

3rd Grade Mathematics Instructional Toolkit

The 3rd 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 3rd grade Mathematics Florida Standards. This toolkit includes a breakdown of the standards, standards aligned resources and information related to the 3rd Grade Mathematics Florida Standards Assessment (FSA). 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](#).

3rd Grade Mathematics Florida Standards Assessment

This section highlights some key information related to the 3rd Grade Mathematics FSA that can be found on the FSA Portal. These items include the Test Design Summary and Blueprint, Test Item Specifications and FSA Practice Tests.

Test Design Summary and Blueprint

The 3rd grade mathematics standards can be broken down into three major reporting categories as assessed on the 3rd Grade Mathematics FSA with a corresponding weight. This information can be found on page 1 of the Test Design Summary and Blueprint. The reporting categories listed below link to their respective places within this document.

[Operations and Algebraic Thinking and Numbers in Base Ten \(48%\)](#)

[Number and Operations- Fractions \(17%\)](#)

[Measurement, Data, and Geometry \(35%\)](#)

Test Item Specifications

Each grade-level test item specifications document indicates the alignment of items with the Florida Standards. Assessment limits are included in the specifications, which define the range of content knowledge in the assessment items for the standard. Sample items for each standard are also included in the specifications document. Each standard in this toolkit lists the corresponding page number in the specifications document.

Practice Tests

Practice tests are available for students to become familiar with the various item types that may be used on the 3rd Grade Mathematics FSA.

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.

[3rd Grade Mathematics Course Description](#)

Course descriptions provide an overview for a course and designate which standards are in that course. The 3rd grade mathematics course description includes resources for all 39 standards within the 3rd 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 for students, these tasks can be used by teachers 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 course and will be assessed throughout the 3rd Grade Mathematics FSA. 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. It is important to distinguish between the DOK rating for a given standard and the possible DOK ratings for assessment items designed to address the standard. This is particularly important for assessment purposes, since 50% or more of assessment items associated with a given standard should meet or exceed the DOK level of the standard. 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. For more information about the DOK complexity for mathematics assessments, please visit page 9 of the mathematics [Test Design Summary and Blueprint](#) on the [FSA Portal](#).

[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.

Operations and Algebraic Thinking

[MAFS.3.OA.1](#) Represent and solve problems involving multiplication and division.

[MAFS.3.OA.1.1](#)

DOK Level 1: Recall

Interpret products of whole numbers, e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each. *For example, describe a context in which a total number of objects can be expressed as 5×7 .*

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Resources:

[Intro to Multiplication](#)

Resource Type: Tutorial

In this Khan Academy tutorial video, learn to use arrays and repeated addition to visualize multiplication.

[Multiplication as Groups of Objects](#)

Resource Type: Tutorial

In this Khan Academy tutorial video, learn to use arrays to show different groups of objects while relating this to multiplication.

[Array to Multiply](#)

Resource Type: Lesson Plan

In this lesson, students will understand the concept of arrays and will be able to create/draw an array for multiplication sentences. Engaging center game is used to help student with concrete visual representation of multiplication sentences.

[Interpreting Multiplication](#)

Resource Type: MFAS Formative Assessment

Students are asked to explain what 5×7 means and to provide a real-world context for 5×7 .

[What Does the 21 Mean?](#)

Resource Type: MFAS Formative Assessment

Students are given a context for a multiplication problem and asked to determine how to solve it and what the product means.

[MAFS.3.OA.1.2](#)

DOK Level 1: Recall

Interpret whole-number quotients of whole numbers, e.g., interpret $56 \div 8$ as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each.

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Resources:[Pet Store Partitive Division](#)

Resource Type: Lesson Plan

In this lesson students will model partitive division through the real-world activity of a pet store owner.

[Interpreting Division](#)

Resource Type: MFAS Formative Assessment

Students are asked to illustrate a division problem and write a corresponding equation.

[What Does the Six Mean?](#)

Resource Type: MFAS Formative Assessment

Students are given division word problem and asked to determine how it might have been solved and what the quotient means.

[MAFS.3.OA.1.3](#)

DOK Level 2: Basic Application of Skills & Concepts

Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

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Resources:[Average Height of a Building's Floor](#)

Resource Type: Tutorial

In this Khan Academy video tutorial, students will use a picture and understanding of multiplication to solve a division word problem. Watch out for unnecessary information.

