

Wilson County Schools



5th Grade Community Resource Framework

Mathematics

2023-2024



Fifth Grade Mathematics Year at a Glance



	First Quarter		Mastery Connect Assessment 1 NC.5.OA.2 NC.5.OA.3 NC.5.NBT.5 NC.5.NBT.6 NC.5.MD.2 NC.5.MD.4 NC.5.MD.5 NC.5.G.1	Second Quarter		Mastery Connect Assessment 2 NC.5.NBT.1 NC.5.NBT.3 NC.5.NF.3 NC.5.NF.4 NC.5.NF.7 <i>Review</i> NC.5.OA.2 NC.5.OA.3 NC.5.NBT.5 NC.5.NBT.6 NC.5.MD.2 NC.5.MD.4 NC.5.MD.5 NC.5.G.1	3rd Quarter		4th Quarter	Mastery Connect Assessment All Standards
	Cluster 1	Cluster 2		Cluster 3	Cluster 4		Cluster 5	Cluster 6	Cluster 7	
Title:	Creating Classroom Community through Data and Graphing	Using Models to Explore Properties of Multiplication and Division		Using Models to Multiply and Divide Fractions	Understanding Place Value in the Context of Metric Measurement		Using Models to Add and Subtract Decimals and Fractions	Using Models to Multiply and Divide of Whole Numbers, Decimals, and Fractions	Classifying Quadrilaterals	
Time:	2 - 3 Weeks	4 - 5 Weeks		3 - 4 Weeks	3 - 4 Weeks		4 - 5 Weeks	5 - 6 Weeks	1 - 2 Weeks	
Content Standards:	NC.5.OA.3 NC.5.MD.2 NC.5.G.1	NC.5.OA.2 NC.5.NBT.5 NC.5.NBT.6 NC.5.MD.4 NC.5.MD.5		NC.5.OA.2 NC.5.NF.3 NC.5.NF.4 NC.5.NF.7	NC.5.NBT.1 NC.5.NBT.3 NC.5.MD.2		NC.5.OA.2 NC.5.NBT.7 NC.5.NF.1	NC.5.OA.2 NC.5.NBT.5 NC.5.NBT.6 NC.5.NBT.7 NC.5.NF.4 NC.5.NF.7 NC.5.MD.1	NC.5.G.1 NC.5.G.3	
Mathematical Practice Standards:	1, 2, 3, 4, 8	1, 2, 4, 5, 6		1, 2, 3, 4, 5, 6, 7, 8	1, 4, 6, 7, 8		1, 2, 3, 4, 5, 6, 7, 8	1, 2, 3, 4, 5, 6, 7, 8	1, 2, 3, 4, 6	

Questions to Ask When Helping Your Child with Math Homework

Keep in mind that homework in elementary schools is designed as practice. If your child is having problems, please let the classroom teacher know. When helping your child with his/her math homework,you don't have to know all the answers! Instead, we encourage you to ask probing questions so your child can work through the challenges independently.

- What is the problem you're working on?
- What do the directions say?
- What do you already know that can help you solve the problem?
- What have you done so far and where are you stuck?
- Where can we find help in your notes?
- Are there manipulatives, pictures, or models that would help?
- Can you explain what you did in class today?
- Did your teacher show examples that you could use?
- Can you go onto another problem & come back to this one later?
- Can you mark this problem so you can ask the teacher for an explanation tomorrow?

Numbers in Base Tens (NBT)			
Vocabulary Addend: a number that is added to another in an addition problem (Example: in $2 + 3 = 5$, 2 and 3 are addends) Approximate: to find a result that is close to the exact answer Base Ten- a way to express numbers using place value based on 10, where each place has a value 10 times the place to its right Decimal number: a number that uses a decimal point to show tenths, hundredths, and thousandths Decompose: to break apart or break down into smaller parts	Standards Included NC.5.NBT.1 Explain the patterns in the place value system from one million to the thousandths place. - Explain that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left. - Explain patterns in products and quotients when numbers are multiplied by 1,000, 100, 10, 0.1, and 0.01 and/or divided by 10 and 100. NC.5.NBT.3 Read, write, and compare decimals to thousandths. - Write decimals using base-ten numerals,	Parent Activities - Allow your child to explain the prices of items and explain the values of numbers within those prices. - Ask your child questions that deal with multiplying by 10. - Allow your child to watch you write checks and discuss how it is written in word form and standard form. - Have your child create a grocery list and estimate what they feel the cost of each item would be. When shopping have them round to the nearest dollar each item and estimate the cost before checking out. - Use a deck of playing cards and play multiplication war. - Here are samples of games to play using decks of cards.	Online Activities Football decimals Which of the following pictures represents .245?    Place Value of Decimals Engage NY Recognize the place value of digits

