

Second Grade 2020 Math Unit 2: Numbers and Operations in Base Ten

Content Area: **Mathematics**
Course(s): **Math 2**
Time Period: **Marking Period 2**
Length: **November - March**
Status: **Published**

Established Goals/Standards

Please choose the appropriate Goals/Standards from the Standards tab above.

MA.2.MD.B.6	Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2,..., and represent whole-number sums and differences within 100 on a number line diagram.
MA.2.OA.A.1	Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
MA.2.OA.B.2	Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.
MA.2.OA.C.3	Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.
MA.2.NBT.A.1	Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases:
MA.2.NBT.A.2	Count within 1000; skip-count by 5s, 10s, and 100s.
MA.2.NBT.A.3	Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.
MA.2.NBT.A.4	Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using $>$, $=$, and $<$ symbols to record the results of comparisons.
MA.2.NBT.B.5	Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
MA.2.NBT.B.6	Add up to four two-digit numbers using strategies based on place value and properties of operations.
MA.2.NBT.B.7	Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.
MA.2.NBT.B.8	Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900.
MA.2.NBT.B.9	Explain why addition and subtraction strategies work, using place value and the properties of operations.

Essential Questions

Please add your Essential Questions by clicking on the Lists tab above.

- How can differences be found mentally?
- How can numbers to 100 be shown and compared?
- How can sums be found mentally?
- What are the ways to add and subtract three-digit numbers?
- What is a standard procedure for adding two-digit numbers?
- What is a standard procedure for subtracting two-digit numbers?
- What number patterns are helpful in reading and writing numbers to 1,000?

Enduring Understanding

Please add your Enduring Understandings by clicking on the Lists tab above.

- All sums and differences can be found using models (cubes). Some calculations are done easily using mental math or paper and pencil. More complex calculations can be done using a calculator.
- Counting and place-value number patterns can be seen on hundreds charts.
- Number lines can help when skip counting.
- Ordering three or more numbers is similar to comparing two numbers because each number must be compared to each of the other numbers
- Patterns in a hundreds chart can be used to subtract numbers and to develop mental math strategies and number sense
- Patterns on a hundreds chart can be used to add numbers and to develop mental math strategies and number sense
- Place value can be used to compare and order numbers
- Some problems can be solved by identifying elements that repeat in a predictable way
- Techniques for doing addition or subtraction calculations mentally involve changing the numbers or the expression so the calculation is easy to do mentally.
- The position words before and after can be used to explain number relationships
- The standard addition algorithm for three-digit numbers breaks the calculation into simpler calculations using place value starting with the ones, then the tens, and then the hundreds.
- The standard addition algorithm for two-digit and one-digit numbers breaks the calculation into simpler calculations using place value, starting with the ones and then the tens. Answers to simpler calculations are used to give the final sum
- The standard algorithm for subtracting two-digit and two-digit numbers is just an extension of the algorithm for subtracting two-digit and one-digit numbers
- The standard algorithm for two-digit and two-digit numbers is just an extension of the algorithm for adding two-digit and one-digit numbers. The ones are added first and then the tens.
- The standard subtraction algorithm breaks the calculation into simpler calculations starting with the ones and then the tens
- Two-digit numbers can be broken apart using tens and ones and added in different ways

Content

Students will be able to:

- group objects into tens and ones to show two-digit numbers
- read and write number words for numbers 0 - 99
- compare two-digit numbers using symbols
- identify and write numbers that are one before and one after given numbers. They will also count on and count back to identify missing numbers to 100
- identify and write numbers that are 10 more and 10 less than given numbers
- learn to identify even and odd numbers
- use data from a chart to solve problems
- mentally add multiples of 10 to a two-digit number
- mentally add a two-digit number and a one-digit number
- add a two-digit number to a two-digit number using mental math
- use a hundred chart to add 2 two-digit numbers
- add using multiples of 10
- use number patterns to solve problems
- subtract multiples of 10 from two-digit numbers using mental math
- find the missing part of 100 by counting up from the given part
- find the difference between two-digit numbers less than 100
- subtract using multiples of 10
- determine whether they can solve problems with missing information or extra information
- use models to add a one-digit number to a two-digit number
- use concrete models to add a one-digit number to a two-digit number and decide if regrouping is needed
- add a one-digit number to a two-digit number, regroup if necessary, and record the process in a vertical addition frame
- use place value models and the standard algorithm to add two-digit numbers
- use the standard algorithm symbolically to add two-digit numbers, with and without regrouping
- use number lines to model two-digit addition
- use paper and pencil to add 3 and 4 two-digit numbers
- use different methods to help them solve addition problems
- draw pictures and write number sentences to solve addition problems
- regroup 1 ten as 10 ones when subtracting
- use models to subtract a one-digit number from a two-digit number with or without regrouping
- subtract a one-digit number from a two-digit number with and without regrouping using the standard algorithm
- use models to subtract two-digit numbers, with and without regrouping
- use the standard subtraction algorithm to subtract a two-digit number from another two-digit number
- use number lines to model two-digit subtraction
- relate addition to subtraction by using one operation to check the other
- use different methods to solve two-digit subtraction problems
- solve two-question problems. They will select the operation to solve each question
- count by hundreds to 1,000
- use place-value models to show numbers up to 1,000
- identify and record three-digit numbers in expanded form, standard form, and number word form
- add and subtract multiples of 10 or 100 to and from a three-digit number without regrouping
- find, identify, and apply number patterns to numbers on a hundred chart
- skip count by different amounts on the number line and use the patterns to identify the numbers that come next

- compare three-digit numbers using $<$, $=$, $>$
- order 3 three-digit numbers from least to greatest and greatest to least
- solve problems by finding number patterns
- explore different strategies for adding three-digit numbers
- add three-digit numbers mentally without regrouping
- use place value blocks to add 2 three-digit numbers with regrouping
- use paper and pencil to add 2 three-digit numbers with regrouping
- explore different strategies to subtract three-digit numbers
- find the missing part by counting on or counting back, given a quantity and one of its parts
- use models to subtract three-digit numbers with regrouping
- subtract three-digit numbers using a standard algorithm
- use logical reasoning to solve problems

Related Vocabulary:

digits

number word

greater than ($>$)

less than ($<$)

equal to ($=$)

before

after

even

odd

mental math

tens digit

next ten

regroup

number line

hundreds

thousand

expanded form

standard form

number word

compare

order

Resources

pearsonsuccess.net - Interactive Digital Path

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