Wilson County Schools



5th Grade Community Resource Framework

Mathematics

2017-2018



Parent Roadmap for <u>5th Grade</u> Common Core Math Grade Level <u>View</u>

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) 22%-27% of EOG			
Vocabulary	Standards Included	Parent Activities	Online Activities
Addend: a number that is added to another in an addition problem (Example: in 2 + 3 = 5, 2 and 3 are addends)	5.NBT.1 Recognize 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	• Allow your child to explain prices of items and explain the values of numbers within those prices.	Which of the following pictures repesents 245?
Approximate: to find a result that is close to the exact answer	what it represents in the place to its left.5.NBT.2 Explain patterns in the number of zeros	 Ask your child questions that deal with multiplying by 10. Allow your child to watch you write checks and 	
Base Ten- a way to express numbers using a place value based on 10, where each place has a value 10 times the place to its right	of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use	 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 shapping have them round 	
Decimal number: a number that uses a decimal point to show tenths, hundredths,			Place Value of Decimals

and thousandths

Decompose: to break apart of break down into smaller parts

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 amount have equivalent value

Estimate: an answer tht 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

5.NBT.3 Read, write, and compare decimals to thousandths.

5.NBT.4 Use place value understanding to round decimals to any place.

5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm.

5.NBT.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

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.
- Play different types of <u>dice and card games</u> with your child.

Engage NY

Recognize the place value of digits

Math Goodies

Place Value Pirates

Decimals in Space

Soccer Math

Fling the teacher







number to find a product

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

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 numbe rot 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)

Baseball Exponents



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

Operations and Algebraic Thinking (OA) 5%-10% of EOG			
Vocabulary	Standards Included	Parent Activities	Online Activities
braces: symbol used to group part of a mathematical expression or equation { }	5.OA.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols	Create a math Jenga	Order of Operations
brackets: symbols used to group part of a methematical expression or equation []	5.OA.2 Write simple expressions that record		Rags to Riches
coordinate plane: a plane spanned by the	calculations with numbers, and interpret numerical expressions without evaluating them.	E.F.	Math Frog
x-axis and y-axis in which the coordinates of a point are its distances from two intersecting perpendicular axes	5.OA.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs		
corresponding terms: two numbers or elements that occupy the same position in two different patterns	consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane.		
evaluate: to find the value of an expression ordered pair: a pair of numbers used to find a point on a coordinate plane			Alter Attack
parentheses: symbols used to group part of a mathematical expression or equation ()		The target number is 0.	1 Ps
term: a number within a sequence			14
x-axis: the horizontal axis on a coordinate plane		Amazing Equation Race	
y-axis: the vertical axis on a coodinate plane			

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Measurement and Data (MD) 10%-15% of EOG			
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, shapes like a cube, used to measure volume customary: the measurement system used most often in the United States decompose: to break into smaller parts	 Standards Included 5.MD.1 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. 5.MD.2 Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots. 5.MD.3 Recognize volume as an attribute of solid figures and understand concepts of volume measurement. 	 Parent Activities <u>Watermelon Seed Spitting</u> <u>Tip the Scales for Estimation</u> <u>Area and Volume</u> <u>Metric Conversion Game</u> 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. 	<image/>
gram (g): a metric unit used to measure mass (example: a paper clip) gallon (g): a customary unit tused to measure capacity kilogram (kg): 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: amout of liquid in a container line plot: graph that shows data on a number line with Xs	 5.MD.4 Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units. 5.MD.5 Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. 		What is the volume Volume Shape Game Minecraft: Rectangular Prism Volume and Surface Area

liter (L): metric unit used to measure capacity mass: measure of the amount of matter in an object		Alle had
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		Metric System Game Moon Shoot
milligram (mg): a metric unit used to measure mass		All about measurement
milliliter (mL): metric unit used to measure capacity		Customary Units
ounce (oz): a customary unit used to measure weight (16oz = 1 lb)		
perimeter: 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 (Ib): 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		
	1	

scale: 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 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)		