Difference: the answer to a subtraction problem (in $8 - 3 = 5$, 5 is the difference)

Distributive Property- multiplying a number by a sum is the same as multiplying the number by each addend of the sum and then adding the products, such as $2 \times (3+4) = (2 \times 3) + (2 \times 4)$

Dividend- the number to be divided in a division problem

Divisible- when a number can be divided by another number with no remainder, such as 12 is divisible by 3

Divisor- the number by which another number is divided

Equation: a number sentence that uses the equal sign to show that two amounts have equivalent value

Estimate: an answer that is close to the exact answer

Expanded form- a way to write numbers that show the value of each digit

Exponent: a quantity representing the power to which a given number or expression is to be raised, usually expressed as a raised symbol beside the number or expression (e.g., 3 in $2^3 = 2 \times 2 \times 2$)

Factor: a number that is multiples by another number to find a product

Hundredth: One part in a hundred equal parts (found two places to the right of the decimal)

number names, and expanded form.

- Compare two decimals to thousandths based on the value of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.

NC.5.NBT.5 Demonstrate fluency with the multiplication of two whole numbers up to a three-digit number by a two-digit number using the standard algorithm.

NC.5.NBT.6 Find quotients with remainders when dividing whole numbers with up to four-digit dividends and two-digit divisors using rectangular arrays, area models, repeated subtraction, partial quotients, and/or the relationship between multiplication and division. Use models to make connections and develop the algorithm.

NC.5.NBT.7 Compute and solve real-world problems with multi-digit whole numbers and decimal numbers.

- Add and subtract decimals to thousandths using models, drawings or strategies based on place value.
- Multiply decimals with a product to thousandths using models, drawings, or strategies based on place value.
- Divide a whole number by a decimal and divide a decimal by a whole number, using repeated subtraction or area models. Decimals should be limited to hundredths.
- Use estimation strategies to assess reasonableness of answers.

- Play different types of [dice and card games](#) with your child.

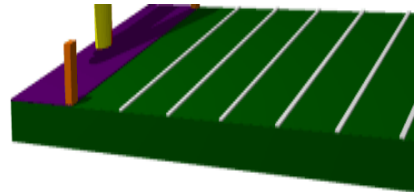
[Math Goodies](#)

[Place Value Pirates](#)

[Decimals in Space](#)

[Soccer Math](#)

[Fling the teacher](#)



[Baseball Exponents](#)

Multiple: the product of a given number and any whole number

Partial Product: in a multiplication problem the result of one factor being multiplied by one of the digits in a multi digit problem

Place value: the location of a digit in a number

Power: the number of times a base number is to be multiplied by itself

Power of Ten: the quantity of 10 multiplied by itself the number of times shown by an exponent

Product: the answer to a multiplication problem

Quotient- the answer to a division problem

Remainder- the number left over after dividing into equal groups

Round: to estimate a number to the nearest ten, hundred, thousand, etc.

Standard form- a number written with one digit for each place value

Sum: the answer to an addition problem (Example: in $2 + 3 = 5$, 5 is the sum)

Tenth: One part in ten equal parts (found to the right of the decimal)

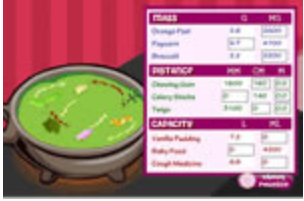
Thousandth: One part in a thousand equal parts (found three places to the right of the decimal)



	Adding Fractions	Subtracting Fractions	Multiplying Fractions
100	100	100	100
200	200	200	200
300	300	300	300
400	400	400	400

