2nd Grade Mathematics Instructional Toolkit

The 2nd Grade Mathematics Instructional Toolkit is intended to assist teachers with planning lessons aligned to the Florida Standards. This toolkit is not intended to replace your district's curriculum, but rather it serves to support the teaching and learning of the 2nd grade Mathematics Florida Standards. This toolkit includes a breakdown of the standards, standards aligned resources and information related to mathematics instruction. The resources presented in this document may only cover portions of the aligned standard and represent only a small sample of those available on CPALMS.

CPALMS: Official Source of Florida Standards

This section features information and tools that are found on CPALMS. These resources include course descriptions, formative assessment resources, mathematical practices, depth of knowledge ratings and FloridaStudents.org resources.

2nd Grade Mathematics Course Description
Course descriptions provide an overview for a course and designate which standards are in that course. The 2nd grade mathematics course description includes resources for all 41 standards within the 2nd grade mathematics course.

Mathematics Formative Assessment System (MFAS)
One resource available on CPALMS that has been designed specifically for mathematics instruction is the Mathematics Formative Assessment System (MFAS). The system includes a task or problem that teachers can implement with their students. It also includes various levels of rubrics that help the teacher interpret students' responses. In addition to using the MFAS tasks as formative assessments, these tasks can be used to plan lessons that are closely aligned to the standards.

Mathematical Practices
The Mathematical Practices are habits of mind that describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. The Mathematical Practices should be infused during the 2nd grade mathematics course. More information about each Mathematical Practice can be found by clicking on the links below.

MAFS.K12.MP.1.1 Make sense of problems and persevere in solving them.

MAFS.K12.MP.2.1 Reason abstractly and quantitatively.

MAFS.K12.MP.3.1 Construct viable arguments and critique the reasoning of others.

MAFS.K12.MP.4.1 Model with mathematics.

MAFS.K12.MP.5.1 Use appropriate tools strategically.

MAFS.K12.MP.6.1 Attend to precision.

MAFS.K12.MP.7.1 Look for and make use of structure.

MAFS.K12.MP.8.1 Look for and express regularity in repeated reasoning.

Depth of Knowledge

Florida has adopted Webb's four-level Depth of Knowledge (DOK) model of content complexity as a means of classifying the cognitive demand presented by the Florida Standards. Content complexity increases as the levels progress from Level 1 Recall to Level 4 Extended Thinking. The DOK Levels are identified for each standard throughout this document. Please visit the CPALMS Content Complexity page for more information about the DOK complexity for standards.

Florida Students

Resources specifically designed with students in mind are available on Florida Students. Florida Students is an interactive site that provides educational resources aligned to the Florida Standards.

2nd Grade Mathematics Resources

This section features links to resources and tools for mathematics educators in Florida. There are resources for teachers, parents and students.

Teacher, Student and Parent Resources
- Standards Coding Scheme
- 2nd Grade Mathematics Parent Guide
- 2nd Grade Mathematics Student Resources

Instructional Resources
- Elementary Mathematics Resources
- Elementary Standards Progressions
- Literacy for Learning in the Content Areas
- English Language Learners Assistance
- Khan Academy 2nd Grade Math Mission

Operations and Algebraic Thinking

MAFS.2.OA.1 Represent and solve problems involving addition and subtraction.

MAFS.2.OA.1.1
DOK Level 2: Basic Application of Skills & Concepts
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.

Resources:

Solving a Multi-Step Word Problem with a Bar Model
Resource Type: Tutorial
This tutorial will assist learners with a further understanding of how to successfully read multi-step word problems by creating a bar model representation of the information presented.

Math Doctor: Which Operation?
Resource Type: Lesson Plan
In this lesson, students will learn interpretation strategies for addition and subtraction word problems, such as circling numbers, underlining key words, choosing operations, and showing their work to solve word problems.

Amazing Animal Athletes
Resource Type: Lesson Plan
In this lesson, students will be able to solve one and two step word problems using addition and subtraction to compare human and animal athletic abilities. This lesson focuses on identifying the information given, comparing numbers, and identifying the missing information needed to solve the word problem using either addition or subtraction.

Add To and Take From
Resource Type: MFAS Formative Assessment
Students are asked to solve two word problems: add to (start unknown) and take from (start unknown).

Solving a Two-Step Word Problem: Eating Grapes
Resource Type: MFAS Formative Assessment
Students are asked to solve a two-step word problem that combines a compare (bigger unknown) problem and a compare (smaller unknown) problem.

