

## Chambersburg Area School District GRADE 2 Curriculum Numbers and Operations (Standard 2.1)

### Standards for Mathematical Practice

- *Make sense of problems and persevere in solving them.*
- *Reason abstractly and quantitatively.*
- *Construct viable arguments and critique the reasoning of others.*
- *Model with mathematics.*
- *Use appropriate tools strategically.*
- *Attend to precision.*
- *Look for and make use of structure.*
- *Look for and make sense of regularity in repeated reasoning.*

### TOPIC: Numbers and Operations in Base Ten

Unit Essential Questions: How do place value understanding and properties of operations contribute to solving addition and subtraction problems?

#### Concept: Counting, Reading, Writing Numbers

**CC.2.1.2.B.2** Use place-value concepts to read, write, and skip count to 1000.

#### Lesson Essential Questions:

Can I demonstrate how to count to 1000, starting at any number?  
How do I read and write numbers to 1000?  
How are numbers ordered from least to greatest within 1000?

#### Concept: Place Value

**CC.2.1.2.B.1** Use place-value concepts to represent amounts of tens and ones and to compare three digit numbers.

#### Lesson Essential Questions:

How do I use place value to compare two- and three-digit numbers?  
How are numbers written in expanded form?  
How do I use place value understanding and properties of operations to add and subtract?  
How is ten more or ten less related to place value?

#### Concept: Addition and Subtraction

**CC.2.1.2.B.3** Use place-value concepts and properties of operations to add and subtract within 1000.

#### Lesson Essential Questions:

How are addition and subtraction related?  
How do you solve addition and subtraction problems within 1000?

#### Vocabulary:

Ones, Tens, Hundreds, thousands, Place value, Digit, Base Ten, Skip count, Expanded notation, word form, Numeral, Compare, Greater than, Less than, More, less, Equal, Regroup, Add, Subtract, Strategy, inverse operation, Associative property, commutative property, Sum, Difference

#### Eureka Math Resources:

| <b>2nd</b> | <b>Title of Module</b>                                          |
|------------|-----------------------------------------------------------------|
| Module 1   | Sums and Differences to 100                                     |
| Module 3   | Place Value, Counting, and Comparison of Numbers to 1,000       |
| Module 4   | Addition and Subtraction within 200 and Word Problems to 100    |
| Module 5   | Addition and Subtraction Within 1,000 with Word Problems to 100 |

## *2<sup>nd</sup> Grade Skills:*

Explain and show one hundred as 10 tens using drawing or base ten blocks 2.NBT.1.a

Explain and show one thousand as 10 hundreds using drawings or base ten blocks 2.NBT.1.a

Explain and show one ten as 10 ones using drawing or base ten blocks 2.NBT.1.a

Draw or show a representation of a given three digit number

Write a spoken number (up to three digits) 2.NBT.1.a

Write a number that corresponds to a visual representation of a number (up to three digits). 2.NBT.1.a

Name the value of any digit in a three digit number (i.e. In the number  $5\overline{7}6$ , the 7 = 70) 2.NBT.1.a

State the place value of any digit in a three digit number (i.e. In the number  $\overline{7}64$ , the 7 is in the hundreds place.) 2.NBT.1.a

Explain the relationship between each digit of a given number and its place value 2.NBT.1.b

Name the value of any digit in a three digit number (i.e. In the number  $5\overline{7}6$ , the 7 = 70) 2.NBT.1.b

State the place value of any digit in a three digit number (i.e. In the number  $\overline{7}64$ , the 7 is in the hundreds place.) 2.NBT.1.b

Write and explain the expanded form of a three digit number 2.NBT.1.b

Write and explain the expanded form of a three digit number that is a multiple of one hundred 2.NBT.1.b

Skip count by 5s to 1000 and explain the numeric pattern developed 2.NBT.2

Skip count by 10s to 1000 and explain the numeric pattern developed 2.NBT.2

Skip count by 100s to 1000 and explain the numeric pattern developed 2.NBT.2

Write a spoken number up 1000 2.NBT.3

Read a printed numeral up to 1000 2.NBT.3

Read the word form of a number and write the numeric representation up to 1000 2.NBT.3

Explain the relationship between each digit of a given number and its place value 2.NBT.3

Name the value of any digit in a three digit number 2.NBT.3

State the place value of any digit in a three digit number 2.NBT.3

Write and explain the expanded form of a three digit number 2.NBT.3

Compare two 3-digit numbers using the terms and symbols > (greater than), < (less than) and = (equal to) 2.NBT.4

