

First Grade Math Parent Letter - Module 4:

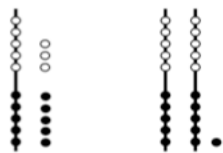
Place Value, Comparison, Addition and Subtraction to 40

This module builds on what students learned in module 2 about place value and using strategies to add and subtract numbers over 10. In the beginning of this module, students will move to working with multiple tens and ones, using a variety of tools to identify 1 more, 1 less, 10 more, and 10 less, as students learn to add or subtract like units (as shown to the right).

$$34 \xrightarrow{+1} 35 \quad 34 \xrightarrow{-1} 33$$

$$34 \xrightarrow{+10} 44 \quad 34 \xrightarrow{-10} 24$$

arrow notation

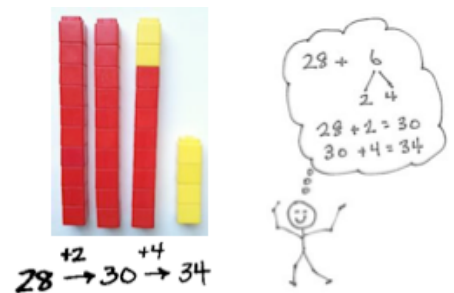


18 is less than 21

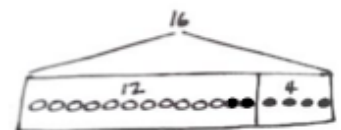


As the module continues, students compare quantities and begin using the symbols for greater than ($>$) and less than ($<$). Students demonstrate their understanding of place value when they recognize that 18 is less than 21 since 2 tens already have a greater value than 1 ten 8 ones. After students understand the concept, they are introduced to the mathematical symbols, using the story of the alligator whose hungry mouth always opens toward the greater number (as pictured to the left).

Moving on, students learn that, just as $3 + 1 = 4$, 3 tens + 1 ten = 4 tens. With this understanding, students add and subtract a multiple of 10 from another multiple of 10. Students move on to addition of multiples of 10 to numbers less than 40, e.g., $12 + 30$. From there, students use familiar strategies to add two-digit and single-digit numbers within 40. One strategy is making the next ten. For instance, when adding $28 + 6$, students break 6 into 2 and 4 so that they can make the next ten, which is 30, or 3 tens, and then add 4 to make 34 (as shown to the right).



Moving on, students will learn to solve word problems within 20 where either the result ($12 + 4 = ?$) or the change ($12 + ? = 16$) is unknown. In order to continue developing their conceptual knowledge, students will work on these problems through drawings. One method is the tape diagram, which helps students explore number relationships as they notice and discuss how the size of the boxes relate to the size of each part (as shown to the right).



As the module closes, students learn to be flexible in the way they see numbers. They learn to interpret numbers such as 25 as 1 ten and 15 ones as well as 2 tens and 5 ones and as 25 ones. Working with this concept supports student understanding when they try to add double-digit numbers, as shown below.

$$19 + 15$$

$$\begin{array}{r} 10 \quad 5 \\ \hline 19 + 10 = 29 \\ 29 + 5 = 34 \end{array}$$

Adding on ten first

$$19 + 15$$

$$\begin{array}{r} 1 \quad 14 \\ \hline 19 + 1 = 20 \\ 20 + 14 = 34 \end{array}$$

Adding to make the next ten first