Quarter 3 – Quarter 4	
Skills	**Activities**
Know the many roles of fractions: (Parts of a whole, parts of a set, rates, ratios, divisions of whole numbers, and location on a number line.)	**Numerator**: The number on top; tells how many. **Denominator:** The number on bottom; tells what type of fraction. **Parts of a set:** Count out a number of small objects (coins, Lego blocks, bottle caps.) Determine the total number of items (i.e. 20 Lego blocks) then divide the objects into smaller piles (if possible you can color code your piles so that you can refer to the red pile, blue pile, etc.) and have your child express the number of objects in each smaller pile as a fraction. (In our example, a pile of 5 blocks would be described as 5/20, which can then be reduced to ¼.) **Rates:** Get a coin and a plastic cup. Have your child stand a few steps away from the cup and try to toss the coin into it. Record the total number of attempts and the number of times the coin stayed in the cup. The rate of success can be expressed as a fraction. The numerator will be the number of successful tries, and the denominator will be the total number of tries. For example, if the child tosses the coin 15 times, and it lands in the cup 7 times, the rate of success can be written as 7/15. **Ratios:** Choose two items that are present in your home, for example shoes and people. Have your child count both. The ratio of shoes to people can be expressed as a fraction, where the first item (shoes) becomes the denominator, and the second item (people) becomes the numerator. So, if there are 20 shoes in your home and 4 people, the ratio of shoes to people is 20/4, which reduces to 5/1 . If you want to determine the ratio of people to shoes, the number of people becomes the numerator, and the number of shoes becomes the denominator. In our example, the ratio of people to shoes is 4/20, which can be reduced to 1/5. **Division of whole numbers:** Write out a few simple division problems. (10÷2, 5÷7, 46÷3, etc.) It does not matter if these are easy to solve. Have your child express these problems as fractions. The first number (the number being divided) becomes the numerator, and the second number (which you are dividing by) becomes the denominator. So 10÷2 becomes 10/2, (which reduces to 5) 5÷7 becomes 5/7 (which doesn't reduce) and 46÷3 becomes 46/3 (which reduces to 15and 1/3). **Parts of a whole:** Fraction Pizzas: Cut out construction paper circles (pizzas) and draw lines to divide them into halves, thirds, fourths, sixths, etc. On index cards, write fractions. Have your child draw an index card. For example, if they draw 2/3 they must determine which "pizza" is the best to use for thirds and choose a topping. For toppings you can use a physical manipulative or have your child draw on their choice of pizza topping. As an extension, you might ask if there is another pizza that could work (Example: 4/6 would have been the same as 2/3) Give your child a pile of various coins that equals one dollar. Have your child determine the fraction of a dollar in pennies, nickels, dimes, quarters.

	Fractions Game: http://illuminations.nctm.org/activitydetail.aspx?id=18 Fraction Games http://www.jamit.com.au/fraction-games.htm To translate between improper fractions and mixed numbers you can use a candy bar. This activity works best with a candy bar that is scored and easy to divide(like those flat Hershey's bars). For example, a student receives 1 1/4 pieces. He is instructed to break the whole into parts and then count how many pieces he has. If the whole is broken into 4 parts, he has 5/4, which is an improper fraction. An extension for this activity is to have your child decide which is greater: 1 1/4 or 5/4, and explain their answer.
Solve math problems that include at least two of the following: decimals, fractions, ratios, percentages, or rates.	Print or find 5 different pictures of your choosing. Draw a line to divide each into 6 equal pieces and on each piece of one picture write an equivalent term for example on one picture you may write 0.25, ¼, 2/8, 25%, 1:4, 5 to 20. With picture sides down, have your child match up the equivalent terms. They can check their own work by seeing if the ones that they have grouped together will form a picture. http://www.bbc.co.uk/skillswise/numbers/fractiondecimalpercentage/comparing/comparingall3/game.shtml
Use probability to predict outcomes.	Get a random number generator (usually a spinner or dice). A standard die has 6 faces, so it has a 1 in 6 chance of landing on each of the numbers. In theory, this means that if you roll the die 6 times, every number will come up. Generally, the more time you roll the die, the closer the actual results come to the theoretical probability. So, roll dice (or spin the spinner, or flip a coin) a certain number of times, and ask your child to predict how many times an individual number will come up. Ask them to explain their reasoning. If you do not have access to actual coins, dice, etc. you may find this useful: http://www.betweenwaters.com/probab/probab.html The probability of a single event is often written as a fraction number of favorable outcomes on top of the fraction and the total number of possible outcomes on bottom of the fraction. When you are dealing with two separate and independent events you must find the probability of each even and multiply them together. What is the probability of flipping heads on a coin and rolling a number greater than 4 on a die. EX: P(heads) = ½ and P(greater than 4) = 2/6 = 1/3 ½ x ⅓ = ⅙ So the probability of both events happening would be 1/6. Activity: Have your child predict outcomes with probability. Then have them experiment to see if their prediction comes true. Useful tools for probability are cards, dice, spinners, cards, etc. http://www.crctlessons.com/probability-of-compound-events.html http://www.crctlessons.com/probability-game.html

