

Grade 2 ~ Benchmark 1 ~ Instructional Support

The first benchmark is dedicated to developing an understanding of addition and subtraction beginning in block 1 with numbers 10 and below and moving from 10 to 100 by block 3. An emphasis is placed on helping children construct conceptual understanding of addition and subtraction through use of models and story problems. Additionally, the concept of equality and inequality is a theme throughout the benchmark. Place value with tens and ones supports the learning of addition and subtraction. A powerful tool for reinforcing daily exposure to these ideas is establishing daily routines during block 1 for daily review of these concepts (i.e. calendar, graphing, problem solving, addition/subtraction strategies). Additionally, you can prepare for upcoming blocks and benchmarks during this instructional time (i.e. time, money, etc.).

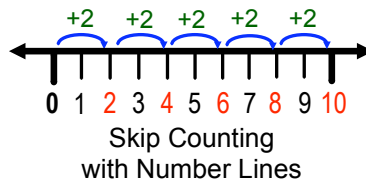
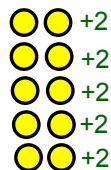
Block 1	Block 2	Block 3
<p>Addition/Subtraction and Data</p> <p>The data unit has been placed at the beginning of the school year to be used as a vehicle for creating a positive classroom climate. Students will build on addition and subtraction skills learned in first grade beginning with numbers less than 10. They also build patterns as a tool for acquiring skip-counting skills and relate that to repeated addition. They write story problems that relate to a given addition or subtraction equation.</p>	<p>Whole Number Relationships & Addition/Subtraction</p> <p>Even and odd numbers serve as a tool for thinking about relationships and patterns found in whole numbers. Students demonstrate an understanding of whole number relationships through models, pictorial and numerical representations. They develop vocabulary and notation for representing equations that are not equal (\neq). Finally, they begin developing quick recall of addition facts (up to $10+10$) and related subtraction facts. They also continue to work with story problems.</p>	<p>Place Value, Comparisons, Modeling of Two-digit Addition and Subtraction</p> <p>Students continue developing the language and strategies for working with equations that are not equal ($>$, $<$) and those that are equal ($=$). They develop base ten understanding up to 100 using models and numbers. Modeling addition and subtraction of two-digit whole numbers helps build greater understanding for traditional procedures. Students continue to work with story problems.</p>
<p>Making Comparisons Between Numbers can be found on the 1st Grade Benchmark 1 Instructional Support page.</p>	<p>Addition Models and Properties can be found on the 1st Grade Benchmark 2 Instructional Support page.</p>	<p>Subtraction Models can be found on the 1st Grade Benchmark 2 Instructional Support page.</p>

Skip Counting Patterns and Models

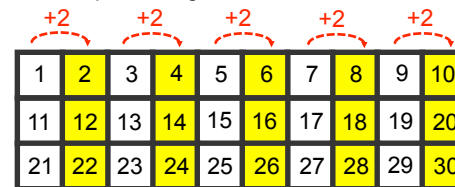
Jump	Total
1	2
2	4
3	6
4	8
5	10

Skip Counting in a Table

Skip Counting with Counters



Skip Counting on the Hundred's Chart

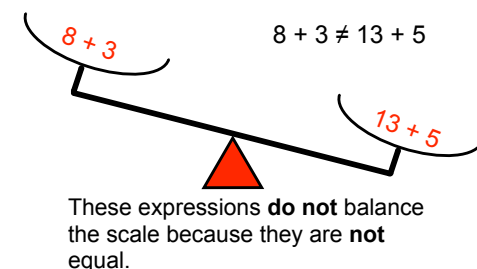
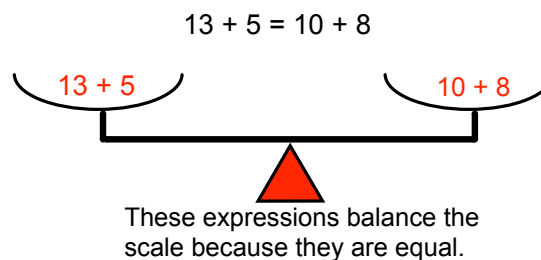


(partial chart shown)

Students begin working with these patterns in block 1 and continue throughout the year concluding in block 9 where the connection between skip counting, addition, and multiplication is solidified.

