Third Grade

Supplemental Mathematics Tasks

This resource is a repository of mathematics tasks aligned to grade level standards compiled by Shannon Olson. Shannon did not write the tasks, but curated them from a variety of open educational resources.

"Effective teaching of mathematics engages students in solving and discussing tasks that promote mathematical reasoning and problem solving and allow multiple entry points and varied solution strategies" (National Council of Teachers of Mathematics, 2014). For more information on facilitating tasks, see Notes on Task Facilitation in the appendix of this document.

It is not recommended to use these resources as a primary curriculum, but rather to use them as supplemental tasks to enhance a coherent set of materials. For more information see Notes on Curriculum in the appendix of this document.

Table of Contents

Appendix

Operations and Algebraic Thinking

Represent and solve problems involving multiplication and division. (3.OA.1-4)

Standards	Task	Task Description
3.OA.1	Baking Cookies	Open Middle Task: Students are given a total amount of cookies baked and are asked to find how many rows and how many in each row.
3.OA.1, 3.MD.5-7	How Many Rows? How Many in Each Row?	Players roll a die two times. The first roll determines the number of rows and the second roll determines the number of squares in each row. Players draw a rectangle that corresponds to the rolls in any location on the grid on the recording sheet, then write the number sentence (for example, 3×4 = 12) in the rectangle.
3.OA.1, 4.OA.4	Penny Collection	This activity allows students to explore how numbers are composed, by having them look at different ways of grouping them. There are many different strategies and methods students can use to come up with a solution. Students can use actual pennies, draw diagrams, and use charts to keep track of their findings.
3.OA.1	Relate Addition and Multiplication	Students select numeral cards (1-10) to draw a number of circles and a number of triangles within a circle. They write related addition and multiplication equations to represent the model.
3.OA.1	Equal Groups	Students roll two dice to determine a number of each groups and a number in each group. They model the groups with counters and find the total number of counters.

3.OA.2	Fish Tanks	This task provides an opportunity for students to demonstrate that they can interpret within a given context the meaning of whole number quotients. Suppose there are 4 tanks and 3 fish in each tank. The total number of fish in this situation can be expressed as 4×3=12. Describe what is meant in this situation by 12÷3=4 Describe what is meant in this situation by 12÷4=3
3.OA.2	Markers in Boxes	Students compare two problems that draw on the same context but represent the two different interpretations of division, namely, the "How many groups?" interpretation and the "How many in each group?" interpretation. Before solving them, the students should analyze and understand the problem structures.
3.OA.2	Identify the Unknown	Students sort division word problems by whether the problem is asking for the number of equal groups or how many are in each group.
3.OA.2 3.OA.3	Two Interpretations of Division	Maria divides ribbon in two different ways. Both of the questions are solved by the division problem 12÷3 but what happens to the ribbon is different in each case.
3.OA.3	Peach Picker	3 Act Task in which students estimate and solve for how many peaches are picked in a basket.
3.OA.3	Planting Carrots 1	Open Middle Task: Students choose a total amount of carrots planted and are asked to tell how many rows and how many in each row.

3.OA.3	Analyzing Word Problems Involving Multiplication	Students analyze different contexts in which multiplication is appropriate. In this task, the students are asked to analyze the problems and explain their thinking before they find an answer. In the process, they are thinking more carefully about different contexts that can be represented by multiplication.
3.OA.3	Gifts from Grandma	The first of these is a multiplication problem involving equal-sized groups. The next two reflect the two related division problems, namely, "How many groups?" and "How many in each group?"
3.OA.3	Graham Cracker	3 Act Task in which students estimate and solve how many graham crackers are in a box.
3.OA.3	Sam Houston	3 Act Task in which students estimate and solve for how many humans it takes to be the size of a statue.
3.OA.3	Word Problems: Arrays	Students solve word problems by drawing arrays and writing equations. It would be great to use these problems with small groups or the whole class in which students use objects, drawings, or equations to solve on their own and then with a partner.
3.OA.3	One Hundred Hungry Ants Literature Link Order the Book	Students read the story *One Hundred Hungry Ants* and then arrange a given amount of ants in arrays.
3.OA.3	Six Dinner Sid Literature Link	Students read the story Six Dinner Sid and then solve for how many dinners Sid would eat in a week if he ate six dinners each day.

	Order the Book	
3.OA.3	Amanda Bean's Amazing Dream Literature Link Order the Book	Students read the story *Amanda Bean's Amazing Dream* and then and then solve for which situation has more.
3.OA.3	The Doorbell Rang Literature Link Order the Book	Students read the story *The Doorbell Rang* and then solve for how to share cookies equally with friends.
3.OA.3 3.MD.5-7	Fruit & Nuts	3 Act Task in which students estimate and solve for how many small squares of chocolate are in a whole Fruit & Nut bar.
3.OA.4	Finding the unknown in a division equation	This task shows an equation that elicits key misconceptions around equations and division.
3.OA.4	Missing Numbers: Division	Students play a game in which they place number tiles (1-10) into missing parts of division equations.