[The Array Frame, Your Best Friend](#)

Resource Type: Lesson Plan

In this lesson, students will learn to use the structure of array frames to build familiarity and fluency with the array as a tool. Students will solve several multiplication word problems using the array as a representation.

[Make Your Way With Arrays](#)

Resource Type: Lesson Plan

Students will solve multiplication and division word problems by drawing arrays and writing the related equation.

[Finding an Unknown Product](#)

Resource Type: MFAS Formative Assessment

Students are asked to model an equal groups and an array problem in which the product is unknown with multiplication or division equations and then solve each problem.

[Measurement Problems](#)

Resource Type: MFAS Formative Assessment

Students are asked to model a multiplication and a division problem that involve measurement quantities with multiplication and division equations and then solve each problem.

[MAFS.3.OA.1.4](#)

DOK Level 1: Recall

Determine the unknown whole number in a multiplication or division equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations $8 \times ? = 48$, $5 = ? \div 3$, $6 \times 6 = ?$.*

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Resources:

[Discovering the Mystery Factor Through Arrays](#)

Resource Type: Lesson Plan

Students will begin with the use of manipulatives to solve for unknown factors by building arrays. They will progress to drawn models as mastery is shown with manipulatives.

[Giddy Up, Round Up: Relating Division to Multiplication](#)

Resource Type: Lesson Plan

In this lesson, students will learn to solve division problems by relating them to multiplication facts. Practice materials focus on the 6's and 8's multiplication facts.

[Find the Unknown Number](#)

Resource Type: MFAS Formative Assessment

Students are given multiplication and division equations within 50 and are asked to find missing numbers. The missing numbers are presented in all positions.

[Missing Numbers in Division Equations](#)

Resource Type: MFAS Formative Assessment

Students are given division equations involving numbers within 50 and are asked to find missing numbers. The missing numbers are presented in all positions.

[MAFS.3.OA.2](#) Understand properties of multiplication and the relationship between multiplication and division.

[MAFS.3.OA.2.5](#)

DOK Level 2: Basic Application of Skills & Concepts

Apply properties of operations as strategies to multiply and divide. *Examples: If $6 \times 4 = 24$ is known, then $4 \times 6 = 24$ is also known. (Commutative property of multiplication.) $3 \times 5 \times 2$ can be found by $3 \times 5 = 15$, then $15 \times 2 = 30$, or by $5 \times 2 = 10$, then $3 \times 10 = 30$. (Associative property of multiplication.) Knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$, one can find 8×7 as $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$. (Distributive property.)*

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Resources:[Monkeying Multiplication](#)

Resource Type: Original Tutorial

Learn strategies, like the commutative property, to help you become better at multiplying in this interactive tutorial.

[Explanation of the Distributive Property of Multiplication](#)

Resource Type: Tutorial

In this video tutorial from Khan Academy, explore the distributive property of multiplication: Why does it work? How does it work? Why would I put it to use?

[Amazing Arrays](#)

Resource Type: Lesson Plan

This is a hands-on lesson for introducing and practicing building arrays to create models that represent the distributive property of multiplication.

[Break Apart and Put Together](#)

Resource Type: MFAS Formative Assessment

Students are given two arrays, one representing the equation $7 \times 9 = 63$ and the other representing the equation $(5 + 2) \times 9 = 63$, to see if they recognize a relationship between the two.

[Does it Work for Division?](#)

Resource Type: MFAS Formative Assessment

Students are asked if the Commutative Property holds for division.

[MAFS.3.OA.2.6](#)

DOK Level 2: Basic Application of Skills & Concepts

Understand division as an unknown-factor problem. For example, find $32 \div 8$ by finding the number that makes 32 when multiplied by 8.

[Page 14 Test Item Specifications](#)**Resources:**[Unknowns with Multiplication and Division Equations](#)

Resource Type: Tutorial

In this Khan Academy video tutorial, students will find the number to replace the symbol for the unknown in multiplication and division equations.

[Grandma Wants to Know!](#)

Resource Type: Lesson Plan

Help Mom and Dad tell Grandma about Cindy's trip to the carnival using bar models and arrays to relate division to multiplication with an unknown factor.

[Multiplication as the Inverse of Division](#)

Resource Type: MFAS Formative Assessment

Students are given a word problem and asked to write an equation for the problem. Then the students are to select a multiplication equation that can also be used to solve the problem.

[Alien Math](#)

Resource Type: MFAS Formative Assessment

Students are told of a visiting alien from a planet where division is not taught, and asked to rewrite four division problems as multiplication problems so the alien can do them. The students are also asked to explain why it might be easier to do the multiplication problems than the given division problem.