FOCUS: twos, threes, fives, tens
(Threes are the only new pattern in second grade.)

What Does the Equal Sign Mean? The equal sign is a symbol to show that what is on the left and right side of the sign are the same in value. It can represent the answer to a number sentence, but it isn't limited to that. Many students struggle to understand what the symbol means when two number sentences are linked by an equal sign such as $3 + 9 = \square + 8$. It is important that even at young ages, children recognize that the symbol means both sides of the equation are balanced.



Grade 2 ~ Benchmark 2 ~ Instructional Support

During this second benchmark, the range of numbers increases from 100 to 1,000. First, students represent these numbers in a variety of ways. The base-ten numeration system is complex and hands-on activities help students conceptualize the system. Next, addition of larger numbers is introduced. These concepts should be reinforced throughout the whole benchmark. Measurement concepts in this block build significantly on work done in first grade. The daily routines established in benchmark 1 should continue and include attention to time and money in benchmark 2. Daily routines could also include anything that needs review from benchmark 1 such as graphing, modeling of place value with blocks, or modeling of two-digit addition and subtraction.

Block 4	Block 5	Block 6
<p>Place Value to 1000</p> <p>The emphasis of this is moving place value ideas from 100 to 1,000. In order to do that, students compare and order numbers. They also compose and decompose numbers in a variety of ways. This prepares them for the work to be done in block 5 when operating with larger numbers.</p>	<p>Two- and Three-Digit Addition</p> <p>Students develop strategies and fluency with adding two- and three-digit numbers. They rely on the number representation work done in block 4 to build those strategies, which leads to fluency. Writing and solving story problems involving two- and three-digit numbers enables students to build conceptual understanding.</p>	<p>Measurement</p> <p>Students measure length in inches and centimeters, weight in pounds, and capacity in cups. Estimation is introduced through standard and non-standard measurements. A big measurement idea for the block is that the smaller the unit, the more iterations are needed to cover a given length. Finally, time and money are taught.</p>

Composition and Decomposition of Number

Flexible strategies for breaking up or recombining numbers move students toward greater fluency and understanding of number. This is a precursor to the development of more strategies and proficiency with addition and subtraction.

Number

342
300 40 2
↓
300 + 40 + 2

If a number is taken apart (decomposition) by place value, it is called **Expanded Form**.

342
300 20 20 2
↓
300 + 20 + 20 + 2

Numbers can be decomposed in a variety of ways, depending on the situation.

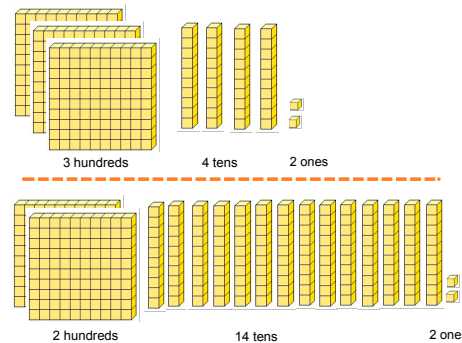
300
40
+ 2
342

If a number is recombined (composition) by place value, it is called **Standard Form**.

300
20
20
+ 2
342

Numbers can be recombined in a number of ways, depending on the situation.

Base-Ten Models



Base-ten blocks can be composed and decomposed in a variety of ways. Fluency with recognizing 14 tens as equivalent to 1 hundred and 4 tens will be significant as students move into regrouping concepts.

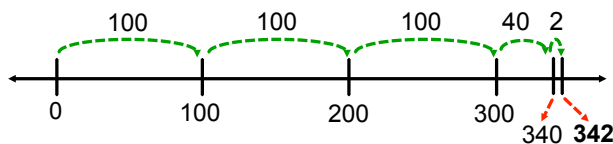
Place-Value Chart Connections

Hundreds	Tens	Ones
3	4	2

"I have 3 hundreds, four tens, and 2 ones."

