

2nd Grade - Lauderdale County Schools - Math Syllabus 2024-2025

Quarter 1 August - October

Standards:

1. Use addition and subtraction within 100 to solve one and two-step word problems by using drawings and equations with a symbol for the unknown number to represent the problem. (Lesson 5 & 8)
2. Fluently add and subtract within 20 using mental strategies such as counting on, making ten, decomposing a number leading to ten, using the relationship between addition and subtraction, and creating equivalent but easier or known sums. a. State automatically all sums of two one-digit numbers.
3. Use concrete objects to determine whether a group of up to 20 objects is even or odd. a. Write an equation to express an even number as a sum of two equal addends.
4. Using concrete and pictorial representations and repeated addition, determine the total number of objects in a rectangular array with up to 5 rows and up to 5 columns.
 - a. Write an equation to express the total number of objects in a rectangular array with up to 5 rows and up to 5 columns as a sum of equal addends.
10. Fluently add and subtract within 100, using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
15. Measure lengths of several objects to the nearest whole unit. a. Create a line plot where the horizontal scale is marked off in whole-number units to show the lengths of several measured objects.
17. Measure the length of an object by selecting and using standard units of measurement shown on rulers, yardsticks, meter sticks, or measuring tapes.
18. Measure objects with two different units, and describe how the two measurements relate to each other and the size of the unit chosen.
19. Estimate lengths using the following standard units of measurement: inches, feet, centimeters, and meters.
20. Measure to determine how much longer one object is than another, expressing the length difference of the two objects using standard units of length.
21. Use addition and subtraction within 100 to solve word problems involving same units of length, representing the problem with drawings (such as drawings of rulers) and/or equations with a symbol for the unknown number.
23. Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.
 - a. Express an understanding of common terms such as, but not limited to, quarter past, half past, and quarter to.
25. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes. a. Recognize and draw shapes having specified attributes.
26. Partition a rectangle into rows and columns of same-size squares, and count to find the total number of squares.
27. Partition circles and rectangles into two, three, or four equal shares. Describe the shares using such terms as halves, thirds, half of, or a third of, and describe the whole as two halves, three thirds, or four fourths.
 - a. Explain that equal shares of identical wholes need not have the same shape.

Academic Vocabulary: (place value) digit, place value, hundreds, tens, ones, single-digit number, two-digit number, three-digit number, compose, decompose, skip-count, compare, greater than ($>$), equal to ($=$), less than ($<$), (repeated addition) equal groups, row, column, array, repeated addition, tape diagram, even, odd, doubles, (addition within 100) add, subtract, compare, unknown, equation, equal, addends, sum, difference, adding to, taking from, putting together, taking apart, (time & money) comparing with unknowns, analog clock, digital clock, minute hand, hour hand, half past, penny, nickel, dime, quarter, (geometry) attributes, polygon, triangles, rectangles, squares, pentagons, hexagons, quadrilaterals, cubes, partition, side,

vertex, 2-dimension, 3-dimension, (fractions) equal shares, halves, thirds, fourths, half of, third of, fourth of, whole, length, ruler, meter, centimeters, distance, unit length, number line

Approved Resources - Place Value within 200

Counting Collections - We are setting routines for counting collections to be utilized throughout the year as a number sense routines and in math centers.

Choral Counting

1st Grade Eureka Module 6

*Identify 10 more, 10 less, 1 more, and 1 less

*Use the symbols $>$, $=$, $<$ to compare quantities

*Count and Write number to 120.

*Count to 120 in unit form using only tens and ones.

*Represent up to 120 objects with a written

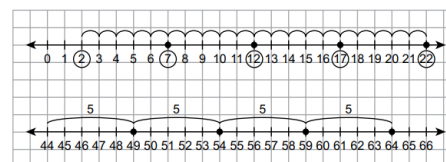
*Add and Subtract multiples of 10 within 100.

Howard County Place Value- Uses base ten blocks which is great if you have spent time making connections to all the models.