Understand properties of multiplication and the relationship between multiplication and division. (3.OA.5-6)

Standards	Task	Task Description
3.OA.5	Turn Your Array	Students create arrays with square tiles and then turn the arrays to write equations using the commutative property of multiplication.
3.OA.5	Each Orange Had 8 Slices Literature Link Order the Book	Students read the story *Each Orange Had 8 Slices* and then create a multiplication story with three factors for a class book.
3.OA.5	Valid Equalities? (Part 2)	On the surface,this task can be completed with sound procedural fluency in multiplication. However, this task presents the opportunity to delve much more deeply into equivalence and strategic use of mathematical properties.
3.OA.5 3.MD.7.c	Introducing the Distributive Property	This task is best used when students are first working with the distributive property. Students apply the distributive property to area models, though this task intentionally begins with array models.
3.OA.6	Division as an Unknown Factor	Students play a game in which they match multiplication equations with unknown factors to division equations with unknown quotients.

Multiply and divide within 100. (3.OA.7)

Standards	Task	Task Description
3.OA.7	Multiply and Divide within a Hundred 1	Open Middle Task: Using the digits 2 to 9 at most one time each, place a digit in each box to make two correct equations.
3.OA.7	Multiply and Divide within a Hundred 2	Open Middle Task: Using the digits 2 to 9 at most one time each, place a digit in each box to make two correct equations.
3.OA.7	Fill the Grid How Close to 100?	Students roll two dice and draw an array on a hundreds grid with the rolled numbers representing the rows and columns. They record the multiplication fact and repeat the process to fill as much of the grid as possible.
3.OA.7	Circles and Stars	Students roll dice to determine how many circles to draw and how many stars to draw in each circle. This may be modified for the circles to represent pizzas and to draw pepperonis instead of stars.
3.OA.7	Multiply It	Students select numeral cards (1-10) to represent a factor and spin a spinner to represent the other factor. They multiply the two numbers and check their work with partners.
3.OA.7	Math Cards	Students match cards for multiplication including expressions, products, arrays, area models, and other equal groups representations.
3.OA.7	Division Bump (divisors 2 - 5)	Students play a game in which they turn over division expressions and place a snap cube on the numeral card (1-10) that represents the quotient for the problem.

3.OA.7	Division Squares (divisors 3 & 6)	Students play a game in which they roll dice to solve division expressions and draw lines around numbers on a gameboard that represent the quotient for the problem.
3.OA.7	Multiplication and Division Fluency Set of Tasks	Offers one of the many opportunities for students to practice their facts to ensure fluency. Represents multiplication and division with a variety of symbols. Allows for both individual and paired work. Builds fluency in an engaging way.

Solve problems involving the four operations, and identify and explain patterns in arithmetic. (3.OA.8-9)

Standards	Task	Task Description
3.OA.8	The Class Trip	Students solve a two-step word problem and represent the unknown quantity with a variable.
3.OA.8	The Stamp Collection	Masha had 120 stamps. First, she gave her sister half of the stamps and then she used three to mail letters. How many stamps does Masha have left?
3.OA.8	Do you have enough money?	Students determine if they have enough money to buy a game.
3.OA.8	Word Problems: Two Step	Students solve two step word problems writing equations with a symbol for the unknown number. It would be great to use these problems with small groups or the whole class in which students use objects, drawings, or equations to solve on their own and then with a partner.
3.OA.8 3.OA.1 3.OA.3 3.OA.5	How Many Soda Combos Are There on a Coke Freestyle?	Students apply counting and adding strategies to determine soda combinations.
3.OA.9	Addition Patterns (1-5)	The purpose of this task is to study some patterns in a small addition table. Each pattern identified persists for a larger table and if more time is available for this activity students should be encouraged to explore these patterns in larger tables. This task is intended for instructional purposes. The goal is to study the structure of the table and relate this to properties of addition.

3.OA.9	Patterns in the Addition Table (1-9)	Students explore the addition table and explain noticings.
3.OA.9	Symmetry of the addition table	The goal of this task is to help students understand the commutative property of addition by examining the addition facts for single digit numbers.
3.OA.9	Patterns in the multiplication table	The goal of the task is to look for structure and identify patterns in the multiplication table and then try to find the mathematical explanation for this.
3.OA.9	Roll a Rule	Students roll a number cube to find out what the rule will be. They then add that number to even or odd numbers repeatedly and analyze the patterns.
3.OA.9	Odd and Even Sums	Students add combinations of even and odd numbers and investigate whether the sum is even or odd.
3.OA.9	Odd and Even Products	Students multiply combinations of even and odd numbers and investigate whether the product is even or odd.