Number and Operations- Fractions (NF) 47%-52% of EOG			
Vocabulary common denominator: a denominator that is	Standards Included	 Parent Activities Use a deck of card to work on simplifying 	Online Activities
the same in two or more fractions	5.NF.1 Add and subtract fractions with unlike denominators (including mixed numbers) by	 <u>fractions</u> Support your child with equivalent fractions by 	
compose: joining numbers to create a new new number	replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or	 playing the <u>Snag a Spoon game</u> Play <u>common denominator war</u> Pretend abagaing with desirable 	
decompose: to break apart a number into smaller parts	<i>example,</i> $2/3 + 5/4 = 8/12 + 15/12 = 23/12$. (In general, $a/b + c/d = (ad + bc)/bd$.)	 Pretend <u>snopping with decimals</u> <u>Coupon Math</u> with decimals <u>Fold for fractions</u> to better understand 	Snows
denominator: the bottom number in a fraction; the total number of equal parts	5.NF.2 Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators,	 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 	

dividend: the number to be divided in a division problem

divisor: a number by which another number is to be divided

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 $\frac{1}{3}$, $\frac{1}{8}$, $\frac{1}{2}$

e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result 2/5 + 1/2 = 3/7, by observing that 3/7 < 1/2.

Apply and extend previous understandings of multiplication and division.

5.NF.3 Interpret a fraction as division of the numerator by the denominator $(a/b = a \div b)$. Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem.

5.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.

5.NF.5 Interpret multiplication as scaling (resizing)

5.NF.6 Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.

5.NF.7 Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.1

within the time and let them know they have been working for a fraction of the time (for example 3 ³/₄) 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 halve a recipe.

Have questions such as, "Would you rather have ³/₄ or 4/6 hours of telivision 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.













	Math Vocabulary Game PLAY WEBTYULOP ASDEFGHJKL Entry ZXCVBNM
	Football adding fractions
	Multiplying Fractions
	Multiplying fractions millionare game

Geometry (G) 2%-7% of EOG			
Vocabulary acute angle: an angle less than 90 degrees	Standards Included	 Parent Activities Play the game battleship with your child 	Online Activities
acute triangle: a triangle with 3 acute angles	5.G.1 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to	 Go on a shape walk. Find shapes within your home, neighborhood, community. 	
attribute: characteristic or property of a shape or thing	coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that		
adjacent: side by side or adjoining congruent: identical in form (same size, same shape)	the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention		
coordinate plane: a plane spanned by the x-axis and y-axis in which the coordinates of a point are its distances from two	that the names of the two axes and the coordinates correspond (e.g., <i>x</i> -axis and		

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 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

x-coordinate, y-axis and y-coordinate).

5.G.2 Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.

5.G.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.

5.G.4 Classify two-dimensional figures in a hierarchy based on properties.



Allow your child to create a dream house out of shapes.





Classifying Polygons Classifying Quadrilaterals 3D Nets What are polygons Maze Game Shape Explorer Coordinate Game

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		
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 coodinate plane		

EOG Practice

Released FormFree practice online and downloadableHoughton MifflinVocabulary PracticeK-5 WEBSITE RESOURCESMath at Homewww.mathplayground.comXL Math PracticeOnline Math GamesMath Activities onlineOnline ManipulativesMath ActivitiesMath Challenges for the FamilyMath ZoneCommon Core for Parents with students with disabilities

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 × 6 = ?	3 × ? = 18, and 18 ÷ 3 = ?	? × 6 = 18, and 18 ÷ 6 = ?
	There are 3 bags with 6 plums in each bag. How many plums are there in all?	If 18 plums are shared equally into 3 bags, then how many plums will be in each bag?	If 18 plums are to be packed 6 to a bag, then how many bags are needed?
Equal Groups	Measurement example. You need 3 lengths of string, each 6 inches long. How much string will you need altogether?	Measurement example. You have 18 inches of string, which you will cut into 3 equal pieces. How long will each piece of string be?	Measurement example. 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?
Arrow 4	There are 3 rows of apples with 6 apples in each row. How many apples are there?	If 18 apples are arranged into 3 equal rows, how many apples will be in each row?	If 18 apples are arranged into equal rows of 6 apples, how many rows will there be?
Arrays,⁴ Area⁵	Area example. What is the area of a 3 cm by 6 cm rectangle?	Area example. A rectangle has area 18 square centimeters. If one side is 3 cm long, how long is a side next to it?	Area example. A rectangle has area 18 square centimeters. If one side is 6 cm long, how long is a side next to it?
	A blue hat costs \$6. A red hat costs 3 times as much as the blue hat. How much does the red hat cost?	A red hat costs \$18 and that is 3 times as much as a blue hat costs. How much does a blue hat cost?	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?
Compare	Measurement example. A rubber band is 6 cm long. How long will the rubber band be when it is stretched to be 3 times as long?	Measurement example. 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?	Measurement example. 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 × b = ?	$a \times ? = p$, and $p + a = ?$	$? \times b = p$, and $p + b = ?$

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.

Math Videos