Solving a Two-Step Word Problem: Marbles in a Bag
Resource Type: MFAS Formative Assessment
Students are asked to solve a two-step word problem that combines a put together (result unknown) problem and a take from (result unknown) problem.

MAFS.2.OA.1.a
DOK Level 2: Basic Application of Skills & Concepts

Determine the unknown whole number in an equation relating four or more whole numbers. For example, determine the unknown number that makes the equation true in the equations $37 + 10 + 10 = \underline{\hspace{1cm}} + 18$, $? - 6 = 13 - 4$, and $15 - 9 = 6 + \square$.

Resources:

Solving Subtraction Problems Using a Number Line
Resource Type: Tutorial
This tutorial for student audiences will assist learners with a further understanding of modeling whole number subtraction problems on a number line. The tutorial supports student learning with visuals of using a number line to subtract 2-digit numbers.

Creating a Balanced Equation
Resource Type: Lesson Plan
Students will relate using a balance to the mathematical symbol, the equal sign. Students will use their knowledge of the equal sign and addition and subtraction to find the unknown number in an equation with four or more numbers.

The Mystery of the Missing Number
Resource Type: Lesson Plan
This lesson uses a fun math mystery theme to help your students determine an unknown whole number to balance an equation.

Relating Four Whole Numbers
Resource Type: MFAS Formative Assessment
Students find the missing number in an equation relating four whole numbers that involves addition and subtraction.

What Number Makes the Equation True?
Resource Type: MFAS Formative Assessment
Students find the missing number in an equation relating four whole numbers.

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MAFS.2.OA.2 Add and subtract within 20.

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MAFS.2.OA.2.2
DOK Level 1: Recall

Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.

Resources:

Piece of Coke Mental Math!
Resource Type: Lesson Plan
In this lesson, you will find activities that you can use to enable student learning and application of mental math without using rote memorization.

[Let's Learn Those Facts: Addend Pairs to 12](#)
Resource Type: Lesson Plan
In this lesson, students will practice addition facts for sums up to 12. Students will be put in pairs and given a game to play in which they have to roll 2 number cubes and cover up the resulting sum on a game board numbered 2-12. They will study remaining commutative addition facts and make flashcards to practice in pairs.

[Number Facts Bingo](#)
Resource Type: Educational Game
This Flash applet generates number fact questions for the game of Bingo. Each of the six levels focuses on a different range of number facts (addition, subtraction, and multiplication), which are displayed one at a time in a variety of question formats. The applet is intended for use in a class/group setting with a projector or interactive whiteboard. Downloadable cards for each level are available from the menu page. At any time in a game the "number facts so far" feature will reveal all the questions presented in the current round to facilitate review or verification of a winning board.

[Fluency for Addition Within 20](#)
Resource Type: MFAS Formative Assessment
Students are asked to solve six addition problems within 20 and to explain their strategies for solving each problem.

[Fluency for Subtraction Within 20](#)
Resource Type: MFAS Formative Assessment
Students are asked to solve six subtraction problems within 20 problems and to explain their strategies for solving each problem.

[MAFS.2.OA.3](#) Work with equal groups of objects to gain foundations for multiplication.

[MAFS.2.OA.3.3](#)
DOK Level 2: Basic Application of Skills & Concepts
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.

Resources:

[Using the Digit in the Ones Place to Determine if a Number is Even or Odd](#)
Resource Type: Tutorial
This tutorial for student audiences will assist learners with a further understanding of how to identify a number as even or odd by using number patterns in the ones place. The tutorial supports student learning with visual representations of larger two-digit numbers and highlighting the number in the ones place to determine if the two-digit number is odd or even.

[Even and Odd Go on a Picnic](#)
Resource Type: Lesson Plan
In this lesson, the class will be guided through solving even and odd questions involving a picnic scenario. Students will explore and discover various strategies for determining if numbers are even or odd based on whether they can be divided into two equal teams for a kickball game or whether everyone will have a buddy to pair up with on the picnic. A follow up lesson will need to be completed to address the second section of the standard involving writing an equation to express an even number as a sum of two equal addends.

[Odds and Evens](#)
Resource Type: Lesson Plan
This lesson helps students identify numbers as odd or even using a hands on method. It also leads them to understand that all even numbers can be written as a sum of equal addends. This lesson can be spread over multiple mini sessions if needed.

[Is it Even or Odd?](#)
Resource Type: MFAS Formative Assessment
Students are asked to determine if a given number is even or odd.

[Even Numbers as the Sum of Two Equal Addends](#)
Resource Type: MFAS Formative Assessment
Students are asked to write even numbers within 20 as the sum of two equal addends.