Number and Operations in Base Ten

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

Standards	Task	Task Description
3.NBT.1	Rounding to the Nearest Ten and Hundred	Students practice rounding numbers to the nearest ten, connect the rules for rounding with location on the number line, and to introduce the idea of rounding to the nearest 100.
3.NBT.1	Round to the Nearest Hundred	Students take three numeral cards (0-9) to make a 3-digit number. They round to the nearest hundred. The player with the largest number wins the cards.
3.NBT.1 3.NBT.2	Estimating Sums	Students select four numeral cards (0-9), make two 2-digit numbers, and estimate the sum by rounding each number to the nearest ten and adding mentally.
3.NBT.1 3.NBT.2	Estimating Differences	Students select four numeral cards (0-9), make two 2-digit numbers, and estimate the difference by rounding each number to the nearest ten and subtracting mentally.
3.NBT.1	Rounding to 50 or 500	This task has students explore the smallest and largest numbers that round to 50 and 500.
3.NBT.1	Rounding 1	Open MIddle Task: Using the digits 0 to 9 at most one time each, place a digit in each box to make two different three-digit numbers that round (to the nearest hundred) to 500.

3.NBT.1	Rounding 2	Open MIddle Task: Using the digits 0 to 9 at most one time each, place a digit in each box to make the greatest possible three-digit number that still rounds (to the nearest hundred) to 500.
3.NBT.1	Greatest Difference of Two Rounded Numbers	Open Middle Task: Using the digits 0 through 9, find two numbers that round to 500, and have the greatest possible difference. Each digit can only be used once.
3.NBT.1 4.NBT.3	Rounding to the Nearest 100 and 1000	This task naturally builds off of 3.NBT Rounding to the Nearest Ten and Hundred in third grade. Since fourth graders are expected to "use place value understanding to round multi-digit whole numbers to any place" (4.NBT.3), this task also naturally builds towards 4.NBT Rounding to the Nearest 1000.
3.NBT.2	Word Problems: Addition and Subtraction within 1,000	Students solve addition and subtraction word problems writing equations with a symbol for the unknown number. It would be great to use these problems with small groups or the whole class in which students use objects, drawings, or equations to solve on their own and then with a partner.
3.NBT.2	Adding 3-Digit Numbers	Using the digits 1 to 9 exactly one time each, place a digit in each box two times: once to make a sum that is greater than 700 and once to make a sum that is less than 700. You may reuse all the digits for each sum.
3.NBT.2	Subtracting 3-Digit Numbers 1 Subtracting 3-Digit Numbers 2	Using the digits 1 to 9 at most one time each, place a digit in each box to make two different pairs of three-digit numbers that form a true number sentence. You may reuse all the digits each difference.

3.NBT.2 3.MD.3	Classroom Supplies	In this task students are asked to decide how to spend $1,000 on supplies and materials for their classroom; students will have to make choices and be careful not to exceed the budget. Students are asked to decide which supplies will benefit the class the most and will compare their choices with other students' choices.
3.NBT.2	Get to Zero	This game provides students practice subtracting from 999. Students should be encouraged to check each players work and provide feedback for mistakes. Remember, mistakes are awesome and they make our brain grow!
3.NBT.2	Close to Zero	Students take six numeral cards (0-9) and create a subtraction problem with two 3-digit numbers arranging the cards to make a difference as close to zero as possible.
3.NBT.2	Sum to 1,000 - Two Addends	Open Middle Task: Arrange the digits 1-6 into two 3-digit whole numbers. Make the sum as close to 1000 as possible.
3.NBT.2	Close to 1000	Open Middle Task: Using the digits 1 to 9 exactly one time each, place a digit in each box to make the sum as close to 1000 as possible.
3.NBT.2	Marble Madness 1	Open MIddle Task: Students determine a number of marbles to start with, give away, and have left.
3.NBT.2	Marble Madness 2	Open MIddle Task: Students determine a number of marbles two siblings have individually and altogether.

3.NBT.2	Calculator Countdown	1. How many times was the same number subtracted from 104 to get to 5? 2. Write down a guess. 3. What information would be useful to figure this out? 4. Write down some questions you have in your head right now. 5. What other numbers could be used to subtract down from 104 to 5?
3.NBT.2	How Can You Win Every Prize At Chuck E. Cheese's?	Chuck E. Cheese's (and many other arcades) have a game called Skee Ball where you roll a ball up a ramp and into a hole to earn points. You earn more points when the ball goes into smaller holes. The more points you earn, the more tickets you get to buy prizes with. As a bonus, if you earn at least 450 points, you win their grand prize which gives you as many as thousands of tickets. How can you get 450 points playing Skee Ball and win the grand prize?
3.NBT.2	Downsizing Tomatoes	3 Act Task in which students estimate and solve for how much ketchup from a larger bottle will fit into smaller bottles. They add and subtract within 1,000.
3.NBT.2	Crackers	Students pick a number between 1 and 63 and play a game with 6 "cracker" cards for the partner to tell them their number. Basic addition skills are used.
3.NBT.2	365 Penguins Literature Link	Students read the story *365 Penguins* and solve for how many penguins there would be on the last day of each month.