Operations and Algebraic Thinking (OA)			
Vocabulary braces: symbol used to group part of a mathematical expression or equation { } brackets: symbols used to group part of a mathematical expression or equation [] coordinate plane: a plane spanned by the x-axis and y-axis in which the coordinates of a point are its distances from two intersecting perpendicular axes corresponding terms: two numbers or elements that occupy the same position in two different patterns evaluate: to find the value of an expression ordered pair: a pair of numbers used to find a point on a coordinate plane parentheses: symbols used to group part of a mathematical expression or equation () term: a number within a sequence x-axis: the horizontal axis on a coordinate plane y-axis: the vertical axis on a coordinate plane	Standards Included NC.5.OA.2 Write, explain, and evaluate numerical expressions involving the four operations to solve up to two-step problems. Include expressions involving: • Parentheses, using the order of operations. • Commutative, associative and distributive properties. NC.5.OA.3 Generate two numerical patterns using two given rules. • Identify apparent relationships between corresponding terms. • Form ordered pairs consisting of corresponding terms from the two patterns. • Graph the ordered pairs on a coordinate plane.	Parent Activities Create a math Jenga Create a target number game with a deck of cards Amazing Equation Race	Online Activities Order of Operations Rags to Riches Math Frog a. 14 (5 3) 1

a. $(5 \square 3) \square 1$ 14

Measurement and Data (MD)			
Vocabulary capacity: a measure of the amount of liquid a container will hold centimeter (cm): a metric unit used to measure length (the width of the smallest part of your fingernail) cup: a customary unit for measuring capacity cubic units: a unit, shaped like a cube, used to measure volume customary: the measurement system used most often in the United States decompose: to break into smaller parts gram (g): a metric unit used to measure mass (example: a paper clip) gallon (g): a customary unit used to measure capacity kilogram (kg): a metric unit used to measure mass (1,000 grams= 1 kilogram) kilometers (km)- a metric unit used to measure length (a little more than ½ a mile) liquid volume: amount of liquid in a container line plot: graph that shows data on a number line with Xs liter (L): a metric unit used to measure capacity mass: a measure of the amount of matter in an object	Standards Included NC.5.MD.1 Given a conversion chart, use multiplicative reasoning to solve one-step conversion problems within a given measurement system. NC.5.MD.2 Represent and interpret data. - Collect data by asking a question that yields data that changes over time. - Make and interpret a representation of data using a line graph. - Determine whether a survey question will yield categorical or numerical data, or data that changes over time. NC.5.MD.4 Recognize volume as an attribute of solid figures and measure volume by counting unit cubes, using cubic centimeters, cubic inches, cubic feet, and improvised units. NC.5.MD.5 Relate volume to the operations of multiplication and addition. - Find the volume of a rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths. - Build understanding of the volume formula for rectangular prisms with whole-number edge lengths in the context of solving problems. - Find volume of solid figures with one-digit dimensions composed of two non-overlapping rectangular prisms.	Parent Activities Watermelon Seed Spitting Tip the Scales for Estimation Area and Volume Metric Conversion Game - Have your child measure something with a yardstick and share that result in yards, feet, and inches. - Look at the grocery store for items measured in cups, gallons, liters, and discuss the difference between them. - Allow your child to use a measuring tool to measure household items. Ask them to estimate the volume of a box that would be large enough to hold it.	Online Activities    What is the volume Volume Shape Game Minecraft: Rectangular Prism Volume and Surface Area 

meter: a metric unit used to measure length (think of the height of a door from the door knob to the floor)

metric: a measurement system used throughout the world based on multiples of 10

mile (mi): a customary unit used to measure length or distance

milligram (mg): a metric unit used to measure mass

milliliter (mL): a metric unit used to measure capacity

ounce (oz): a customary unit used to measure weight (16oz = 1 lb)

perimeter: the distance around a closed figure

pint (pt): a customary unit used to measure capacity (2 cups= 1 pint)

polygon: closed figure made of line segments

pound (lb): a customary unit used to measure weight

quart (qt): a customary unit used to measure capacity (2 pints = 1 quart, 4 cups= 1 quart)

rectangular prism: a three dimensional figure with six rectangular faces

scale: a tool used to measure weight or mass; a number line that marks at fixed intervals used in graphing

standard units: units of measure that are



[Metric System Game](#)

[Moon Shoot](#)

[All about measurement](#)