MAFS.2.OA.3.4
DOK Level 1: Recall

Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.

Resources:

[Array Addition](#)
Resource Type: Lesson Plan
This is a lesson in which students will practice making rectangular arrays and writing equations, with and without story problems, using repeated addition from the array to find a sum. This is lesson designed to help prepare students for 3rd grade multiplication.

[I Array + You Array = Arrays!](#)
Resource Type: Lesson Plan
An engaging activity that includes writing addition equations and making equal sets of objects in an organized manner.

[Counting Dots in Arrays](#)
Resource Type: Problem-Solving Task
Students who work on this task will benefit in seeing that given a quantity, there is often more than one way to represent it, which is a precursor to understanding the concept of equivalent expressions. This particular question also lays a foundation for students to understand the commutative property of multiplication in third grade.

[Counting by Rows or Columns](#)
Resource Type: MFAS Formative Assessment
Students are asked to make an array from pennies and then skip count to find the total number of pennies and write an addition equation to represent the array.

[Writing an Equal Addends Equation](#)
Resource Type: MFAS Formative Assessment
Students are asked to write an equal addends equation that corresponds to a given array.

Number and Operations in Base Ten

[MAFS.2.NBT.1](#) Understand place value.

MAFS.2.NBT.1.1
DOK Level 2: Basic Application of Skills & Concepts
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:

a. 100 can be thought of as a bundle of ten tens — called a "hundred."
b. 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).

Resources:

[Hundreds, and Tens, and Ones! Oh, My!](#)
Resource Type: Lesson Plan
The students will extend their base-ten understanding to hundreds and represent 3-digit numbers in a variety of ways, using 3-digits, words, base-ten blocks, drawings, and equations.

[Bundles and Combos](#)
Resource Type: Lesson Plan
This lesson will help students learn that a 3 digit number can be composed of different combinations of hundreds, tens and ones.

[Place Value- 3 Digit Numbers](#)
Resource Type: Lesson Plan
Students will decompose numbers by place value and represent them using concrete and pictorial models.

[Bundling and Unbundling](#)
Resource Type: Problem-Solving Task
Students determine the number of hundreds, tens and ones that are necessary to write equations when some digits are provided. Student must, in some cases, decompose hundreds to tens and tens to ones.

Largest Number Game
Resource Type: Problem-Solving Task
This task asks students to build the largest three-digit number. Students must explain their thinking and answer higher order thinking questions. Students have to use error analysis to complete the questions.

Can You Write the Number?
Resource Type: MFAS Formative Assessment
Students are asked to write numbers given descriptions of the number of hundreds, tens, and ones each contains.

Modeling Numbers with Base Ten Blocks
Resource Type: MFAS Formative Assessment
Students use base ten blocks to model each of four numbers and then describe the number of hundreds, tens, and ones in each number.

MAFS.2.NBT.1.2
DOK Level 1: Recall

Count within 1000; skip-count by 5s, 10s, and 100s.

Resources:

Count Objects by 5s, 10s, and 100s
Resource Type: Tutorial
This tutorial will assist learners with a further understanding of how to skip count specifically by 5s, 10s, and 100s. The tutorial supports student learning with visual representations of counting groups of 5, 10 and 100 objects.

Skip Count by 5s
Resource Type: Lesson Plan
Help the Third Little Pig skip count to 1,000 bricks in groups of 5. (Note students are not expected to count from 0-1,000 by 5s, but this activity allows them to experience counting within a variety of contexts between 0 and 1,000.)

Counting by Fives Within 1000
Resource Type: MFAS Formative Assessment
Students are asked to count by fives, starting at various numbers, up to 1000.

Count by Tens and Hundreds Within 1000
Resource Type: MFAS Formative Assessment
Students are asked to count by tens, starting at various numbers, up to 1000 and to count by hundreds up to 1000.

MAFS.2.NBT.1.3
DOK Level 1: Recall

Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.

Resources:

And the Number Is
Resource Type: Lesson Plan
Students create their own mystery numbers by giving clues about the name, value, and multiples of the digits which comprise the number.

Different Ways to Represent 3-Digit Numbers
Resource Type: Lesson Plan
In this lesson, students will demonstrate their understanding of how to read and write numbers to 1000 using base-ten blocks and expanded form.

Writing Numerals from Number Names
Resource Type: MFAS Formative Assessment
Students write numerals that correspond to spoken number names.

Writing the Expanded Form of a Number
Resource Type: MFAS Formative Assessment
Students write the expanded form of a number from hearing the word name of a number.