Math By The Book

Parent Helps

- Counting Collections
- Beaded Number String for counting
- Brainiaccamp virtual manipulative
- Base ten blocks on brainiaccamp
- [Place Value Videos](#)



Starting Number	Representation	Skip-Count Rule
48		48, 58, 68, 78
Ending Number		Skip-count by 10 three times to go from 48 to 78.
78		

Eureka Curriculum & Notes

Eureka Module 6: Foundations of Multiplication and Division

Topic A- Formation of Equal Groups

*Use manipulatives and drawing to create equal groups.

Topic B- Arrays and Equal Groups

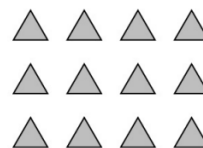
*Compose arrays from rows and columns, and count to find the total using objects.

*Decompose arrays into rows and columns, and relate to repeated addition / Represent arrays and distinguish rows and columns using math drawings.

*Solve word problems involving addition of equal groups in rows and columns.

Manipulatives & Visual Models

- square tiles or other objects used to make arrays
- Tape diagrams
- [Array Introduction Video](#)
- [Array - Repeated Addition Video](#)

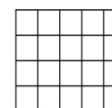


addition problem: $3 + 3 + 3 + 3$

OR

$$4 + 4 + 4$$

Ask students to construct rectangles with a given number of squares and determine the numbers of rows and columns in the rectangle. For example, given 20 square-shaped tiles, one student may construct a rectangle with 2 rows and 10 columns and another student may construct a rectangle with 4 rows and 5 columns.



Eureka Curriculum & Notes Module 1- Sums and Differences to 100

Topic A

- * Making ten and adding to ten.
- * Making the next ten and adding to a multiple of ten.

Topic B

- *Add and subtract like units.
- *Make a ten to add within 20.
- *Make a ten to add within 100.
- *Subtract single digit numbers from multiples of ten or 100
- *Take from ten within 20.
- *Take from ten within 100.

Manipulatives & Visual Models

- Ten Frames & base ten blocks(brainiaccamp)
- Number line
- [Add and Subtract within 100 videos](#)
- **Avoid** - standard algorithm based on our standards.

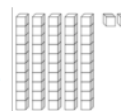
$$65 - 37$$

$$65 - 30 = 35$$

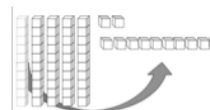
$$35 - 7 = 28$$

Sometimes a problem requires a group of ten to be regrouped so that ones can be taken away. Consider $52 - 28$

This is 52. There aren't enough ones to take away.

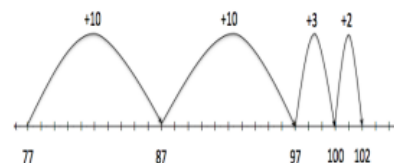


This is 52 after regrouping 1 ten to make 4 tens and 12 ones.



Now, we can take away 8 ones from 12 ones.

Number lines are useful for adding numbers. Students use them as they transition away from blocks. Numbers can be broken apart and added in different ways. The number line below shows one way to add $77 + 25$.



Eureka Curriculum & Notes

Module 8: Time, Shape, and Fractions as Equal Parts of Shapes

Topic A - Attributes of Geometric Shapes - Do not limit students to standard shapes. Expose students to different orientations, sizes, and configurations of shapes.

- Example: Any 6 sided shape is a [hexagon](#).
- Example: A square is a rectangle, but a rectangle is not a square

*Describe two-dimensional shapes based on attributes.

*Build, identify, and analyze two-dimensional shapes with specified attributes.

*Use attributes to draw different polygons including triangles, quadrilaterals, pentagons, and hexagons.

*Use attributes to identify and draw different quadrilaterals including rectangles, rhombuses, parallelograms, and trapezoids.

*Relate the square to the cube, and describe the cube based on attributes.

Topic C - Halves, Thirds, and Fourths of Circles and Rectangles

*Partition circles and rectangles into equal parts, and describe those parts as halves, thirds, and fourths.

*Partition circles and rectangles into equal parts, and describe those parts as halves, thirds, or fourths.

*Describe a whole by the number of equal parts including 2 halves, 3 thirds, and 4 fourths.