Explain why a 3-digit number is greater than or less than another 2 or 3-digit number, based on place value (i.e.  $433 > 298$  because the 4 in 433 is worth 400 and the 2 in 298 is worth 200, so 433 is larger than 298 since 400 is larger than 200.) 2.NBT.4

Draw a visual representation (or manipulate place value blocks) to show why a 3-digit number is larger or smaller than another 2 or 3-digit number 2.NBT.4

Name the value of any digit in a 3- digit number (i.e. In the number  $4\overline{7}6$ , the 7 = 70) 2.NBT.4

State the place value of any digit in a three digit number (i.e. In the number  $4\overline{7}6$ , the 7 is in the tens place.) 2.NBT.4

Explain how one number is greater than or less than another 2.NBT.4

Match the symbol (>) with the phrase 'greater than' and the symbol (<) with the phrase 'less than' 2.NBT.4

Add and subtract within 100 using fluency within 20 (with quick recall and without any visual aids) 2.NBT.5

Show and explain related addition and subtraction facts 2.NBT.5

Explain addition and subtraction strategies used 2.NBT.5

Explain the relationship between addition and subtraction and prove this relationship through inverse operations (checking work) 2.NBT.5

Add up to four 2-digit numbers 2.NBT.6

Explain the meaning of regrouping when adding (also to include written explanation) 2.NBT.6

## *2<sup>nd</sup> Grade Skills:*

Explain and show why, through expanded form, when adding, the digits must be lined up in the correct place value (ex.  $22 + 23 + 13 = 58$  because  $(20 + 2) + (20 + 3) + (10 + 3) = (20+20 + 10) + (2+3+3) = 50 + 8 = 58$  2.NBT.6

Show why the commutative property[  $A+B = B+A$  ] and associative property[  $A+B+C = (A+B)+C = A + (B+C)$ ] of addition holds true, when adding up to four 2-digit numbers 2.NBT.6

Add a three-digit number to a one, two and three-digit number with and without regrouping, using a variety of strategies and explain the strategy used 2.NBT.7

Subtract a three-digit number from a one, two and three-digit number with and without regrouping, using a variety of strategies and explain the strategy used 2.NBT.7

Draw pictures and use place value blocks to show why, when subtracting, it might be necessary to decompose a ten or hundred (regroup) 2.NBT.7

Draw pictures and use place value blocks to show why when adding, it might be necessary to compose a ten or hundred (regroup) 2.NBT.7

Name the value of any digit in a three digit number (i.e. In the number  $776$ , the  $7 = 70$ ) when adding two numbers 2.NBT.7

State the place value of any digit in a three digit number (i.e. In the number  $776$ , the  $7$  is in the tens place.) when adding two numbers 2.NBT.7

Explain the meaning of regrouping when adding (also to include written explanation) 2.NBT.7

Explain the meaning of regrouping when subtracting (also to include written explanation) 2.NBT.7

Explain/ write the relationship between addition and subtraction 2.NBT.7

Solve addition and subtraction one and two-step word problems and evaluate the solution in the context of the word problem 2.NBT.7

Add 10 or 100 more to a given number (up to 3-digits) with quick recall (without the use of visual aids or counting strategies) and explain reasoning used 2.NBT.8

Subtract 10 or 100 from a given number (up to 3-digits) with quick recall (without the use of visual aids or counting strategies) and explain reasoning used 2.NBT.8

Skip count by tens and hundreds from any given number (to include counting forwards and backwards) 2.NBT.8

Write a sequence of numbers with the rule “add ten”, “subtract ten”, “add one hundred” or “subtract one hundred” starting with any number 2.NBT.8

Explain how ten more, ten less, one hundred more, or one hundred less is related to place value 2.NBT.8

Draw pictures and use place value blocks to show why when adding, it might be necessary to compose a ten or hundred (regroup) 2.NBT.9

Draw pictures and use place value blocks to show why, when subtracting, it might be necessary to decompose a ten or hundred (regroup) 2.NBT.9

Explain the meaning of regrouping when adding (also to include written explanation) 2.NBT.9

Explain the meaning of regrouping when subtracting (also to include written explanation) 2.NBT.9

Explain/ write the relationship between addition and subtraction

Explain and show why, through expanded form, when adding or subtracting, the digits must be lined up in the correct place value (ex.  $324 + 245 = 569$  because  $(300 + 20 + 4) + (200+40 + 5) = (300 + 200) + (20+40) + (4 + 5) = 500+60 + 9 = 569$  2.NBT.9