MAFS.2.NBT.1.4

DOK Level 2: Basic Application of Skills & Concepts

Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.

Resources:

Comparing Three-Digit Numbers
Resource Type: Lesson Plan
The students use place value to compare two three-digit numbers and write the appropriate sign, >, =, < .

Can I Put You in Your Place?
Resource Type: Educational Game
Students play a game that allows them to place number cards in an order to make the least three digit number possible using place value. Students compare these numbers with a partner to see who has the least three digit number.

Comparisons 1
Resource Type: Problem-Solving Task
This task requires students to compare numbers that are identified by word names and not just digits. The order of the numbers described in words are intentionally placed in a different order than their base-ten counterparts so that students need to think carefully about the value of the numbers. Some students might need to write the equivalent numeral as an intermediate step to solving the problem.

[Inequalities Using Symbols](#)
Resource Type: MFAS Formative Assessment
Students are asked to compare numbers and then use the greater than, less than, or equal to symbols to complete inequality statements.

[Who Has More?](#)
Resource Type: MFAS Formative Assessment
Students are asked to compare two numbers used in a word problem and to write an inequality statement showing the relationship between the numbers.

MAFS.2.NBT.2 Use place value understanding and properties of operations to add and subtract.

MAFS.2.NBT.2.5
DOK Level 1: Recall

Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

Resources:

[Subtraction with Stanley](#)
Resource Type: Original Tutorial
By the end of this tutorial, you will be able to use place value to solve subtraction problems within 100.

[Adding and Subtracting on a Hundred Chart](#)
Resource Type: Lesson Plan
This lesson is not an introduction to adding and subtracting on the hundreds chart, but rather a practice of strategies to help build fluency. Students will use make-a-ten, decomposition, and other number sense strategies to create hidden designs on a hundreds chart then check their design against the answer key.

[Adding Within 100 Using Place Value](#)
Resource Type: MFAS Formative Assessment
Students are asked to solve two addition problems and are observed for the use of place value strategies.

[Fluently Subtract Within 100](#)
Resource Type: MFAS Formative Assessment
Students are asked to solve three subtraction within 100 problems and are observed for the use of place value strategies.

[Using Properties and Place Value to Add and Subtract](#)
Resource Type: MFAS Formative Assessment
Students are asked to complete addition and subtraction problems that can be done efficiently by using properties of operations.

MAFS.2.NBT.2.6

DOK Level 1: Recall

Add up to four two-digit numbers using strategies based on place value and properties of operations.

Resources:

Alternative Addition Strategies
Resource Type: Lesson Plan
This lesson explores recall of multiple alternative addition strategies of two-digit numbers. The lesson focus is to encourage students to use more than one strategy to solve addition problems. By reinforcing the multiple alternative addition strategies students will develop a strong understanding of addition structures and mechanics before moving on to three-digit addition.

Toll Bridge Puzzle
Resource Type: Problem-Solving Task
This task is intended to have students add four numbers as given in the standard while still being placed in a problem-solving context.

Adding Four Two-Digit Numbers
Resource Type: MFAS Formative Assessment
Students add four two-digit numbers without the context of a word problem.

Adding Two Digit Numbers Using Place Value
Resource Type: MFAS Formative Assessment
Students are asked to add four two digit numbers by adding the tens first.

MAFS.2.NBT.2.7

DOK Level 2: Basic Application of Skills & Concepts

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.

Resources:

Adding 3-Digit Numbers with Base Ten Blocks
Resource Type: Tutorial
This tutorial for student audiences will assist learners with a further understanding of how to add two three-digit numbers together by drawing out base ten blocks based on the digits in each place.

[Subtracting 3-Digit Numbers by Decomposing](#)
Resource Type: Tutorial
This tutorial will assist learners with a further understanding of how to regroup when subtracting by decomposing hundreds or tens.

[Strategy-Based Instruction in Three-Digit Subtraction](#)
Resource Type: Lesson Plan
Students will learn how to subtract three-digit subtraction problems using various subtraction strategies (expanded form and place value). These strategies help to build conceptual understanding, which will benefit in the development of their understanding of the standard algorithm.

[How Many Days Until Summer Vacation?](#)
Resource Type: Problem-Solving Task
The purpose of the task is to allow children an opportunity to subtract a three-digit number including a zero that requires regrouping. The solutions show how students can solve this problem before they have learned the traditional algorithm.

[Adding Within 1000](#)
Resource Type: MFAS Formative Assessment
Students are asked to solve an addition problem within 1,000.