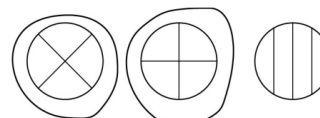
*Recognize that equal parts of an identical rectangle can have different shapes.

Manipulatives & Visual Models

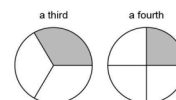
- pattern blocks, geoboards (brainiaccamp)
- [Parent Videos for Geometry](#)

Polygons			
Triangle	Quadrilateral	Pentagon	Hexagon
All triangles have 3 sides.	All quadrilaterals have 4 sides.	All pentagons have 5 sides.	All hexagons have 6 sides.

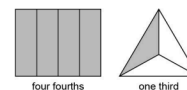
- Ask students to identify circles that have been decomposed into equal-sized slices. In the example shown, the circles that are partitioned into equal shares have been circled.



Ask students to describe one part in a figure that has been partitioned into equal shares. In the example shown, the circle on the left has been partitioned into three equal parts, one of which is shaded and called "a third," while the circle on the right has been partitioned into four equal parts, one of which is shaded and called "a fourth."



Ask students to identify one or more parts of a whole in a figure that has been partitioned into equal shares. For example, a rectangle partitioned into four equal parts with all four parts shaded represents "four fourths" of the whole, and a triangle partitioned into three equal parts with one part shaded represents "one third" of the whole.



Eureka Curriculum & Notes
Module 2: Addition and Subtraction of Length Units

Topic A: Understand the concepts of the ruler

- *Connect measurement with physical units by using multiple copies of the same unit.
- *Use iteration with one physical unit to measure.
- *Apply concepts to create unit rulers and measure lengths. Students need to make the centimeter ruler. Do they notice the connections to a number path?

Topic B: Measure and Estimate the length using different measurement tools

- *Measure objects using centimeter rulers and meter sticks.
- *Develop estimation strategies by applying prior knowledge of length and using mental benchmarks.

Topic C: Measure and Compare the length using different measurement tools

- *Measure and compare lengths using centimeters and meters.
- *Measure and compare lengths using standard units and non-standard units.

Topic D: Relate Addition and Subtraction to length

- *Solve addition and subtraction word problems using a ruler as a number line.
- *Apply conceptual understanding of measurement by solving two-step word problems.

Parent Helps

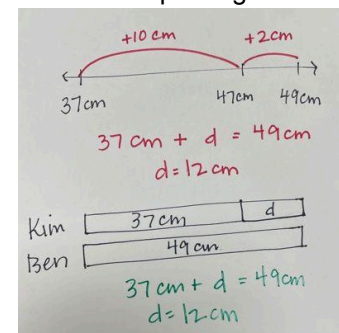
- centimeter rulers
- meter sticks

Sample Items

Give students a series of pairs of objects to measure using a ruler. Ask students to record the lengths for each pair of objects. Write a subtraction equation and then a comparison statement to show how much shorter or longer one object is than the other.

Measures of Objects				
Object A	Length of Object A	Object B	Length of Object B	Equation
pencil	7 inches	crayon	4 inches	$7 - 4 = 3$ or $4 + 3 = 7$
glue stick	4 inches	pair of scissors	5 inches	$5 - 4 = 1$ or $4 + 1 = 5$
teacher's shoe	12 inches	student's shoe	9 inches	$12 - 9 = 3$ or $9 + 3 = 12$

Let's compare some dogs. Kim's dog is 37 cm tall. Ben's dog is 49 cm tall. Whose dog is taller? What is the difference (how much taller)? What is the unit? Use a number line or tape diagram to show your thinking:



Quarter 2
October - December

Standards:

1. Use addition and subtraction within 100 to solve one and two-step word problems by using drawings and equations with a symbol for the unknown number to represent the problem. (embedded throughout the modules)
6. Explain that the three digits of a three-digit number represent amounts of hundreds, tens, and ones.
 - a. Explain the following three-digit numbers as special cases: 100 can be thought of as a bundle of ten tens, called a “hundred,” and the numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).
7. Count within 1000 by ones, fives, tens, and hundreds.
8. Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.
9. Compare two three-digit numbers based on the value of the hundreds, tens, and ones digits, recording the results of comparisons with the symbols $>$, $=$, and $<$ and orally with the words “is greater than,” “is equal to,” and “is less than.”
10. Fluently add and subtract within 100, using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
13. Mentally add and subtract 10 or 100 to a given number between 100 and 900.
16. Create a picture graph and bar graph to represent data with up to four categories.
 - a. Using information presented in a bar graph, solve simple “put-together,” “take-apart,” and “compare” problems.
 - b. Using Venn diagrams, pictographs, and “yes-no” charts, analyze data to predict an outcome.
17. Measure the length of an object by selecting and using standard units of measurement shown on rulers, yardsticks, meter sticks, or measuring tapes.
18. Measure objects with two different units, and describe how the two measurements relate to each other and the size of the unit chosen.
19. Estimate lengths using the following standard units of measurement: inches, feet, centimeters, and meters.
20. Measure to determine how much longer one object is than another, expressing the length difference of the two objects using standard units of length.
21. Use addition and subtraction within 100 to solve word problems involving same units of length, representing the problem with drawings (such as drawings of rulers) and/or equations with a symbol for the unknown number.
22. Create a number line diagram using whole numbers and use it to represent whole-number sums and differences within 100.
24. Solve problems with money.
 - a. Identify nickels and quarters by name and value.
 - b. Find the value of a collection of quarters, dimes, nickels, and pennies.
 - c. Solve word problems by adding and subtracting **within one dollar**, using the \$ and ¢ symbols appropriately (not including decimal notation).

Academic Vocabulary: (place value) digit, place value, hundreds, tens, ones, single-digit number, two-digit number, three-digit number, compose, decompose, skip-count, compare, greater than ($>$), equal to ($=$), less than ($<$), (repeated addition) equal groups, row, column, array, repeated addition, tape diagram, even, odd, doubles, (addition within 100) add, subtract, compare, unknown, equation, equal, addends, sum, difference, adding to, taking from, putting together, taking apart, (time & money) comparing with unknowns, analog clock, digital clock, minute hand, hour hand, half past, penny, nickel, dime, quarter, (geometry) attributes, polygon, triangles, rectangles, squares, pentagons, hexagons, quadrilaterals, cubes, partition, side, vertex, 2-dimension, 3-dimension, (fractions) equal shares, halves, thirds, fourths, half of, third of, fourth of, whole

Eureka Curriculum & Notes

Module Notes

During this time, only Topics A, B, D, E, and F are covered.

Eureka Lessons

Module 7: Problem Solving with Length and Data

Topic A - Problem Solving with Categorical Data

*Sort and record data into a table using up to four categories; use category counts to solve word problems.

*Draw and label a picture graph to represent data with up to four categories.

*Draw and label a bar graph to represent data; relate the count scale to the number line.

*Draw a bar graph to represent a given data set.

*Solve word problems using data presented in a bar graph.

Topic B - Problem Solving with Coins and Bills

*Recognize the value of coins and count up to find their total value.

*Solve word problems involving the total value of a group of coins.

*Solve word problems involving the total value of a group of bills.

*Solve word problems involving different combinations of coins with the same total value.

*Use the fewest number of coins to make a given value.

*Use different strategies to make \$1 or make change from \$1.

*Solve word problems involving different ways to make change from \$1.

*Solve two-step word problems involving dollars or cents with totals within \$100 or \$1. This lesson will need to be simplified and only focus on one-step problems. It also could be used as a lesson for higher-level math learners.

Topic D - Measuring and Estimating Length Using Customary and Metric Units

*Measure various objects using inch rulers and yardsticks.

*Develop estimation strategies by applying prior knowledge of length and using mental benchmarks.

*Measure an object twice using different length units and compare; relate measurement to unit size.

*Measure to compare the difference in length using inches, feet, and yards.

Parent Helps

- centimeter rulers
- meter sticks
- yard sticks
- Bar and picture graphs
- base ten blocks if students need them for word problems (brainiaccamp)
- Play money or real money
- [Measurement Videos](#)

Topic E - Problem Solving with Customary and Metric Units

- *Solve two-digit addition and subtraction word problems involving length by using tape diagrams and writing equations to represent the problem.
- *Identify unknown numbers on a number line diagram by using the distance between numbers and reference points.
- *Represent two-digit sums and differences involving length by using the ruler as a number line.