Evaluate an addition or subtraction equation for the validity of the sum or difference as true or false and show why it is true or false 2.NBT.9

## Chambersburg Area School District GRADE 2 Curriculum Algebraic Concepts (Standard 2.2)

### Standards for Mathematical Practice

- *Make sense of problems and persevere in solving them.*
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- *Look for and make sense of regularity in repeated reasoning.*

### TOPIC: Operations and Algebraic Thinking

Unit Essential Questions: How do you represent and solve problems involving addition and subtraction? Can you demonstrate addition and subtraction fluently within 20? Can you demonstrate how to work with equal groups of objects to gain foundations for multiplication?

#### Concept: Addition and Subtraction

**CC.2.2.2.A.1** – Represent and solve problems involving addition and subtraction within 100.  
**CC.2.2.2.A.2** – Use mental strategies to add and subtract within 20.

**Lesson Essential Questions:**  
 How do I demonstrate how to do addition and subtraction problems within 100?  
 How do I demonstrate adding and subtracting fluently within 20?

#### Concept: Multiplication

**CC.2.2.2.A.3** – Work with equal groups of objects to gain foundations for multiplication.

**Lesson Essential Questions:**  
 How can I describe the difference between even and odd?  
 How can I draw an array?  
 How can I use an array to explain the parts of a multiplication equation?

Eureka Math Resources:

| <b>2nd</b> | <b>Title of Module</b>                                       |
|------------|--------------------------------------------------------------|
| Module 1   | Sums and Differences to 100                                  |
| Module 4   | Addition and Subtraction within 200 and Word Problems to 100 |
| Module 6   | Foundations of Multiplication and Division                   |

#### Vocabulary:

Addend, sum, equal, difference, part, whole, in all, altogether, symbol, equation, solve, count on , count back, subtract, even, odd, equal groups, unequal groups, pairing, skip count, array, multiplication, total, row, column, repeated addition, factor, product

## *2<sup>nd</sup> Grade Skills:*

Solve addition one- and two-step word problems within 100 and explain reasoning used

2.OA.1

Solve subtraction one- and two-step word problems within 100 and explain reasoning used

2.OA.1

Read addition and subtraction word problems to select the operation needed for solving

2.OA.1

Draw visual representations of addition and subtraction word problems within 100

2.OA.1

Write an addition or subtraction equation to match a word problem

2.OA.1

Create a word problem that matches a given equation

2.OA.1

Solve a word problem for an unknown in all positions of addition and subtraction

equations (by writing an equation with a symbol for the unknown)

2.OA.1

Add and subtract fluently within 20 (with quick recall and without any visual aids)

2.OA.2

Show and explain related addition and subtraction facts

2.OA.2

Create a known fact to help with another fact (i.e. composing a five, composing a ten, doubles, doubles plus one, etc.)

2.OA.2

Explain addition and subtraction strategies used

2.OA.2

Prove whether or not a group of objects is even or odd by pairing up objects from each group to either form two equal groups or two unequal groups

2.OA.3

Describe the difference between even and odd

2.OA.3

Draw an array to represent an equation for multiplication

2.OA.4

Explain the parts of a multiplication equation in reference to an array, using the terms factor(s) and product

2.OA.4

Draw two or more arrays to show multiple ways to represent the same multiplication equation

2.OA.4

Skip count by 2s, 5s and 10s to count the total number of objects shown in an array

2.OA.4

Add repeatedly, to find the total number of objects shown in an array

2.OA.4

Write a multiplication equation to show a given array

2.OA.4

Write an addition equation (repeated addition) to show a given array

2.OA.4

# Chambersburg Area School District GRADE 2 Curriculum Geometry (Standard 2.3)

## Standards for Mathematical Practice

- *Make sense of problems and persevere in solving them.*
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- *Attend to precision.*
- *Look for and make use of structure.*
- *Look for and make sense of regularity in repeated reasoning.*

## TOPIC: Geometry

Unit Essential Question: Do you know how to identify and analyze 2-D and 3-D shapes? How do you divide shapes into equal parts?

### Concept: 2-D and 3-D shapes

**CC.2.3.2.A.1** Analyze and draw two- and three-dimensional shapes based having specified attributes.

#### Lesson Essential Questions:

How do I define attributes of 2-D and 3-D shapes?

How do I use attributes to build and draw shapes?

How do I compare and contrast 2-D and 3-D shapes?

