</td>
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<tr>
<td>Language
Decomposition: breaking a number into its parts (not necessarily into place value parts)

Compensation: using “friendly” numbers (usually based around ten frames) to make the computation easier.</td>
<td>Where does this lead?

The same strategies are used in adding and subtracting larger numbers.</td>
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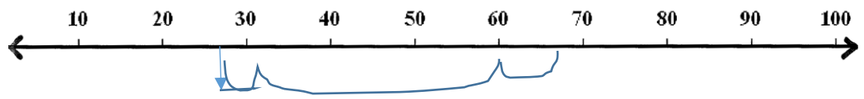
Grade 2

Curricular content	Examples and Strategies
Addition and Subtraction to 100	**<u>Decomposition in addition:</u>** can decompose one or all numbers into their parts Example 43 + 22 = 43 + (20 + 2) = 63 + 2 = 65 This is where it is important to be able to skip count by 10's starting at any number. 43 , 53, 63 then add 2. Example 2: 43 + 22 by decomposing and recomposing both numbers 40 + 3 + 20 + 2 (40 + 20) + (2 + 3) 60 + 5 = 65 **<u>Subtraction by decomposition</u>**: example 84 – 36 $84 - 30 - 6$ 84-30 requires counting back by 10's 84, 74, 64, 54 $54 - 6$ $54 - 4 - 2 = 48$ (this involves decomposing the 6 into the 4 it takes to get to 50, then 2 less than 50 **<u>Compensation in addition</u>** Example $27 + 34 =$ $27 + 3 + 31$ (27 needs 3 to get to the nearest 10 anchor of 30. Take the three from the 34) $30 + 31 = 61$ **<u>Compensation in subtraction</u>** Example $66 - 28$ We are looking for the magnitude of the difference between 28 and 64. We have to keep the difference the same even if we change one number. Take one number to the nearest 10. 28 needs 2 more to be at the nearest 10 so we give 2 to both numbers. $(66 + 2) - (28 + 2)$ $68 - 30 = 38$ **<u>Adding up to find the difference</u>** (using addition to find the difference between two numbers) You are looking to find out how far apart two numbers are on the number line. This is where all the sequencing work that happened in early primary will really pay off. Example: 66 -28  2 30 6 if you add all the distances together you will see that 28 and 66 are 38 apart – or the difference between 66 and 28 is 38
Language Decomposition: breaking the number into its parts. This doesn't always refer to breaking it into place value; we can decompose 11 to 7 and 4. Compensation: strategy where one number is changed to an easier number to work with. Usually this is the nearest 10. Bridging 10: using compensation to make the nearest "10" e.g. 28 +6 is thought of as 28 + 2 +4 For teacher information- language in subtraction is Minuend – subtrahend = difference e.g. 8 - 5 = 3	Where does this lead? Adding and subtracting all larger numbers! Example $323 + 248 =$ 300 + 20 + 3 +200 + 40 +8 500 + 60 +11 = 571

Compensation is different in addition and subtraction. In addition we need to keep the overall quantity the same, so we take from one number to give to the other to bring it to the nearest 10.

In Subtraction we need to keep the magnitude of the difference between the numbers the same. Therefore if we add to one number (or subtract from it) in order to get to the closest 10 then we need to treat the other number the same (and add or subtract the same amount)

Grade 2