[Customary Units](#)



accepted as a standard time interval: amount of time that passes between two events (seconds, minutes, hours, days, weeks, etc.) volume: the amount of cubic units needed to fill the space within a solid yard (yd): a customary unit for measuring length or distance (3ft=1yd)			
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Number and Operations- Fractions (NF)			
Vocabulary common denominator: a denominator that is the same in two or more fractions compose: joining numbers to create a new new number decompose: to break apart a number into smaller parts denominator: the bottom number in a fraction; the total number of equal parts dividend: the number to be divided in a division problem divisor: a number by which another number is to be divided	Standards Included NC.5.NF.1 Add and subtract fractions, including mixed numbers with unlike denominators using related fractions: halves, fourths and eighths; thirds, sixths, and twelfths; fifths, tenths, and hundredths. - Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. - Solve one- and two-step word problems in context using area and length models to develop the algorithm. Represent the word problem in an equation. NC.5.NF.3 Use fractions to model and solve division problems. - Interpret a fraction as an equal sharing	Parent Activities - Use a deck of card to work on simplifying fractions - Support your child with equivalent fractions by playing the Snag a Spoon game - Play common denominator war - Pretend shopping with decimals Coupon Math with decimals Fold for fractions to better understand equivalent fractions - Give your child a specific time to work on an activity (give it to them using fractions, for example you have 7 ½ minutes). Stop them within the time and let them know they have been working for a fraction of the time (for example 3 ¾) and then ask them how many minutes do they have left. - Work with measuring cups and recipes to determine fractional parts and how to double or	Online Activities   

equivalent fraction: two or more fractions that are equal factor: the numbers being multiplied in a multiplication problem fraction: number that names a part of a whole or part of a group improper fraction: a fraction where the numerator is greater than the denominator least common denominator (LCD): is the smallest number that can be used for all denominators of 2 or more fractions mixed number: a number made up of a whole number and a fraction numerator: the top number in a fraction; how many equal parts are being considered product: an answer to a multiplication problem proper fraction: a fraction where the numerator is smaller than the denominator quotient: an answer to a division problem simplify: a fraction in lowest terms unit fraction: a fraction with a numerator of 1, such as $\frac{1}{3}$, $\frac{1}{6}$, $\frac{1}{2}$	context, where a quantity is divided into equal parts. - Model and interpret a fraction as the division of the numerator by the denominator. - Solve one-step word problems involving division of whole numbers leading to answers in the form of fractions and mixed numbers, with denominators of 2, 3, 4, 5, 6, 8, 10, and 12, using area, length, and set models or equations. NC.5.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction, including mixed numbers. - Use area and length models to multiply two fractions, with the denominators 2, 3, 4. - Explain why multiplying a given number by a fraction greater than 1 results in a product greater than the given number and when multiplying a given number by a fraction less than 1 results in a product smaller than the given number. - Solve one-step word problems involving multiplication of fractions using models to develop the algorithm. NC.5.NF.7 Solve one-step word problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions using area and length models, and equations to represent the problem.	- halve a recipe. - Have questions such as, “Would you rather have $\frac{3}{4}$ or $\frac{4}{6}$ hours of television time tonight?” - Talk with your child about professions where fractions are important part of their jobs (doctor, nurse, dentist, chef, baker, accountant, etc.) - Have your child roll three dice, create a fraction with two of the dice, and multiply the fraction by the third dice. - Allow your child to break whole pieces of food into fractional parts.	     
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			 Football adding fractions Multiplying Fractions Multiplying fractions millionaire game
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Geometry (G)			
Vocabulary acute angle: an angle less than 90 degrees acute triangle: a triangle with 3 acute angles attribute: a characteristic or property of a shape or thing adjacent: side by side or adjoining congruent: identical in form (same size, same shape) coordinate plane: a plane spanned by the x-axis and y-axis in which the coordinates of a point are its distances from two intersecting perpendicular axes coordinates: an ordered pair of numbers (x, y) equilateral triangle: a triangle where all sides have the same length hexagon: polygon with six sided and six	Standards Included NC.5.G.1 Graph points in the first quadrant of a coordinate plane, and identify and interpret the x and y coordinates to solve problems. NC.5.G.3 Classify quadrilaterals into categories based on their properties. - Explain that attributes belonging to a category of quadrilaterals also belong to all subcategories of that category. - Classify quadrilaterals in a hierarchy based on properties.	Parent Activities - Play the game battleship with your child - Go on a shape walk. Find shapes within your home, neighborhood, and community.   - Allow your child to create a dream house out of	Online Activities   