[MAFS.3.OA.3 Multiply and divide within 100.](#)

[MAFS.3.OA.3.7](#)

DOK Level 1: Recall

Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

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Resources:

[Arithmetic Workout](#)

Resource Type: Educational Game

This tutorial will help you to brush up on your multiplication, division and factoring skills with this exciting game.

[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 with Basic Multiplication Facts](#)

Resource Type: MFAS Formative Assessment

Students are assessed on their fluency with multiplication facts for the products of two one-digit numbers.

[Fluency with Division](#)

Resource Type: MFAS Formative Assessment

Students are assessed for fluency with division.

[MAFS.3.OA.4](#) Solve problems involving the four operations, and identify and explain patterns in arithmetic.

[MAFS.3.OA.4.8](#)

DOK Level 2: Basic Application of Skills & Concepts

Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

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Resources:

[Getting the Hang of Two-Step Word Problems](#)

Resource Type: Lesson Plan

Students will solve two-step word problems involving subtraction and division and represent these problems using equations with a letter standing for the unknown quantity.

[Bake Sale](#)

Resource Type: MFAS Formative Assessment

Students solve a two-step word problem involving addition and division and then write an equation to represent the problem.

[Books at the Book Fair](#)

Resource Type: MFAS Formative Assessment

Students solve a two-step word problem involving multiplication and subtraction and then write an equation to represent the problem.

[MAFS.3.OA.4.9](#)

DOK Level 3: Strategic Thinking & Complex Reasoning

Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. *For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.*

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Resources:

[The Power of Patterns](#)

Resource Type: Lesson Plan

During this lesson plan, students will work a real world problem to discover similarities and differences between the patterns of adding 2 to a number and doubling a number. The problem is set in the real world context of twin brothers who choose different patterning strategies given by their grandma to save for buying a car.

[Adding Odd Numbers](#)

Resource Type: MFAS Formative Assessment

Students are asked to consider what type of number results when adding two odd numbers and when adding three odd numbers.

[Patterns Within the Multiplication Table](#)

Resource Type: MFAS Formative Assessment

Students are asked to find the missing numbers in a column of a multiplication table by using a pattern found within the table.

Number and Operations in Base Ten

[MAFS.3.NBT.1](#) Use place value understanding and properties of operations to perform multi-digit arithmetic.

[MAFS.3.NBT.1.1](#)

DOK Level 1: Recall

Use place value understanding to round whole numbers to the nearest 10 or 100.

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Resources:

[Rounding Party](#)

Resource Type: Original Tutorial

Learn how to round two-, three-, and four-digit numbers to the nearest 10 or 100.

[Examples of Rounding to the Nearest 10 and 100](#)

Resource Type: Lesson Plan

In this Khan Academy video tutorial, see examples of how to round up to four-digit numbers to the nearest ten and hundred.

[Mystery Number Rounding Problem](#)

Resource Type: MFAS Formative Assessment

The student determines the value of a number which when rounded to the nearest 10 and to the nearest 100 is 300.

[Round to the Nearest Hundred](#)

Resource Type: MFAS Formative Assessment

Students round two-, three-, and four-digit numbers to the nearest hundred.

[MAFS.3.NBT.1.2](#)

DOK Level 1: Recall

Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

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Resources:

[Speedy Sam](#)

Resource Type: Original Tutorial

Speedy Sam and her friends like to do everything as quickly as possible, including their math homework. Today, you're going to help Speedy Sam add and subtract as quickly as possible by using the properties of addition and subtraction.

[Subtracting Hundreds, Tens and Ones](#)

Resource Type: Tutorial

In this Khan Academy video tutorial, learn how to subtract three-digit numbers by subtracting ones, tens, and hundreds represented with base ten blocks and the standard algorithm.

[Adding and Subtracting Using Properties](#)

Resource Type: MFAS Formative Assessment

Students are asked to complete addition and subtraction problems that can be done more easily by using properties.

[Subtraction within 1000](#)

Resource Type: MFAS Formative Assessment

Students are asked to complete four subtraction problems (within 1000) using strategies of their own choosing.

[MAFS.3.NBT.1.3](#)

DOK Level 1: Recall

Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9×80 , 5×60) using strategies based on place value and properties of operations.