Topic F - Displaying Measurement Data

- *Collect and record measurement data in a table; answer questions and summarize the data set.
- *Draw a line plot to represent the measurement data; relate the measurement scale to the number line.
- *Draw a line plot to represent a given data set; answer questions and draw conclusions based on measurement data.

Eureka Curriculum & Notes
Module 3

Eureka Lessons

Module 3- Place Value, Counting, and Comparison of Numbers to 1,000

Topic A- Forming Base Ten Units of Ten, a Hundred, and a Thousand

- *Bundle and count ones, tens, and hundreds to 1,000.

Topic B- Understanding Place Value Units of One, Ten, and a Hundred

- *Count up and down between 100 and 220 using ones and tens
- *Count up and down between 90 and 1,000 using ones, tens, and hundreds.

Topic C- Three- Digit Numbers in Unit, Standard, Expanded, and Word Form

- *Count up to 1,000 on the place value chart.
- *Write base ten three-digit numbers in unit form; show the value of each digit.
- *Write base ten numbers in expanded form.
- *Write, read, and relate base ten numbers in all forms.

Topic E- Modeling Numbers Within 1,000 with Place Value

- *Count the total value of ones, tens, and hundreds with base ten blocks or numberline,

Manipulatives & Visual Models

- Skip count by 5s, 10s, 100s starting at numbers like 37.
- Counting Collections at home and group them into ones, tens, and hundreds (ex. Paper clips, pennies, q tips)
- Brainiaccamp virtual manipulatives
- [Place Value Videos](#)

*Change 10 ones for 1 ten, 10 tens for 1 hundred, and 10 hundreds for 1 thousand. *Read and write numbers within 1,000 after modeling. *Model numbers with more than 9 ones or 9 tens; write in expanded, unit, standard, and word forms. *Explore a situation with more than 9 groups of ten.	
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Quarter 3
January - March

Standards:

1. Use addition and subtraction within 100 to solve one and two-step word problems by using drawings and equations with a symbol for the unknown number to represent the problem. (Lesson 5 & 8)
2. Fluently add and subtract within 20 using mental strategies such as counting on, making ten, decomposing a number leading to ten, using the relationship between addition and subtraction, and creating equivalent but easier or known sums. a. State automatically all sums of two one-digit numbers.
3. Use concrete objects to determine whether a group of up to 20 objects is even or odd. a. Write an equation to express an even number as a sum of two equal addends.
4. Explain subtraction as an unknown-addend problem.
5. Reproduce, extend, create, and describe patterns and sequences using a variety of materials.
10. Fluently add and subtract within 100, using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
11. Use a variety of strategies to add up to four two-digit numbers.
12. 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. a. Explain 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.
23. Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.
 - a. Express an understanding of common terms such as, but not limited to, quarter past, half past, and quarter to.
25. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes. a. Recognize and draw shapes having specified attributes.
26. Partition a rectangle into rows and columns of same-size squares, and count to find the total number of squares.
27. Partition circles and rectangles into two, three, or four equal shares. Describe the shares using such terms as halves, thirds, half of, or a third of, and describe the whole as two halves, three thirds, or four fourths. a. Explain that equal shares of identical wholes need not have the same shape.

Academic Vocabulary: (place value) digit, place value, hundreds, tens, ones, single-digit number, two-digit number, three-digit number, compose, decompose, skip-count, compare, greater than ($>$), equal to ($=$), less than ($<$), add, subtract, compare, unknown, equation, equal, addends, sum, minuend, subtrahend, difference, adding to, taking from, putting together, taking apart, comparing with unknowns

Eureka Curriculum & Notes

Module 3- Place Value, Counting, and Comparison of Numbers to 1,000

Topic F- Comparing Two Three-Digit Numbers

- *Compare two three-digit numbers using $<$, $>$, and $=$
- *Compare two three-digit numbers using $>$, $<$, and $=$ where there are more than 9 ones and 9 tens.
- *Order numbers in different forms

Parent Helps

- Brainingcamp virtual manipulatives
- [Place Value Videos](#)

Topic G- Finding 1, 10, and 100 More or Less than a Number

*Model and use language to tell about 1 more and 1 less, 10 more and 10 less, and 100 more and 100 less.