	Order the Book	
3.NBT.3	How Many Colored Pencils?	The purpose of this task is to support students' reasoning based on place value to multiply a single digit number by a multiple of 10.
3.NBT.3 3.MD.1	All Aboard	3 Act Task in which students estimate and solve for the amount of time for a train to pass. They solve elapsed time using multiplication with multiples of ten.
3.NBT.3	Multiplying Multiples of Ten 1	Open MIddle Task: Using the digits 0 to 9 at most one time each, place a digit in each box to make two different true number sentences.
3.NBT.3	Multiplying Multiples of Ten 2	Open MIddle Task: Using the digits 0 to 9 at most one time each, place a digit in each box to make a product that's as close to 500 as possible.
3.NBT.3	Multiply One-Digit Numbers by Multiples of Ten	Students solve word problems with single-digit factors multiplied by a multiple of ten. They use base ten blocks to represent the problems These problems could be used as whole group tasks when introducing the concept and as partner work to practice learned strategies.

Number and Operations—Fractions

Develop understanding of fractions as numbers. (3.NF.1-3)

Standards	Task	Task Description
3.NF.1	Making Fraction Strips	Students make their own set of fraction strips and analyze what they notice about the numerators and denominators of the unit fractions.
3.NF.1	My Fraction Bar Riddle	Students make fractions bars with different color tiles and describe the parts of the bar.
3.NF.1	Gator Pie Literature Link Order the Book	Students read *Gator Pie* and cut a pie into equal portions labeling each part.
3.NF.1	Naming the Whole for a Fraction	When fractions are represented pictorially, they are always fractions of some whole. The goal of this task is to show that when the whole is not specified, which fraction is being represented is left ambiguous.
3.NF.2	Locating Fractions Less than One on the Number Line	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 fractions.
3.NF.2	Locating Fractions Greater than One on the Number Line	This first part of this task requires students to represent a fraction on a number line diagram by marking off intervals of length. The second part asks them to label a specific point on the number that is a fraction greater than one.

3.NF.2	Closest to 1/2	Students are given a number line with 0, ½, and 1 labeled.. They decide if ⅛, ⅜, ⅞, or 9/8 is closest to ½.
3.NF.2	Find 1	The purpose of this task is to assess whether students understand fractions as being built from unit fractions and whether they can accurately locate fractions on the number line.
3.NF.2	Find 2/3	Students are provided with a number line representing 0 and ¼ and are asked to label the point where 2/3 belongs on the number line, being as exact as possible.
3.NF.2	Identify a Fraction on a Number Line	Open MIddle Task: GIven a number line with 0 and ⅓ labeled, students label the point of ¾.
3.NF.2	Fractions on a Number Line	Open MIddle Task: Students use digits to create fractions and place them on a number line with the correct order and spacing.
3.NF.2 4.NF.2	Which is Closer to 1?	Which is closer to 1 on the number line, 4/5 or 5/4? Explain.
3.NF.2	How Many Numbers Are There?	Open MIddle Task: Students are asked, "How many numbers are between 1 and 3?" They can explore various numbers including fractions between 1 and 3.
3.NF.2	Roll a Fraction	Students roll two number cubes to determine the numerator and denominator of fractions they place on number lines.
3.NF.2	How Far Apart are the Freeway Exits?	Students see freeway signs and create number lines to determine the distance between the exits.

3.NF.3	Comparing Fractions	The purpose of this task is for students to compare fractions using common numerators and common denominators and to recognize equivalent fractions.
3.NF.3	Snow Day	The purpose of this task is for students to investigate a claim about a comparison of two fractions in a context. Many fraction problems are set in food contexts or a situation where a physical thing is being shared. It is important for students to work on more abstract quantities like time as well.
3.NF.3.a	Jon and Charlie's Run	The purpose of this task is to present students with a context where they need to explain why two simple fractions are equivalent. Students can illustrate the fact that the two fractions are equivalent by showing they belong at the same point on the number line or are represented by the same area in an appropriate diagram.
3.NF.3.a	Pizza for Dinner	Students determine if students ate the same or different amounts of pizza (2/4 and 4/8).
3.NF.3.b	Equivalent Fractions on a Geoboard	Students make equivalent fractions on a geoboard.
3.NF.3.c	Make One Whole	Students use fraction kits to determine all the ways to make one whole.
3.NF.3.d	Compare Fractions of a Whole	Students select cards with models of fractions and write symbols to compare them.