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Resources:

[Ten, Ten, We All Win!](#)

Resource Type: Lesson Plan

In this lesson, students will be able to multiply one-digit numbers by 10 in the range of 10-90 using strategies based on place value and properties of operations.

[Multiplying by Multiples of Ten](#)

Resource Type: MFAS Formative Assessment

Students are asked to explain how the knowing the product of nine and three can help in finding the product of nine and 30.

[Packages of 50](#)

Resource Type: MFAS Formative Assessment

Students consider the solution to a multiplication problem and explain their thinking.

Numbers and Operations- Fractions

[MAFS.3.NF.1](#) Develop understanding of fractions as numbers.

[MAFS.3.NF.1.1](#)

DOK Level 2: Basic Application of Skills & Concepts

Understand a fraction $1/b$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size $1/b$.

Also Assesses: [MAFS.3.G.1.2](#) Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. *For example, partition a shape into 4 parts with equal area, and describe the area of each part as $1/4$ of the area of the shape.*

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Resources:

[Sharing with Fractions](#)

Resource Type: Original Tutorial

By the end of this tutorial, you will be able to name or identify fractions, especially unit fractions, and justify the fractional value using an area model.

[What's the Part? What's the Whole?](#)

Resource Type: Lesson Plan

In this lesson, students will correctly model and discover fractions and their whole relationships.

[Fraction Action!](#)

Resource Type: Lesson Plan

This lesson will help students understand that fractions are parts of a whole. The lesson introduces fractional parts using a familiar manipulative.

[Three Quarters of the Race](#)

Resource Type: MFAS Formative Assessment

Students are read a word problem about a student who has run three-fourths of a race and asked to describe what that means.

[Four Parts of the Whole](#)

Resource Type: MFAS Formative Assessment

Students partition a rectangle into four equal parts and describe each part using a fraction.

[MAFS.3.NF.1.2](#)

DOK Level 2: Basic Application of Skills & Concepts

Understand a fraction as a number on the number line; represent fractions on a number line diagram.

- a. Represent a fraction $1/b$ on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size $1/b$ and that the endpoint of the part based at 0 locates the number $1/b$ on the number line.

- b. Represent a fraction a/b on a number line diagram by marking off a lengths $1/b$ from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.

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Resources:

[Fractions on a Number Line](#)

Resource Type: Lesson Plan

In this lesson, students will have experiences with determining where a given fraction falls in regards to "benchmark" fractions and will practice placing fractions on a number line.

[Locating Fractions Greater Than One on the Number Line](#)

Resource Type: Problem-Solving Task

This task will help students gain a better understanding of fractions and on the number line.

[Locating Fractions Less Than One on the Number Line](#)

Resource Type: Problem-Solving Task

In every part of this task, students must treat the interval from 0 to 1 as a whole, partition the whole into the appropriate number of equal sized parts, and then locate the fraction(s).

[Five-Eighths on the Number Line](#)

Resource Type: MFAS Formative Assessment

Students are asked to locate five-eighths on a number line that has been anchored by zero and one, but that has not yet been scaled.

[One-Third on the Number Line](#)

Resource Type: MFAS Formative Assessment

Students are given four number line diagrams and asked to choose the one that correctly shows the location of one-third.

[MAFS.3.NF.1.3](#)

DOK Level 3: Strategic Thinking & Complex Reasoning

Explain equivalence of fractions, and compare fractions by reasoning about their size.

- a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.
- b. Recognize and generate simple equivalent fractions, e.g., $1/2 = 2/4$, $4/6 = 2/3$). Explain why the fractions are equivalent, e.g., by using a visual fraction model.
- c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. *Examples: Express 3 in the form $3 = 3/1$; recognize that $6/1 = 6$; locate $4/4$ and 1 at the same point of a number line diagram.*
- d. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.

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Resources:

[Equal Fractions in Disguise](#)

Resource Type: Original Tutorial

Help private investigator Bulls-Eye Magoo solve a mystery at the local bakery! While solving the mystery students will understand fraction equivalence.

[Comparing Fractions on a Number Line and With Rectangular Models](#)

Resource Type: Tutorial

In this Khan Academy video tutorial, four fractions are compared by plotting them on a number line and drawing models.

[Comparing Fractions with Brownies](#)

Resource Type: Lesson Plan

Students will demonstrate their understanding of comparing fractions with the same numerator through engaging problem solving using real-world application with brownies as a model. Students will be actively engaged in a fraction war game and "would you rather have" statements to solidify their understanding of comparing fractions with the same numerator.