*Complete a pattern counting up and down.

Eureka Curriculum & Notes**Topic D - Application of Fractions to Tell Time**

*Construct a paper clock by partitioning a circle into halves and quarters, and tell time to the half hour or quarter hour.

*Tell time to the nearest five minutes.

*Tell time to the nearest five minutes; relate a.m. and p.m. to time of day.

Parent Helps

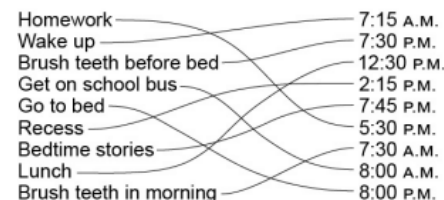
- analog clock - Make sure you show your child an analog clock and talk about it
- digital clock
- Braining camp clocks - This resource is great to be able to show time with 30 mins., 15 mins, and 5 mins.
- [Telling Time Videos](#)



On this clock, correctly label the numbers 1–12 to show the hours.

Next, draw the time 5:45.

Lastly, label the hour hand and the minute hand.

**Eureka Curriculum & Notes****Module 4 Notes**

During this time, only Topics A, B, and C are covered. This module will be revisited at a later date to cover Topics D, E, and F.

DO NOT USE STANDARD ALGORITHMS.

Eureka Lessons

Module 4- Addition and Subtraction within 200 with Word Problems to 100.

Topic A- Sums & Differences within 100**Parent Helps**

- **Avoid - standard algorithm base on our standards**

Appropriate Strategies

- adding or subtracting using place value - decompose/ expanded form
- Number lines to count up or count back
- Base ten block picture models
- [Visually Adding Videos](#) (videos go beyond 200 but strategies apply)
- [Strategies for Adding](#)
- [Adding and Subtracting using a Number Line Video](#)

- *Relate 1 more, 1 less, 10 more, and 10 less to addition and subtraction of 1 and 10.
- *Add and subtract multiples of 10 including counting on to subtract.
- *Add and subtract multiples of 10 and some ones within 100.
- *Solve one- and two-step word problems within 100 using strategies based on place value.

Topic B - Strategies for Composing a 10

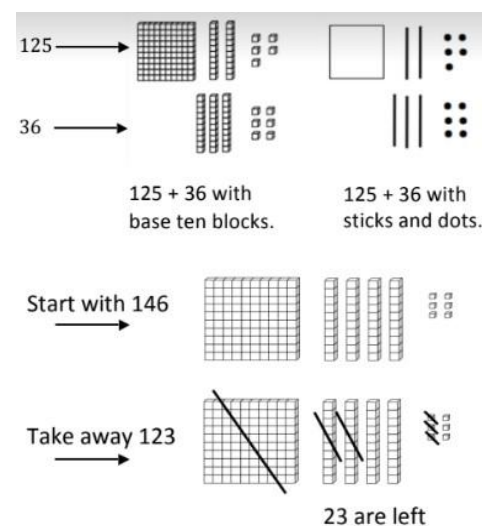
- *Use manipulatives to represent the composition of 10 ones as 1 ten with two-digit addends.
- *Relate addition using manipulatives to a written vertical method. **Avoid standard algorithms.**
- *Use math drawings to represent the composition and relate drawings to a written method.
- *Use math drawings to represent the composition when adding a two-digit to a three-digit addend.

Topic C - Strategies for Decomposing a 10

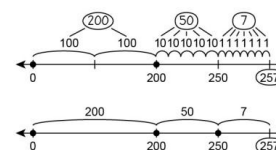
- *Represent subtraction with and without the decomposition of 1 ten as 10 ones with manipulatives.
- *Relate manipulative representations to a written method.
- *Use math drawings to represent subtraction with and without decomposition and relate drawings to a written method.
- *Represent subtraction with and without the decomposition when there is a 3-digit minuend.
- *Represent subtraction with and without the decomposition when there is a 3-digit minuend.
- *Solve one- and two-step word problems within 100 using strategies based on place value.