[Subtracting Within 1000](#)
Resource Type: MFAS Formative Assessment
Students are asked to solve a subtraction problem within 1,000.

[Place Value Strategies for Addition and Subtraction](#)
Resource Type: MFAS Formative Assessment
Students explain another student's written strategy for adding and written strategy for subtracting three-digit numbers.

[MAFS.2.NBT.2.8](#)
DOK Level 1: Recall

Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900.

Resources:

[Mentally Add or Subtract 10 or 100 Using Expanded Form](#)
Resource Type: Tutorial
This tutorial will assist learners with a further understanding of how to add or subtract 10 or 100 to a 3-digit number by using expanded form. The tutorial supports student learning with visuals of decomposing 3-digit numbers into hundreds, tens and ones to solve addition or subtraction equations where 10 or 100 is either being added or subtracted.

[Hop Up, Hop Down](#)
Resource Type: Lesson Plan
In this lesson, the students will mentally add and subtract 10 and 100. The students will recognize that they are repeating the same calculation of "1 more" and "1 less".

Add 100 Mentally
Resource Type: MFAS Formative Assessment
Students are given three-digit numbers and asked to mentally add 100 to each number.

Subtract 10 Mentally
Resource Type: MFAS Formative Assessment
Students are given three-digit numbers and asked to mentally subtract 10 from each number.

MAFS.2.NBT.2.9
DOK Level 3: Strategic Thinking & Complex Reasoning

Explain why addition and subtraction strategies work, using place value and the properties of operations.

Resources:

Explaining Addition by Decomposing Numbers
Resource Type: Tutorial
This tutorial will assist learners with a further understanding of how to explain addition by breaking apart numbers. The tutorial supports student learning with visuals of using base ten blocks, drawn pictures, actions, place value, words and properties of operations to explain the work done in an addition problem.

Explaining Subtraction by Decomposing Numbers
Resource Type: Tutorial
This tutorial will assist learners with a further understanding of how to explain subtraction by breaking apart numbers. The tutorial supports student learning with visuals of using base ten blocks, drawn pictures, actions, place value, words and open number lines to explain the work done in a subtraction problem.

Using Place Value
Resource Type: MFAS Formative Assessment
Students are asked to solve a two-digit addition problem using a place value strategy and then are asked to explain why this strategy works.

Measurement and Data

MAFS.2.MD.1 Measure and estimate lengths in standard units.

MAFS.2.MD.1.1
DOK Level 2: Basic Application of Skills & Concepts

Measure the length of an object to the nearest inch, foot, centimeter, or meter by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.

Resources:

Might We Measure This
Resource Type: Lesson Plan
Students will explore the use of measuring tools, such as rulers, yard sticks, meter sticks, and soft measuring tapes. They will decide which tool to use to measure a specific object, based on the object's overall length. They will compare tools used for measurement and use a ruler to measure inches and a foot.

Measuring Mania
Resource Type: Lesson Plan
This lesson is a culminating activity for the end of a unit on measurement. Students focus on selecting tools for measuring various objects, justifying why they picked a certain tool.

Measuring to the Nearest Foot
Resource Type: MFAS Formative Assessment
Students use a ruler or yardstick to measure a length to the nearest foot.

Measuring to the Nearest Inch and Centimeter
Resource Type: MFAS Formative Assessment
Students use a ruler to measure one segment to the nearest inch and one segment to the nearest centimeter.

Rulers and Meter Sticks
Resource Type: MFAS Formative Assessment
Students choose an appropriate tool to measure a hallway.

MAFS.2.MD.1.2
DOK Level 2: Basic Application of Skills & Concepts
Describe the inverse relationship between the size of a unit and number of units needed to measure a given object. Example: Suppose the perimeter of a room is lined with one-foot rulers. Now, suppose we want to line it with yardsticks instead of rulers. Will we need more or fewer yardsticks than rulers to do the job? Explain your answer.

Resources:

How Long Is It?
Resource Type: Lesson Plan
This is a lesson designed to help students gain a better understanding of how different units of measurement (inches to feet) change in relationship to the size of the object. Students will get hands-on practice measuring objects using at least two different tools (inch/centimeter ruler, yardstick, meter stick, tape measure).

How Many Inches, Feet and Yards?
Resource Type: Lesson Plan
The students will measure the length of given objects using a long tape measure as a measuring tool. The students will measure these objects using length units of different lengths for the measurements and describe how the two measurements relate.

[Centimeters and Meters](#)
Resource Type: MFAS Formative Assessment
Students measure the length of a line segment twice and are given an opportunity to explain why the line segment measures in fewer meters than centimeters.