[Comparing Fractions](#)

Resource Type: MFAS Formative Assessment

Students compare two pairs of fractions and record their comparisons using the less than or greater than symbols.

[Equivalent Fractions](#)

Resource Type: MFAS Formative Assessment

Students determine whether or not fractions are equivalent.

Measurement and Data

[MAFS.3.MD.1](#) Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.

[MAFS.3.MD.1.1](#)

DOK Level 2: Basic Application of Skills & Concepts

Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.

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Resources:

[Count Every Minute](#)

Resource Type: Original Tutorial

By the end of this tutorial, you should be able to select the digital time to the minute that matches the time shown on an analog clock and on a number line.

[Solve Elapsed Time Word Problems Using a Number Line](#)

Resource Type: Tutorial

In this Khan Academy video tutorial, explore how to solve an elapsed time word problem using a number line. Mom asks you to be home by 5:45. You know the number of minutes it takes to get home. What time do you leave?

[Are We There Yet? Elapsed Time to the Rescue](#)

Resource Type: Lesson Plan

In this lesson students will learn how to use the "mountain strategy" to complete elapsed time word problems. This lesson incorporates hands on learning and building to make the process fun and engaging.

[Find the Time](#)

Resource Type: MFAS Formative Assessment

Students are asked to solve two subtraction problems involving time.

[Time Spent](#)

Resource Type: MFAS Formative Assessment

Students determine time intervals in minutes given a starting time and an ending time on analog clocks.

MAFS.3.MD.1.2

DOK Level 2: Basic Application of Skills & Concepts

Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units.

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Resources:

[Timmy's Trouble with Taffy](#)

Resource Type: Original Tutorial

By the end of this tutorial, you will be able to estimate and identify the measure of the masses of objects in grams and kilograms.

[Liter Intuition](#)

Resource Type: Tutorial

In this tutorial video from Khan Academy, explore questions such as: What is the volume of a jar of milk? How about a spoon? A swimming pool?

[Addition and Subtraction with Mass and Volume](#)

Resource Type: MFAS Formative Assessment

Students solve two one-step word problems about mass and volume.

[Estimating and Measuring Mass](#)

Resource Type: MFAS Formative Assessment

Students are asked to estimate the mass (in grams) of a stapler and then are asked to determine its actual mass using a scale or balance.

[MAFS.3.MD.2](#) Represent and interpret data.

[MAFS.3.MD.2.3](#)

DOK Level 2: Basic Application of Skills & Concepts

Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. *For example, draw a bar graph in which each square in the bar graph might represent 5 pets.*

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Resources:

[Bar Graph Jones and the Pyramid of Pi](#)

Resource Type: Original Tutorial

Learn to use the information presented in scaled bar graphs to solve one-step “how many more” and “how many fewer” problems.

[Fitness Frenzy](#)

Resource Type: Lesson Plan

In this lesson, students will analyze and create frequency tables, bar graphs, pictographs, and line plots.

[Collecting Cans for Recycling](#)

Resource Type: MFAS Formative Assessment

Students answer questions about a scaled bar graph.

[Favorite After School Activity](#)

Resource Type: MFAS Formative Assessment

Students are asked to sort a set of data and create a scaled bar graph using their sorted data.

[MAFS.3.MD.2.4](#)

DOK Level 2: Basic Application of Skills & Concepts

Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.

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Resources:

[Measure Up! Measuring to Make a Line Plot](#)

Resource Type: Lesson Plan

In this lesson, students will generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch and show the data by making a line plot.

[Measuring Our Pencils- Part One](#)

Resource Type: MFAS Formative Assessment

Students are asked to measure their pencils to the nearest quarter 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 fourth of an inch.

[MAFS.3.MD.3](#) Geometric measurement: understand concepts of area and relate area to multiplication and to addition.

[MAFS.3.MD.3.5](#)

DOK Level 1: Recall

Recognize area as an attribute of plane figures and understand concepts of area measurement.

- a. A square with side length 1 unit, called “a unit square,” is said to have “one square unit” of area, and can be used to measure area.
- b. A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.

Also Assesses: [MAFS.3.MD.3.6](#) Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).

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Resources:

[Building a Square Garden](#)

Resource Type: Original Tutorial

In this tutorial, you will learn to identify one square unit that can be used to measure area.

[Techies Talk Area](#)

Resource Type: Original Tutorial

By the end of this tutorial, you should be able to use square units to cover the interior of a rectangle and know this is a measurement of the area of the rectangle.