3.NF.3.d	Comparing Fractions Game	This activity is designed for pairs of students. They will require a set of cards (which are supplied as an attached resource). The goal is to compare the two fractions appearing on each card, determine if they are equivalent and, if not, which is larger.
3.NF.3.d	Comparing Fractions with a Different Whole	This task is meant to address a common error that students make, namely, that they represent fractions with different wholes when they need to compare them.
3.NF.1-3	How Much is One Third of a Cup of Butter?	Butter is labeled as ¼ cups. Students determine how to find ⅓ cup of butter.
3.NF.1-3 4.NF.1-2	What Fraction Of Children Are In The Right Car Seat?	Students examine images showing the fraction of children in the right car seat.
3.NF.1 3.NF.3.b 3.MD.6 3.G.2	Halves, thirds, and sixths	The purpose of this task is for students to use their understanding of area as the number of square units that covers a region (3.MD.6), to recognize different ways of representing fractions with area (3.G.2), and to understand why fractions are equivalent in special cases (3.NF.3.b).

Measurement and Data

Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects. (3.MD.1-2)

Standards	Task	Task Description
3.MD.1 2.MD.7	Time Barrier Game	Students create times to the nearest five minutes on a grid with blank analog and digital clocks. They describe the times to a partner who tries to draw the same times on their grid. *Can be adapted to the nearest one minute.
3.MD.1	Dajuana's Homework	The purpose of this task is for students to work on elapsed-time questions. This task includes three different elapsed time situations: end-time unknown, elapsed time unknown, and start-time unknown.
3.MD.1	Operations with Time	Open Middle Task: Use the digits 1 to 9, at most one time each, to fill in the boxes to make a time that is 4:37 pm.
3.MD.1	Operations with Time 2	Open Middle Task: Using the digits 1 to 9, at most one time each, place a digit in each box to make the latest possible time.
3.MD.1	It's About Time 1	Open Middle Task: Students use the digits 1-9 to tell when Suzie leaves work, gets home, and the time of her commute.
3.MD.1	Building Shelves 1	Open Middle Tas: Students use the digits 0-9 to tell how many minutes and hours it takes to build an amount of shelves.

3.MD.1 3.NBT.3	All Aboard	3 Act Task in which students estimate and solve for the amount of time for a train to pass. They solve elapsed time using multiplication with multiples of ten.
3.MD.1	Word Problems: Time Intervals	Students solve word problems with time intervals. These problems could be used as whole group tasks when introducing the concept and as partner work to practice learned strategies.
3.MD.2	How Heavy?	The purpose of this task is for students to measure the mass of objects with a balance scale.
3.MD.2	Estimating Weight	Students estimate and find the weight of classroom objects in grams.
3.MD.2	The Orange	3 Act Task in which students estimate and see the weight of an orange.
3.MD.2	The Water Boy	3 Act Task in which students estimate and solve for how much water is drunk.
3.MD.2	More or Less than a Liter?	Students estimate and find if container capacity is less than, about, or more than a liter.

Represent and interpret data. (3.MD.3-4)

Standards	Task	Task Description
3.MD.3	Gummy Bear Graph	Students make bar graphs showing how many gummy bears each person in their group has. *Can be adapted to show how many gummy bears of each color. Counting bears or colored tiles may also be used. *It would be appropriate to use the entire class's data so students can create scaled graphs.
3.MD.3	Paper Ball Throw	Students make a graph to show many times they threw a paper ball into a bucket with their left and right hands. *It would be appropriate to use the entire class's data so students can create scaled graphs.
3.MD.3	Interpreting Graphs	Open Middle Task: Students use digits 1-6 to create a graph and fill in blanks to make them true.
3.MD.3 2.MD.10	Favorite Ice Cream Flavor	The teacher writes a question that has three choices as an answer on a sentence strip. For example,"Which flavor of ice cream do you like best?" The class then writes and answers interpretation questions about the class's responses. *Adapt to have students create scaled graphs.
3.MD.3 2.MD.10	Collecting and Representing Data	Students use survey cards to collect data using tally marks, display the data on a graph, and write facts to describe the data. *Adapt to have students create scaled graphs.
3.MD.4	Squid Eyes	Students draw the length of a squid eye (15 ¾ inches)and then measure various parts of their body to the nearest quarter inch.
3.MD.4 2.MD.1,3-4	Determining Length	This task was designed to support students to estimate, measure, and compare lengths using standard units. To be successful with this task, students must have experience measuring