Students practice writing the place and value of numbers on place value charts recognizing that no more than 9 can be in any location without needing to regroup.

Number Line



Grade 2 ~ Benchmark 3 ~ Instructional Support *Continued*

Benchmark 3 continues to focus on numbers 100 to 1,000. Subtraction is studied in depth and then should be reviewed through the end of the year. Daily routines can include shape identification, identification of fractions ($\frac{1}{2}$, $\frac{1}{3}$, and $\frac{1}{4}$), composition and decomposition of shape, patterning, and anything that needs review from previous benchmarks.

Partitive (Fair Share) Division

Fair Share Division is just as it sounds: begin with a total and share it fairly (equally). Children are familiar with this since they've been sharing things since they were quite young. The work done in second grade formalizes their ideas about sharing by assigning a number sentence to the action, and then students "act it out" with concrete objects or pictures. This is significant foundational work for grades to come, and eventually students will be introduced to the second form of division: Measurement or Quotative Division.

Katie has 12 apples. She gives them to her 3 friends to share. How many apples will each friend get?

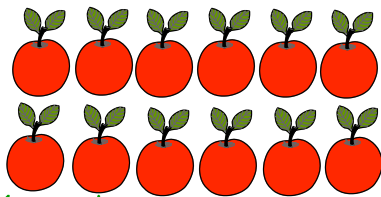
What do I know about the problem?

I know the total: 12 apples
I know I have to share them with 3 people.

What do I need to find out?

I need to find out how many apples each friend will get.

Teaching Strategy



The apples are shared until none are left.

A recording strategy might look like



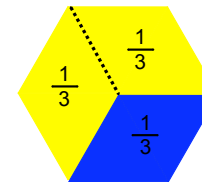
12 apples shared by 3 friends = 4 apples each
12 divided by 3 = 4

Part-Whole Fractions

Fractions can be thought about in multiple ways such as part-whole, measures, division, and ratios. Second grade work creates the foundation for thinking about all types by helping students develop the language for discussing a part of a whole. Focus is placed on the *unit* fractions. For example, $\frac{1}{4}$ is the *counting unit* for fourths. Pattern blocks are generally available and have relational characteristics that make dividing the block into fractional units easier for small hands.

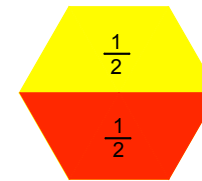
Pattern Block Fractions

The hexagon is divided into thirds. "I can count by thirds: one-third, two-thirds, three thirds." ($\frac{1}{3}$, $\frac{2}{3}$, $\frac{3}{3}$)



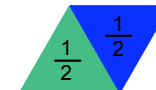
1 out of 3 parallelograms are blue.

If students are able, they should also see that 2 out of 3 parallelograms are yellow.

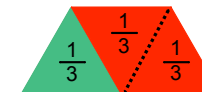


1 out of 2 trapezoids are red or 1 out of 2 trapezoids are yellow.

A common misconception for students is that a fraction isn't one number, it is two. It has two (or more) digits, but it is **one number and represents one quantity.**



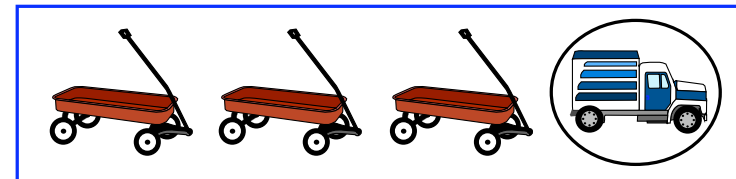
1 out of 2 triangles are green or 1 out of 2 triangles are blue.



1 out of 3 triangles are green.

If students are able, they should see that 2 out of 3 triangles are red.

Set Model Fractions



1 out of the 4 toys is a truck.
3 out of 4 toys are wagons.