[The Square Counting Shortcut](#)

Resource Type: Problem-Solving Task

Students should break the letters into rectangles, multiply to find the areas, and add up the areas. However, students should not be discouraged from using individual counting to start if they are stuck.

[Unit Square](#)

Resource Type: MFAS Formative Assessment

Students are asked to explain how the area of a rectangle can be calculated and their responses are examined for references to the unit square as the unit of measurement.

[Fenced Dog Run](#)

Resource Type: MFAS Formative Assessment

Students are given a diagram showing a rectangular dog run and asked to find its area.

MAFS.3.MD.3.7

DOK Level 3: Strategic Thinking & Complex Reasoning

Relate area to the operations of multiplication and addition.

- a. Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.
- b. Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.
- c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.
- d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.

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Resources:

[Connecting Area to Multiplication](#)

Resource Type: Tutorial

In this tutorial video from Khan Academy, students who understand how to count unit squares to find the area of a rectangle can explore the connection between this method and the area formula for rectangles (length times width or base times height).

[All About Area](#)

Resource Type: Lesson Plan

This lesson is an introductory lesson about area at the third grade level. It addresses only part a and b of this standard. During this lesson students will be given a choice of different units (one smaller, one larger) in order to determine the area of a given rectangle. Efficiency is a goal of this lesson, as well as students understanding the concept of why we multiply the length times the width in order to determine the area.

[Cover Me](#)

Resource Type: MFAS Formative Assessment

Students determine the area of a rectangle in two different ways.

MAFS.3.MD.4 Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.

MAFS.3.MD.4.8

DOK Level 2: Basic Application of Skills & Concepts

Solve real world and mathematical problems involving perimeters of polygons, including

finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.

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Resources:

[Introduction to Perimeter](#)

Resource Type: Tutorial

This Khan Academy video tutorial presents finding perimeter by adding side-lengths of various polygons.

[Finding Perimeter](#)

Resource Type: Lesson Plan

In this lesson, students will explore a real world problem based on the Marilyn Burns book Spaghetti and Meatballs for All! The problem and further practice finding the distance around rectangles will lead them to discover efficient strategies and formulas for solving perimeter.

[Rectangles with the Same Perimeter](#)

Resource Type: MFAS Formative Assessment

Students are asked to find the whole number dimensions of every rectangle with a given perimeter and then find the area of each rectangle.

[What is the Missing Length?](#)

Resource Type: MFAS Formative Assessment

Students are asked to find the length of a missing side on two polygons given the perimeter of each and the lengths of the other sides.

Geometry

[MAFS.3.G.1 Reason with shapes and their attributes.](#)

[MAFS.3.G.1.1](#)

DOK Level 2: Basic Application of Skills & Concepts

Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.

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Resources:

[Shape Up or Ship Out!](#)

Resource Type: Lesson Plan

In this lesson, students will sort two dimensional shapes according to their likenesses or

differences. Students will enjoy doing the "drawing lines" activity. The students will learn how to classify these shapes according to shared attributes.

[Introduction to Types of Quadrilaterals](#)

Resource Type: Tutorial

In this tutorial video from Khan Academy, discover attributes and features of four-sided shapes, including parallelograms, rhombuses, rectangles, and squares

[Identifying Polygons](#)

Resource Type: MFAS Formative Assessment

Students are asked to describe attributes shared by three shapes and to identify a larger category into which these shapes can be placed.

[Identifying Quadrilaterals](#)

Resource Type: MFAS Formative Assessment

Students are asked to describe attributes shared by three shapes and to identify a larger category into which these shapes can be placed.

3rd Grade Mathematics Resources

Course Descriptions, Standards, Teacher, Student and Parent Resources

- [3rd Grade Mathematics Course Description](#)
- [Standards Coding Scheme](#)
- [3rd Grade Mathematics Parent Guide](#)
- [3rd Grade Mathematics Student Resources](#)

Assessment Assistance

- [FSA Portal](#)
- [Test Item Specifications](#)
- [Test Design Summary and Blueprint](#)
- [Achievement Levels and Descriptions](#)
- [Understanding FSA Reports](#)
- [FSA Fact Sheet for English Language Arts and Mathematics](#)

Instructional Resources

- [Elementary Mathematics Resources](#)
- [Elementary Standards Progressions](#)
- [Literacy for Learning in the Content Areas](#)
- [English Language Learners Assistance](#)
- [Khan Academy 3rd Grade Math Mission](#)