		lengths and be familiar with the units. Within the task students have the opportunity to measure and compare lengths of their own foot and that of a partner. *Adapt to measure to the nearest half or quarter inch.
3.MD.4 2.MD.1	Which Rides Can You Go On?	Students measure their heights and determine which rides they can go on at an amusement park? *Adapt to measure to the nearest half or quarter inch.
3.MD.4 2.MD.1	Measuring Paths	Students predict the length of various paths drawn on pictures and then measure the actual length using string and rulers. *Adapt to measure to the nearest half or quarter inch.
3.MD.4	Measuring Strips Line Plot	Students measure strips of paper to the nearest quarter inch and create a line plot to represent the data.
3.MD.4 2.MD.9	Growing Bean Plants	Students grow real bean plants and collect data on their growth. *Adapt to measure to the nearest half or quarter inch.
3.MD.4 2.MD.9	Hand Span Measures	Students measure their hand spans and graph the class's data on a line plot. *Adapt to measure to the nearest half or quarter inch.
3.MD.4 2.MD.9	Pencil Plot	Students collect ten pencils, measure them to the nearest centimeter,and record the data on a line plot. *Adapt to measure to the nearest half or quarter inch.

Geometric measurement: understand concepts of area and relate area to multiplication and to addition. (3.MD.5-7)

Standards	Task	Task Description
3.MD.5.a	Square Units 1" One-Inch Graph Paper	Students make a square inch and a square foot. They see how many classroom objects can fit in the square units. (12 inch square scrapbook paper could be used)
3.MD.5.b	Find the Area	Students estimate and find the area of different rectangles using square tiles.
3.MD.6	Grid Paper Animals Centimeter Graph Paper	Students make animals using only straight lines on centimeter grid paper. They count the squares to find the area of the animal.
3.MD.6	Cover Your Notebook	Students estimate and use centimeter squares to find the area of their notebook.
3.MD.6 3.G.2 3.NF.1 3.NF.3.b	Halves, thirds, and sixths	The purpose of this task is for students to use their understanding of area as the number of square units that covers a region (3.MD.6), to recognize different ways of representing fractions with area (3.G.2), and to understand why fractions are equivalent in special cases (3.NF.3.b).
3.MD.7	India's Bathroom Tiles	This task allows students to use the concept of "tiling" as an entry point to linking area with multiplication. Ideally, they would be given foam or plastic tiles to actually practice putting the tiles on the space without gaps or overlaps.

3.MD.7.a	Find the Area of a Rectangle 1" One-Inch Graph Paper	Students draw rectangles on one-inch grid paper, find the area by using square tiles, and analyze the area based on the side lengths.
3.MD.7.c	Jack's Rectangles	Students use the distributive property to find the area of various rectangles with grids.
3.MD.7.c 3.OA.5	Introducing the Distributive Property	This task is best used when students are first working with the distributive property. Students apply the distributive property to area models, though this task intentionally begins with array models.
3.MD.7.d	Find Areas of Rectilinear Figures	Students decompose rectilinear figures to find the area.
3.MD.7.d	Three Hidden Rectangles	The purpose of this task is for students to decompose a figure into rectangles and then find the total area by adding the area of all of its smaller, non-overlapping rectangles.
3.MD.5-7 3.OA.1	How Many Rows? How Many in Each Row?	Players roll a die two times. The first roll determines the number of rows and the second roll determines the number of squares in each row. Players draw a rectangle that corresponds to the rolls in any location on the grid on the recording sheet, then write the number sentence (for example, 3×4 = 12) in the rectangle.

3.MD.5-7	The Square Counting Shortcut	This is a rectangle subdivision task; ideally instead of counting each square. 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. Often students will get tired of counting and devise the shortcut method themselves.
3.MD.5-7	Cover the Floor	3 Act Task in which students estimate and solve for the number of squares that cover a rectangle on the floor.
3.MD.5-7	Cookies	3 Act Math Task in which students determine the number of cookies that can fit on a cookie sheet.
3.MD.6-7	Finding the Area of Polygons	The purpose of this instructional task is for students to find the area of figures that can be decomposed and then recomposed into rectangles.
3.MD.5-7	Piles of Tiles	3 Act Task in which students estimate and see how many square tiles cover a table.
3.MD.5-7	Do We Have Enough Paint?	Students determine if they have enough paint to cover a wall.

Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures. (3.MD.8)

Standards	Task	Task Description
3.MD.8	Shapes and their Insides	The purpose of this task is to help students differentiate between a polygon and the region inside of a polygon so that they understand what is being measured when the perimeter and area are being found.
3.MD.8	Rectangular Robot Centimeter Graph Paper	Students use centimeter grid paper to draw a robot with body parts having specific perimeters.
3.MD.8	Squares on a Geoboard Geoboard pattern Virtual Geoboard	Students create squares with different dimensions on a geoboard and compare their areas and perimeters.
3.MD.8	36 Fences	In this task students explore changing areas and patterns of numbers. It is a low floor high ceiling task that can be used with many grade levels. The question posed is : what is the biggest fence that can be made out of 36 pieces of fence?
3.MD.8	Perimeter	Open MIddle Task: Draw three rectangles with a perimeter of 20 units.
3.MD.5-8	Rectangles: Maximizing Area	Open Middle Task: What is the greatest area you can make with a rectangle that has a perimeter of 24 units?