angles intersecting lines: two lines that cross at exactly one point isosceles triangle: a triangle where two sides have the same length line segment: a part of a line with two endpoints obtuse angle: an angle that is more than 90 degrees but less than 180 degrees obtuse triangle: a triangle where one angle is greater than 90 degrees octagon: polygon with eight sides and eight angels parallel lines: two lines that never intersect parallelogram: quadrilateral with opposite sides that are parallel and congruent pentagon: polygon with five sides and five angles perpendicular lines: two lines that intersect creating a right angle polygon: closed figure made of line segments quadrilateral: polygon with four sides and four angles ray: a part of a line that has one endpoint and extends forever in the other direction rectangle: a quadrilateral with 4 sides, 4 right angles, and opposite sides are equal length		shapes.	 Classifying Polygons Classifying Quadrilaterals 3D Nets What are polygons Maze Game Shape Explorer Coordinate Game
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rhombus: parallelogram whose four sides are congruent and whose opposite angles are congruent right angle: an angle that measures 90 degrees right triangle: a triangle with one right angle scalene triangle: a triangle where all sides have different lengths square: a quadrilateral with 4 sides, 4 right angles, and all sides are equal length trapezoid: quadrilateral with one pair of parallel sides triangle: polygon with 3 sides vertex/vertices: point where two rays meet, where two sides of a polygon meet, or where the edges of a polyhedron meet; the top point of a cone or pyramid x-axis: the horizontal axis on a coordinate plane y-axis: the vertical axis on a coordinate plane			
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EOG Practice

Released Form
Free practice online and downloadable
Houghton Mifflin
Vocabulary Practice

K-5 WEBSITE RESOURCES

Math at Home
www.mathplayground.com
XL Math Practice
Online Math Games
Math Activities online
Online Manipulatives
Math Activities
Math Challenges for the Family
Math Zone
Common Core for Parents with students with disabilities
Math Videos

TABLE 2. Common multiplication and division situations.⁷

	Unknown Product	Group Size Unknown ("How many in each group?" Division)	Number of Groups Unknown ("How many groups?" Division)
	$3 \times 6 = ?$	$3 \times ? = 18$, and $18 \div 3 = ?$	$? \times 6 = 18$, and $18 \div 6 = ?$
Equal Groups	There are 3 bags with 6 plums in each bag. How many plums are there in all? <i>Measurement example.</i> You need 3 lengths of string, each 6 inches long. How much string will you need altogether?	If 18 plums are shared equally into 3 bags, then how many plums will be in each bag? <i>Measurement example.</i> You have 18 inches of string, which you will cut into 3 equal pieces. How long will each piece of string be?	If 18 plums are to be packed 6 to a bag, then how many bags are needed? <i>Measurement example.</i> You have 18 inches of string, which you will cut into pieces that are 6 inches long. How many pieces of string will you have?
Arrays, ⁴ Area ⁵	There are 3 rows of apples with 6 apples in each row. How many apples are there? <i>Area example.</i> What is the area of a 3 cm by 6 cm rectangle?	If 18 apples are arranged into 3 equal rows, how many apples will be in each row? <i>Area example.</i> A rectangle has area 18 square centimeters. If one side is 3 cm long, how long is a side next to it?	If 18 apples are arranged into equal rows of 6 apples, how many rows will there be? <i>Area example.</i> A rectangle has area 18 square centimeters. If one side is 6 cm long, how long is a side next to it?
Compare	A blue hat costs \$6. A red hat costs 3 times as much as the blue hat. How much does the red hat cost? <i>Measurement example.</i> A rubber band is 6 cm long. How long will the rubber band be when it is stretched to be 3 times as long?	A red hat costs \$18 and that is 3 times as much as a blue hat costs. How much does a blue hat cost? <i>Measurement example.</i> A rubber band is stretched to be 18 cm long and that is 3 times as long as it was at first. How long was the rubber band at first?	A red hat costs \$18 and a blue hat costs \$6. How many times as much does the red hat cost as the blue hat? <i>Measurement example.</i> A rubber band was 6 cm long at first. Now it is stretched to be 18 cm long. How many times as long is the rubber band now as it was at first?
General	$a \times b = ?$	$a \times ? = p$, and $p \div a = ?$	$? \times b = p$, and $p \div b = ?$

⁴The language in the array examples shows the easiest form of array problems. A harder form is to use the terms rows and columns: The apples in the grocery window are in 3 rows and 6 columns. How many apples are in there? Both forms are valuable.

⁵Area involves arrays of squares that have been pushed together so that there are no gaps or overlaps, so array problems include these especially important measurement situations.