Topic D - Strategies for Composing Tens and Hundreds

- *Use mental strategies to relate compositions of 10 tens as 1 hundred to 10 ones as 1 ten.
- *Use manipulatives to represent additions with two compositions.
- *Relate manipulative representations to a written method.
- *Use math drawings to represent additions with up to two compositions and relate drawings to a written method.
- *Use math drawings to represent additions with up to two compositions and relate drawings to a written method.
- *Solve additions with up to four addends with totals within 200 with and without two compositions of larger units.



The students then model a "jump" for the value of the ones and plot a point and label the value. For example, the number 257 is shown, by starting with the original given number, 200.



KEEP A CONSTANT DIFFERENCE

Adjust the minuend and subtrahend by the same amount to make an easier problem.

$$100 - 59$$

$$\begin{aligned}
 &100 - 59 \\
 &= 101 - 60 \\
 &= \boxed{41}
 \end{aligned}$$

Topic E - Strategies for Decomposing Tens and Hundreds

- *Use number bonds to break apart three-digit minuends and subtract from the hundred.
- *Use manipulatives to represent subtraction with decompositions of 1 hundred as 10 tens and 1 ten as 10 ones.
- *Relate manipulative representations to a written word.
- *Use math drawings to represent subtraction with up to two decompositions and relate drawings to a written method.
- *Subtract from 200 and from numbers with zeros in the tens place.

Topic F - Student Explanations of Written Methods

- *Use and explain the totals below method using words, math drawings, and numbers.
- *Compare totals below to new groups below as written methods.
- *Solve two step word problems within 100.

Quarter 4
March - May

Standards:

1. Use addition and subtraction within 100 to solve one and two-step word problems by using drawings and equations with a symbol for the unknown number to represent the problem.
3. Use concrete objects to determine whether a group of up to 20 objects is even or odd. a. Write an equation to express an even number as a sum of two equal addends.
4. Using concrete and pictorial representations and repeated addition, determine the total number of objects in a rectangular array with up to 5 rows and up to 5 columns.
 - a. Write an equation to express the total number of objects in a rectangular array with up to 5 rows and up to 5 columns as a sum of equal addends.
12. 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. a. Explain 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.
13. Mentally add and subtract 10 or 100 to a given number between 100 and 900.
14. Explain why addition and subtraction strategies work, using place value and the properties of operations.
26. Partition a rectangle into rows and columns of same-size squares, and count to find the total number of squares.
27. Partition circles and rectangles into two, three, or four equal shares. Describe the shares using such terms as halves, thirds, half of, or a third of, and describe the whole as two halves, three thirds, or four fourths.
 - a. Explain that equal shares of identical wholes need not have the same shape.

Academic Vocabulary: (place value) digit, place value, hundreds, tens, ones, single-digit number, two-digit number, three-digit number, compose, decompose, total, sum, difference, less than ($<$), (repeated addition) equal groups, row, column, array, repeated addition, tape diagram, even, odd, doubles

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Module 5: Addition and Subtraction within 1,000 with Word Problems

Topic A - Strategies for Adding and Subtracting Within 1,000

- *Relate 10 more, 10 less, 100 more, and 100 less to addition and subtraction of 10 and 100.
- *Add and subtract multiples of 100, including counting on to subtract.
- *Add multiples of 100 and some tens within 1,000.
- *Subtract multiples of 100 and some tens within 1,000.
- *Use the associative property to make a hundred in one addend.
- *Use the associative property to subtract from three-digit numbers and verify solutions with addition.
- *Share and critique solution strategies for varied addition and subtraction

Parent Helps

Manipulatives & Resources

- Brainiaccamp virtual manipulatives

Appropriate Strategies & Samples

- Base ten blocks & pictorial model
- Decomposing numbers- expanded form
- Number line
- Counting On or Counting Back
- **Avoid - standard algorithm**
- [Visually Adding Videos](#)
- [Strategies for Adding](#)
- [Strategies for Subtracting](#)
- [Adding and Subtracting using a Number Line Video](#)

problems within 1,000.