3.MD.5-8	Rectangles: Maximizing Perimeter	Open Middle Task: What is the greatest perimeter you can make with a rectangle that has an area of 24 square units?
3.MD.5-8	Squares: Perimeter v. Area	Open MIddle Task: How can you tell which square is bigger a square with a perimeter of 25 units or a square with an area of 25 square units?
3.MD.5-8	Rectangles: Perimeter v. Area	Open MIddle Task: How can you tell which rectangle is biggerL a square with a perimeter of 24 units or a rectangle with an area of 24 square units?

Geometry

Reason with shapes and their attributes. (3.G.1-2)

Standards	Task	Task Description
3.G.1	Geoboard Quadrilaterals Geoboard pattern Virtual Geoboard	Students create several quadrilaterals on a geoboard and describe how they are alike and different.
3.G.1	Shape Match	Students match images of shapes to descriptions of shapes.
3.G.2	Geometric pictures of one half	This task presents students with some creative geometric ways to represent the fraction one half. The goal is both to appeal to students' visual intuition while also providing a hands-on activity to decide whether or not two areas are equal.
3.G.2	Representing Half of a Circle	This task moves into more complex shapes where geometric arguments about cutting or work using simple equivalences of fractions is required to analyze the picture.
3.G.2	Sliced Up	3 Act Task in which students estimate and see how many whole and sliced oranges there are.
3.G.2	Partition a Square Geoboard pattern Virtual Geoboard	Students make a large square on a geoboard and partition it into eight equal parts.

3.G.2	Partition Shapes Virtual Pattern Blocks	Students partition pattern blocks using other pattern blocks.
3.G.2	Fraction Barrier Game	Students shade in parts of shapes on a grid with blank partitioned shapes. They describe the fraction to a partner who tries to shade the same fractions on their grid.
3.G.2 3.NF.1 3.NF.3.b 3.MD.6	Halves, thirds, and sixths	The purpose of this task is for students to use their understanding of area as the number of square units that covers a region (3.MD.6), to recognize different ways of representing fractions with area (3.G.2), and to understand why fractions are equivalent in special cases (3.NF.3.b).
3.G.2 3.MD.5-8	Youcubed My Heart	Given a tessellation of the youcubed logo, students are asked: What is the area of the shape? What is the perimeter of the shape? How many rhombuses do you see? How many triangles do you see? How would you color my youcubed heart? What questions can you ask?

Mathematical Practices

1) Make sense of problems and persevere in solving them.
2) Reason abstractly and quantitatively.
3) Construct viable arguments and critique the reasoning of others.
4) Model with mathematics.
5) Use appropriate tools strategically.
6) Attend to precision.
7) Look for and make use of structure.
8) Look for and express regularity in repeated reasoning.

Standards	Task	Task Description
MP.2 3.OA.8	The Class Trip	This task helps illustrate Mathematical Practice Standard 2, Reason abstractly and quantitatively. Students make sense of quantities and how they are related in a problem situation .
MP.3 3.NF.3	Snow Day	This task helps to illustrate Mathematical Practice Standard 3, Construct viable arguments and critique the reasoning of others. Students are asked to critique the reasoning of Alec's claim that his school day was shorter than his brother's. This type of task provides students with an opportunity to distinguish a reasonable explanation from that which is flawed.

MP.4 3.OA.3	Gifts from Grandma	This task helps illustrate Mathematical Practice Standard 4, Model with mathematics. Third graders apply the mathematics they know to solve problems arising in everyday life. They identify the mathematical elements of each situation and determine the solution pathway that is best for them to follow.
MP.6 3.NF.1	Naming the Whole for a Fraction	This task supports the demonstration of Mathematical Practice Standard 6, Attend to precision. Students are faced with elements of ambiguity in deciding what encompasses the whole. The whole in turn impacts the representation of a specific fraction. Students learn to appreciate, understand, and use mathematical vocabulary more precisely in interpreting and describing the whole and its fractional parts.

Appendix: Notes on Task Facilitation

What is a Math Task and How Do I Use One?

Math tasks are problems students engage in without the teacher providing direct instruction or telling the student how to solve the problem. High quality math "tasks encourage reasoning and access to … mathematics through multiple entry points, including the use of different representations and tools, and they foster the solving of problems through varied solution strategies." (National Council of Teachers of Mathematics, 2014. p. 17)

CLICK HERE

to read the blogpost

Can't access the web version on your school's browser? Try this version.