[Feet and Yards](#)
Resource Type: MFAS Formative Assessment
Students are given the length of an alligator in both feet and yards and are asked to explain why the measure given in feet is greater than the measure given in yards.

MAFS.2.MD.1.3
DOK Level 2: Basic Application of Skills & Concepts
Estimate lengths using units of inches, feet, yards, centimeters, and meters.

Resources:

[Can I Make a Reasonable Guess?](#)
Resource Type: Lesson Plan
This lesson uses a discovery approach to estimate the length of objects using inches, feet, meters and centimeters. The students will utilize math standard(s) as they analyze math solutions and explain their solutions. Since this lesson uses estimation, it is a good lesson to use to gain knowledge of how realistic students are with units of measurements.

[Estimating Lengths & Distances](#)
Resource Type: Lesson Plan
This lesson is designed to help students estimate lengths using standard and metric units of measure. They will participate in a teacher-guided activity, estimating then measuring how far a ball rolls on 3 different surfaces. They will also estimate then measure about 10 items that are found around the classroom. While they are estimating and measuring, they have to decide what unit of measure is best suited for the specific object.

[Estimating in Centimeters](#)
Resource Type: MFAS Formative Assessment
Students are asked to estimate the length of a line segment in centimeters.

[Estimating in Yards](#)
Resource Type: MFAS Formative Assessment
Students are asked to estimate a predetermined length in yards.

MAFS.2.MD.1.4
DOK Level 2: Basic Application of Skills & Concepts
Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.

Resources:

[Comparing Inch by Inch](#)
Resource Type: Lesson Plan
This is a hands-on lesson that allows students to practice measuring different sized objects and writing equations to determine how much longer one object is than the other.

[Measure Both and Find the Difference](#)
Resource Type: Lesson Plan
Students will measure the lengths of two objects to the nearest inch and determine how much longer one object is than the other.

[Dragonflies and Grasshoppers](#)
Resource Type: MFAS Formative Assessment
Students shown images of a grasshopper and a dragonfly and are asked to determine how much longer one is than the other.

[How Much Longer?](#)
Resource Type: MFAS Formative Assessment
Students are asked to determine how many inches longer one line segment is than another.

[MAFS.2.MD.2](#) Relate addition and subtraction to length.

[MAFS.2.MD.2.5](#)
DOK Level 2: Basic Application of Skills & Concepts
Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.

Resources:

[Racing Riley Adds Lengths](#)
Resource Type: Original Tutorial
This tutorial will help students with addition strategies and solving problems involving lengths in the same unit.

[Adding and Subtracting with Color Tiles](#)
Resource Type: Lesson Plan
This tutorial for student audiences will assist learners with a further understanding of how to solve length word problems using addition and subtraction. The tutorial includes visual models of lining up the measurement tools (ruler and color tiles) appropriately to take accurate measurements and subtracting or adding one measurement from the other to determine the difference.

[Heading Home](#)
Resource Type: MFAS Formative Assessment
Students determine the distance walked by a student on her way home from her friend's house.

[Subtracting Measures](#)
Resource Type: MFAS Formative Assessment
Students use subtraction to solve problems requiring subtraction of measures.

MAFS.2.MD.2.6
DOK Level 2: Basic Application of Skills & Concepts

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.

Resources:

[Solving Length Word Problems Using a Number Line](#)
Resource Type: Tutorial
This tutorial for student audiences will assist learners with a further understanding of solving length word problems using a number line. The tutorial includes visual models of different examples of adding on using a number line to solve word problems.

[Get Up and Go! With Addition and Subtraction](#)
Resource Type: Lesson Plan
The lesson uses a number line to facilitate addition and subtraction.

[Representing Nine on the Number Line](#)
Resource Type: MFAS Formative Assessment
Students are asked to scale a number line and use it to draw a segment of length nine.

[Representing Numbers with Length](#)
Resource Type: MFAS Formative Assessment
Students are asked to find a number that was represented by a length on an incomplete number line.

[MAFS.2.MD.3](#) Work with time and money.

MAFS.2.MD.3.7
DOK Level 1: Recall

Tell and write time from analog and digital clocks to the nearest five minutes.

Resources:
[Telling Time Examples #1](#)
Resource Type: Tutorial
Tell time on a labeled analog clock to the nearest five minutes.

[Telling Time Examples #2](#)
Resource Type: Tutorial
Demonstrates how to tell time on unlabeled analog clocks to the nearest five minutes.