Topic B - Strategies for Composing Tens and Hundreds Within 1,000

*Relate manipulative representations to addition. (Do not use the traditional algorithm)

*Use math drawings to represent addition with up to two compositions.

*Choose and explain solutions strategies and record with a written addition method.

Topic C - Strategies for Decomposing Tens and Hundreds Within 1,000

*Relate manipulative representations to subtraction, and use addition to explain why the subtraction method works.

*Use Math drawings to represent subtraction with up to two decompositions, use addition to explain why the subtraction method works. (Do not use the traditional algorithm)

*Subtract from multiples of 100 and from numbers with zero in the tens place.

*Apply and explain alternate methods for subtracting from multiples of 100 and from numbers with zero in the tens place.

Topic D - Student Explanations for Choice of Solutions Methods

*Choose and explain solutions strategies and record with a written addition or subtraction method.

- [Subtracting with Regrouping](#)

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Module 6: Foundations of Multiplication and Division

Topic A- Formation of Equal Groups

*Use manipulatives to create equal groups.

*Use math drawings to represent equal groups, and relate to repeated addition.

*Use math drawings to represent equal groups, and relate to repeated addition.

*Represent equal groups with tape diagrams, and relate to repeated addition.

Topic B- Arrays and Equal Groups

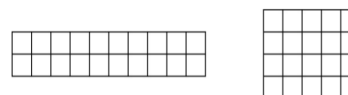
*Compose arrays from rows and columns, and count to find the total using objects.

*Decompose arrays into rows and columns, and relate to repeated addition.

Manipulatives & Visual Models

- Square tiles
- Arrays
- Rectangular partitioned
- [Array Introduction Video](#)
- [Array - Repeated Addition Video](#)

Ask students to construct rectangles with a given number of squares and determine the numbers of rows and columns in the rectangle. For example, given 20 square-shaped tiles, one student may construct a rectangle with 2 rows and 10 columns and another student may construct a rectangle with 4 rows and 5 columns.



- *Represent arrays and distinguish rows and columns using math drawings.
- *Solve word problems involving addition of equal groups in rows and columns.

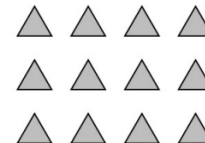
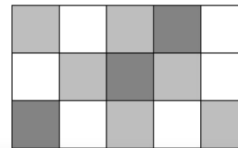
Topic C- Rectangular Arrays as a Foundation for Multiplication and Division

- *Use square tiles to compose a rectangle, and relate to the array model.
- *Use math drawings to compose a rectangle with square tiles.
- *Use square tiles to decompose a rectangle.
- *Use math drawings to partition a rectangle with square tiles, and relate to repeated addition.

Topic D - The Meaning of Even and Odd Numbers

- *Relate doubles to even numbers, and write number sentences to express the sums.
- *Pair objects and skip-count to relate to even numbers.
- *Investigate the pattern of even numbers: 0, 2, 4, 6, and 8 in the ones place, and relate to odd numbers.
- *Use rectangular arrays to investigate odd and even numbers.

Ask students to determine the number of square-shaped tiles that are required to fill in a given rectangle and count the resulting numbers of rows and columns. In the example shown, students filled in a rectangle using 15 tiles and counted 3 rows and 5 columns.



addition problem: $3 + 3 + 3 + 3$

OR

$$4 + 4 + 4$$

- Ask students to use a drawing or a manipulative (such as blocks, tokens, or pennies) to determine whether a given number is even or odd. Students do this by attempting to arrange a given number of manipulatives into two equal rows. If the rows align and are equal, then the given number is even, and if one row has one more of the manipulative in it than the other row, then the given number is odd.

○ 15



odd

○ 12



even

$$2 + 2 \quad \text{even}$$

$$4 + 5 \quad \text{odd}$$

$$8 + 7 \quad \text{odd}$$

$$5 + 5 \quad \text{even}$$

$$9 + 9 + 1 \quad \text{odd}$$