### Concept: Fractional Parts

**CC.2.3.2.A.2** Use the understanding of fractions to partition shapes into halves and quarters, and thirds.

#### Lesson Essential Questions:

How do I connect multiplication to a drawing of an array?

How do I explain division in terms of part and whole?

How do I show equal shares of a shape?

How do I show equivalent fractions for  $\frac{1}{3}$ ,  $\frac{1}{4}$ , and  $\frac{1}{2}$  using geometric figures?

#### Math Resources:

| 2nd      | Title of Module                                      |
|----------|------------------------------------------------------|
| Module 6 | Foundations of Multiplication and Division           |
| Module 8 | Time, Shapes, and Fractions as Equal Parts of Shapes |

#### Vocabulary:

Attribute, Shape, Closed, Side(s), Angle(s), Face(s), Two-dimensional, Three-dimensional, Triangle, Quadrilateral, Pentagon, Circle, Square, Vertex, Array, Multiplication, Rows, Columns, Factor, Area Model, Divide, Half, Half of, Quarter, Fourth, Equal Shares, Whole, Part, Fraction

## *2<sup>nd</sup> Grade Skills:*

Name & draw shapes (triangles, quadrilaterals, pentagons, hexagons and cubes) based on specified attributes (number of faces, number of angles) 2.G.1

Describe and show (through drawings or manipulatives) faces and vertices on three dimensional shapes 2.G.1

Describe and show (through drawings or manipulatives) sides and angles on two-dimensional shapes 2.G.1

Describe the attributes of triangles, pentagons, hexagons, and cubes 2.G.1

Compare and contrast between two- and three- dimensional shapes 2.G.1

Divide a rectangle into rows and columns of equal size and count to find the area of the rectangle 2.G.2

Match a repeated addition equation to a corresponding picture/ drawing of an array 2.G.2

Match a multiplication equation to a corresponding picture/ drawing of an array 2.G.2

Divide a rectangle multiple ways (rows & columns) to show the same area 2.G.2

Write different multiplication equations for the same area 2.G.2

Explain area in terms of factors (rows and columns) and product (area) 2.G.2

Draw lines to equally divide circles and rectangles into thirds, halves and fourths (quarters) 2.G.3

Explain the effects of dividing a shape in terms of the size of the divided pieces 2.G.3

Name and label the divided pieces of a shape using the terms halve, third, fourth (quarter) 2.G.3

Describe shares of a divided figure in terms of third of, fourth of, half of and quarter of 2.G.3

Explain division of a figure in terms of part and whole 2.G.3

Show how equal shares of a figure do not need to be the same shape 2.G.3

Show equivalent fractions for  $\frac{1}{3}$ ,  $\frac{1}{4}$  and  $\frac{1}{2}$  using geometric figures 2.G.3

## Chambersburg Area School District 2nd Grade Curriculum Measurement and Data (Standard 2.4)

### Standards for Mathematical Practice

- *Make sense of problems and persevere in solving them.*
- *Reason abstractly and quantitatively.*
- *Construct viable arguments and critique the reasoning of others.*
- *Model with mathematics.*
- *Use appropriate tools strategically.*
- *Attend to precision.*
- *Look for and make use of structure.*
- *Look for and make sense of regularity in repeated reasoning.*

### TOPIC: Measurement and Data

Unit Essential Questions: How do we use units of measurement? How is data represented and interpreted? How do we tell and write time? How do we solve problems and make change with money?

#### Concept: Measuring Objects

**CC.2.4.2.A.1** Measure and estimate lengths in standard units using appropriate tools.

##### Lesson Essential Questions:

How can I measure, describe and compare lengths of objects?

Can I demonstrate how to write and record the length of an object?

Can I compare and contrast between standard and non-standard units?

#### Concept: Addition and Subtraction

**CC.2.4.2.A.6-** Extend the concepts of addition and subtraction to problems involving length.

##### Lesson Essential Questions:

How do I solve addition and subtraction word problems involving measurements?

How do I explain the addition of whole numbers as the addition of lengths on the number line?

How do I explain the subtraction of whole numbers as the subtraction of lengths on the number line?

#### Concept: Data

**CC.2.4.2.A.4** Represent and interpret data using line plots, picture graphs, and bar graphs.

##### Lesson Essential Questions:

How do I represent data by creating a line plot, picture graph and bar graph?

How do I read and analyze data represented in a graph?

#### Concept: Time and Money

**CC.2.4.2.A.2** Tell and write time to the nearest five minutes using both analog and digital clocks.

**CC.2.4.2.A.3** – Solve problems and make change using coins and paper currency with appropriate symbols.

##### Lesson Essential Questions:

How do I tell and write time to the nearest five minutes on an analog and digital clock?