[Excuse Me! Can you please give me the time?](#)
Resource Type: Lesson Plan
In this lesson, the students will work together to create story problems that will allow them to tell and write time to the nearest five minutes.

[Clipart Clocks](#)
Resource Type: Image
This website has over 2,000 illustrations of analog clocks. There are clocks with a variety of numeral fonts, and plain faces showing all possible times in one-minute increments. There are also an assortment of antique clocks, pocket watches, pendulums, hour glasses, and the interior devices of time pieces.

[A Good Night's Sleep](#)
Resource Type: MFAS Formative Assessment
Students are asked to write times shown on an analog clock.

[Write Times on Digital Clocks](#)
Resource Type: MFAS Formative Assessment
Students are read three times to the nearest five minutes and asked to write the times on digital clocks.

MAFS.2.MD.3.8

DOK Level 2: Basic Application of Skills & Concepts

Solve one- and two-step word problems involving dollar bills (singles, fives, tens, twenties, and hundreds) or coins (quarters, dimes, nickels, and pennies) using $ and ¢ symbols appropriately. Word problems may involve addition, subtraction, and equal groups situations1. Example: The cash register shows that the total for your purchase is 59¢. You gave the cashier three quarters. How much change should you receive from the cashier?

a. Identify the value of coins and paper currency.

b. Compute the value of any combination of coins within one dollar.

c. Compute the value of any combinations of dollars (e.g., If you have three ten-dollar bills, one five-dollar bill, and two one-dollar bills, how much money do you have?).

d. Relate the value of pennies, nickels, dimes, and quarters to other coins and to the dollar (e.g., There are five nickels in one quarter. There are two nickels in one dime. There are two and a half dimes in one quarter. There are twenty nickels in one dollar).

Resources:

Coin Combinations: How else can you pay for that?
Resource Type: Tutorial
In this lesson, students will learn that there can be multiple ways (multiple coin combinations) to reach a given money amount. Using money manipulatives, students will work cooperatively and independently to practice finding different coin combinations for a given money amount. Students will also become comfortable knowing that there are multiple ways to reach a correct answer.

Let's Go Shopping- Counting, Adding, and Subtracting Coins
Resource Type: Lesson Plan
Who doesn't love to shop?!? In this fun, interactive activity, students review how to count groups of coins, learn how to add and subtract groups of coins, and go "shopping" to buy items and determine how much change they would receive.

Cash Out!
Resource Type: Educational Game
This fun interactive game helps your students practice making change! Students get to be a cashier of a store full of fun characters. Choose from different difficulty levels and choose to display hints or not (for differentiated instruction).

Combinations of Bills
Resource Type: MFAS Formative Assessment
Students are asked to combine the values of bills and write the total value using the dollar symbol.

Combinations of Coins
Resource Type: MFAS Formative Assessment
Students are asked to combine the values of coins and write the total value using the cent symbol.

Relating Coins
Resource Type: MFAS Formative Assessment
Students are asked to relate the values of pennies, nickels, dimes, and quarters to other coins and to the dollar.

MAFS.2.MD.4 Represent and interpret data.

MAFS.2.MD.4.9
DOK Level 2: Basic Application of Skills & Concepts
Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.

Resources:

Introduction to Perimeter
Resource Type: Tutorial
This Khan Academy video tutorial presents finding perimeter by adding side-lengths of various polygons.

X Marks the Spot
Resource Type: Lesson Plan
In this lesson, students will make multiple measurements and record the measurements on a line plot.

Hand Span Measures
Resource Type: Problem-Solving Task
Hand span is a measure that has been used for many years. By placing the hand on the edge of a piece of paper and marking the tips of the thumb and little finger, the student can measure a straight line. This is a better method than placing the hand directly on the ruler. Discuss rounding conventions. This could be used as a class activity, or students could gather and plot data on separate line plots from different age groups.

Measuring Our Pencils- Part One
Resource Type: MFAS Formative Assessment
Students measure their pencils to the nearest whole inch.

Measuring Our Pencils- Part Two
Resource Type: MFAS Formative Assessment
Students make a line plot from a set of measurement data that includes measurements to the nearest whole inch.

MAFS.2.MD.4.10
DOK Level 2: Basic Application of Skills & Concepts
Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.

Resources:

Graphing Away
Resource Type: Lesson Plan
In this lesson, students will be introduced to bar graphs. The knowledge they learn about bar graphs will be applied when they draw their own bar graph using a survey question of their choice.

M & M Lab
Resource Type: Lesson Plan
Students use a bag of M & M's to complete a tally chart, a bar chart, a line graph and a pictograph by recording the different colors of the M & Ms.