Appendix: Notes on Curriculum

"An excellent mathematics program includes a curriculum that **develops important mathematics along coherent learning progressions and develops connections among areas of mathematical study and between mathematics and the real world."**

"A mathematics curriculum is more than a collection of activities; instead it is a **coherent sequencing of core mathematical ideas that are well articulated within and across grades** and courses. Such curricula pose problems that promote **conceptual understanding, problem solving, and reasoning and are drawn from contexts in everyday life and other subjects**."

"Appropriate use of textbooks—whether to teach from them lesson-by-lesson almost exclusively or whether to treat them as one resource among many—**depends on the quality of the textbook**, as defined above. If a textbook develops mathematical topics in a coherent manner, based on learning progressions, and features lessons that consistently support the Mathematics Teaching Practices, then teaching primarily from that textbook makes sense, and significant omissions or deviations can decrease, rather than enhance, the quality of instruction (Banilower et al. 2006). Conversely, if a textbook does not provide such support, then the only option is to treat it as one of many resources and supplement it as needed.

Structuring units—and lessons within the units—around **broad mathematical themes** or approaches, rather than lists of specific skills, creates coherence that provides students with the foundational knowledge for more robust and meaningful learning of mathematics. In particular, attention to the mathematical practices provides students with important mathematical tools that they need to navigate mathematical situations and contexts. In planning lessons, teachers should also **consider the intended standards and the developmental needs of the students**. Consequently, careful consideration should be given to appropriate ways to sequence a series of lessons. Daily lesson plans should take into account the broader perspective of what students learned in the past and where they are headed in the future, as well as the contexts that can be used to motivate students and help them understand why particular topics are important." (National Council of Teachers of Mathematics, 2014. p. 70-75)

Go to https://www.edreports.org/reports/math to see how well curriculums align to the standards and recommended practices.

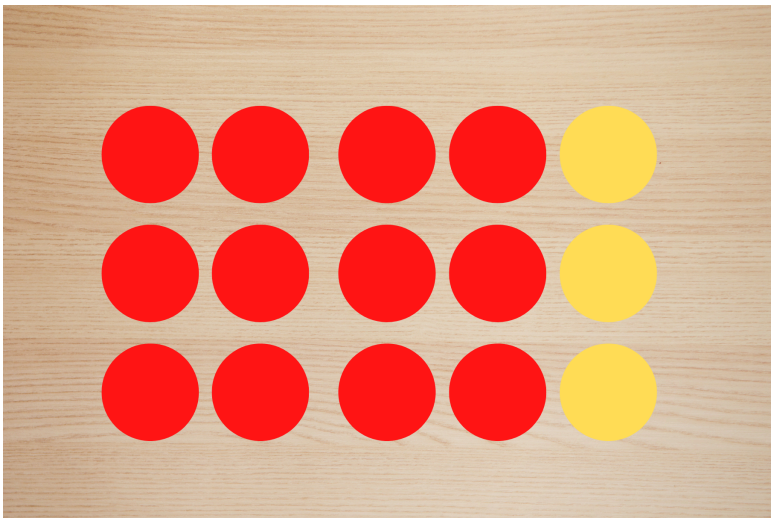
References:

EdReports.org, Inc. (2022). *Explore Reports*. https://www.edreports.org/reports/math

National Council of Teachers of Mathematics. (2014). *Principles to actions: ensuring mathematical success for all.* National Council of Teachers of Mathematics.

Appendix: Recommended Tools and Manipulatives

Third Grade



CLICK HERE

to access a list of physical manipulatives, virtual manipulatives, and blackline masters for third grade

Appendix: Task References

Ehlert, D. (Accessed 2022). *3 Act Math.* When Math Happens. https://whenmathhappens.com/3-act-math/

Fletcher, G. (Accessed 2022). *3 Act Task File Cabinet*. GFletchy. https://gfletchy.com/3-act-lessons/

Illustrative Mathematics. (2016). *Content Standards*. Illustrative Mathematics. https://tasks.illustrativemathematics.org/content-standards

K5 Math. (2022). K-5 Math Teaching Resources LLC. https://www.k-5mathteachingresources.com/

Kaplinsky, R. (2022). *Lessons.* Glenrock Consulting, LLC. https://robertkaplinsky.com/lessons/

Mathematics Leadership Programs. (2022). *3-Act Math Tasks.* Math Leadership Programs. http://mathleadership.org/projects/3-act-math-tasks/

Open Middle Partnership. (2016-2022). Open Middle. https://www.openmiddle.com/

Stanford Graduate School of Education. (Accessed 2022). *Tasks*. youcubed. https://www.youcubed.org/tasks/

Student Achievement Partners. (2014). *Mathematics Tasks*. Achieve the Core. https://achievethecore.org/category/416/mathematics-tasks