Can I demonstrate how to draw time on an analog clock to the nearest five minutes?

Can I demonstrate how to name coins and their values (penny, nickel, dime, quarter)?

How do I solve problems involving money using \$ and ¢ symbols?



**Math Resources:**

| <b>2nd</b> | <b>Title of Module</b>                               |
|------------|------------------------------------------------------|
| Module 2   | Addition and Subtraction of Length Units             |
| Module 7   | Problem Solving with Length, Money, and Data         |
| Module 8   | Time, Shapes, and Fractions as Equal Parts of Shapes |

Time and Money are included in fluency activities throughout Eureka.

**Vocabulary:**

Length, Measure, measurement, Ruler, yardstick, Meter stick, Tape measure, Units, Estimate, Meter(s), Feet/Foot, Inches/Inch, yard(s), Centimeter(s), Longer, Shorter, Longer than, Shorter than, Width, Solve, Compare, Difference, total, in all, Equation, Whole number, Number line, analog clock, digital clock, A.M., P.M., Minutes, Time, Hour(s), Dollar, Cent(s), penny, Nickel, Dime, Quarter, Line Plot, Data, Whole units,

**3<sup>rd</sup> Grade Skills:**

Measure the length of a given object, using a variety of measurement tools (rulers, yardstick, meter stick, and measuring tape) 2.MD.1  
 Compare and contrast between ruler, yardsticks, meter sticks and measuring tapes 2.MD.1  
 Describe measurement situations for a variety of tools 2.MD.1  
 Estimate the length of an object based on knowledge of tools 2.MD.1  
 Measure the length of a given object, using a two different units (ex feet & inches) and compare between the two measurements 2.MD.2  
 Explain & show why when measuring with a larger unit the measurement will be a smaller number than when measuring with a smaller unit 2.MD.2  
 Measure an object in inches, feet, centimeters and meters to compare actual measurements with estimates 2.MD.3  
 Estimate measurements in inches, feet, centimeters and meters 2.MD.3  
 Show inches, feet, centimeters and meters on ruler, yardstick, meter stick or tape measure 2.MD.3  
 Compare and contrast between inches, feet, centimeters and meters. 2.MD.3  
 Compare the length of two objects measured to determine which object has the longer or shorter length 2.MD.4  
 Subtract the length of two object to determine how much longer or shorter one object is in comparison to another 2.MD.4  
 Measure on object in feet, inches, centimeters or meters 2.MD.4  
 Compare and contrast between inches, feet, centimeters and meters. 2.MD.4  
 Add & subtract measurements within 100 2.MD.5  
 Solve addition and subtraction word problems involving measurements (with regrouping) 2.MD.5  
 Write an equation to match a given word problem, with a symbol written for the unknown number 2.MD.5  
 Draw pictures to represent a word problem involving measurements 2.MD.5  
 Explain whole numbers as lengths/ distance from 0 on a ruler or number line 2.MD.6  
 Show a given number as a length/ distance from 0 on a number line 2.MD.6  
 Show whole number sums and differences within 100 on a number line 2.MD.6  
 Explain the addition of whole numbers as the addition of lengths on the number line (distances added) 2.MD.6  
 Explain the subtraction of whole numbers as the subtraction of lengths on the number line (distances subtracted) 2.MD.6

### *3<sup>rd</sup> Grade Skills continued:*

Write and read the time shown on an analog clock to the nearest five minutes 2.MD.7  
Read the time shown on a digital clock 2.MD.7  
Match the time shown on an analog clock to a corresponding digital time to the nearest five minutes 2.MD.7  
Label time A.M. or P.M. based on the time of day 2.MD.7  
Skip count by 5s to 60 2.MD.7  
Compare and contrast between the hour hand and minute hand 2.MD.7  
Count a collection of coins and dollars 2.MD.8  
Write an amount shown using decimal notation and \$ 2.MD.8  
Label coins and their values 2.MD.8  
Solve word problems involving dollar bills, quarters, nickels, dimes and pennies, using & and ¢ symbols 2.MD.8  
Add and subtract decimals numbers in the context of money 2.MD.8  
Create a line plot from measurement data collected by measuring several objects 2.MD.9  
Measure an object multiple times for accuracy 2.MD.9  
Measure the length of several object to the nearest whole unit 2.MD.9  
Order several measurements from least to greatest 2.MD.9