Resource Type: MFAS Formative Assessment
Students are asked to answer questions about a given bar graph.

Resource Type: MFAS Formative Assessment
Students are asked to create a picture graph from a given set of data.

Geometry

[MAFS.2.G.1](#) Reason with shapes and their attributes.

[MAFS.2.G.1.1](#)
DOK Level 1: Recall

Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.

Resources:

[Identifying Quadrilaterals](#)
Resource Type: Tutorial
This tutorial will assist learners with a further understanding of how to identify quadrilaterals by finding shapes with 4 straight sides that meet at 4 corners. The tutorial supports student learning with visual representations to help identify various shaped and sized quadrilaterals, including non-examples.

[Attributes of Geometric Shapes](#)
Resource Type: Lesson Plan
This resource is a fun and engaging activity that will allow the students to identify and name shapes by their attributes. The students will move around and construct various geometric figures in order to build a solid understanding of the figures.

[It's All About the Shapes](#)
Resource Type: Lesson Plan
The teacher begins the lesson by reading The Greedy Triangle to the class to review shape names and attributes. The students create shapes using geoboards and follow up their exploration with Shape Concentration (a game played with a partner). The teacher gathers the students together (whole group) and completes a large Venn Diagram comparing two different shapes. The students write in their journals observations they discovered during the lesson.

[Let's "Face" It!](#)
Resource Type: Lesson Plan
Triangles, Quadrilaterals, Pentagons, and Hexagons! Oh My! Students will get into shape after reading "The Greedy Triangle" by Marilyn Burns. They will explore their own classroom and identify the many shapes that can be found! They will also be able to

identify the plane shapes on three-dimensional figures as the faces of the figures. The lesson includes some printable solid figures that the students can construct themselves!

Four Sided Figures
Resource Type: MFAS Formative Assessment
Students are shown a quadrilateral and asked to identify it. Then students are asked to draw another example of a quadrilateral that is different from the one that they were shown.

Which of These are Cubes?
Resource Type: MFAS Formative Assessment
Students are shown a set of three-dimensional figures and are asked to identify the cubes. In addition, they are asked to explain why the other figures are not cubes.

MAFS.2.G.1.2
DOK Level 1: Recall

Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.

Resources:
Finding the Number of Same-Size Squares in a Rectangle
Resource Type: Tutorial
This tutorial for student audiences will assist learners with a further understanding of how to find the total number of same-size squares in a rectangle by dividing it into rows and columns. The tutorial supports student learning with visuals of how to equally partition rectangles into rows and columns and count the number of equally sized squares within the entire rectangle.

Which Rectangle is Bigger?
Resource Type: Lesson Plan
Students will learn how to partition rectangles into equal parts and write equations to represent the parts. They will gain a basic understanding of area from the book Bigger, Better, BEST! by Stuart J. Murphy.

Complete the Rectangle
Resource Type: MFAS Formative Assessment
Students are given a rectangle with one column and one row of unit squares (same size squares) drawn. Students are asked to complete and then find the total number of same size squares in the partition.

Construct Rows and Columns
Resource Type: MFAS Formative Assessment
Students are given a rectangle with tick marks drawn horizontally on one side of the rectangle and vertically on the bottom of the rectangle. Students are asked to partition the rectangle into columns and rows and then determine how many unit squares (same-size squares) are in the rectangle.

MAFS.2.G.1.3

DOK Level 1: Recall

Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.

Resources:

Describe Fractions of Rectangles

Resource Type: Tutorial

This tutorial will assist students in understanding how to describe fractions of a rectangle by partitioning the whole into 2, 3 and 4 equal shares. The tutorial provides visual models of examples and non-examples of partitioning a rectangle.

Partitioning Rectangles into Equal Shares Multiple Ways

Resource Type: Tutorial

This tutorial for student audiences will assist learners with a further understanding of how to partition a rectangle into equal shares multiple ways. The tutorial supports student learning with visuals of how to equally partition examples of various rectangles into thirds and fourths.

Fraction Action

Resource Type: Lesson Plan

In this lesson students will begin to recognize how to partition circles and rectangles equally into halves, thirds, and fourths. The students will be introduced to the concept using a video and literature, delve deeper into their own understanding by dividing pastries, and conclude the lesson with a game played with a partner.

Halves, Thirds, and Fourths

Resource Type: MFAS Formative Assessment

Students partition three different circles into two, three, and four equal parts and consider what fraction each part represents.

Different Halves

Resource Type: MFAS Formative Assessment

Students consider if two different shaped halves of the same rectangle represent equal shares.