Use a coordinate grid to locate a point.	To locate a point on a grid you will need two parts, a vertical (up and down) location and a horizontal (side to side) location. You can have your child locate points on any map by giving the coordinate of that part of the grid. Another tool for locating a point is the game Battleship. For locating and naming coordinates: http://www.shodor.org/interactivate/activities/SimpleCoordinates/ Also for coordinates: http://www.mathplayground.com/locate_aliens.html
Recognize and draw translations (identical shapes in different locations-turned, flipped or slid over) of shapes and objects.	Find translated shapes in your everyday life. How are the translations created? Are the figures rotated? Are they reflected? Are they slid over? For several transformation games: http://www.onlinemathlearning.com/transformation-games.html
Calculate perimeter and area.	The perimeter of an object is the distance around the object. The area of an object is the amount of space inside the shape. Have your child measure the perimeter and area of various rooms and objects in your house, such as tables, pictures, area rugs, their bedroom. http://www.bgfl.org/bgfl/custom/resources_ftp/client_ftp/ks2/maths/perimeter_and_area/index.html
Describe the relationship of the volume of a figure to the area of its base.	Have your child look in your refrigerator, and pick out a few containers with different shapes. Have them compare containers of liquid and guess which container holds more based on shape. Then compare how much the container holds, based on its label. Finding the volume of boxes is relatively easy. Multiply the length by width by height. (l X w X h) Have your child measure some cereal boxes, shoe boxes, etc. Ask them to tell you how the volume is related to the area of the bottom of the box. Here are the volume formulas for other shapes: Volume of a Cube: side X side X side Volume of a Rectangular Prism: Length X Width X Height Volume of a Cylinder: π X Radius^2 X Heigh

Use the properties of angles to solve problems. (**Supplementary angles:**- add up to 180^o, **complementary angles** add up to 90^o, and **vertical angles** are the angles formed opposite each other when lines crisscross)	Play Geometry Simon Says. Make sure to decide on what gestures will represent each geometry property. Have your child (children) stand up. Call out the vocabulary term (line, segment, point, perpendicular, etc.). Students must respond with the correct gesture, or else they are out. Mnemonic: To remember what Supplementary Angles are, note that they start with "S" as does Straight. A straight line has 180° and supplementary angles add up to 180°.To remember what Complementary Angles are, note that they start with "C" as does Corner. A corner has a 90° measure and Complementary Angles add up to 90°. For practice measuring angles try this game: http://www.mathplayground.com/alienangles.html
Turn a word problem into an equation, or create a word problem from an equation.	The easiest way to turn a word problem into an equation is to start with a simple comparison. Heights make a good mode of comparison. For example: "Bill is 6 inches taller than Ted" If you call Bill's height "B" and Ted's Height "T" that statement can be expressed as B-6=T. Have your child reproduce this process by comparing any two objects' length or weight. Many students have trouble relating math symbols to math words. This makes it more difficult to convert word problems into equations. Here is a list of math symbols and the words that describe them. Create flash cards from this list and practice them with your child. (Usually, it's best to show them the words and make them guess the symbol) WORD — SYMBOL Sum — + Product — x Difference — - Quotient — ÷ Is, Equals — = Is Less Than — < Is Greater Than — > Squared — x^2 Square Root — √ Ratio — :
Measure objects using the U.S. and metric systems. Estimate measurements.	Get a ruler. Standard rulers have both inches (U.S. standard) and centimeters (metric). Have your child estimate a few things around your house. (Height of kitchen table, length of welcome mat, etc.) Then, have students measure as precisely as possible (most rulers have marks for 8ths of an inch and millimeters (10ths of a centimeter.) After measuring a few objects precisely, have your child look at another object, and make an estimate of how long it will be. Then have him or her measure the object to see how close the estimate was. http://www.funbrain.com/measure/

GRADE 6 – MATH

RESOURCES

www.mathgoodies.com/lessons/vol5/absolute_value.html
http://www.math-play.com/Factors-and-Multiples-Jeopardy/Factors-and-Multiples-Jeopardy.html
http://www.quia.com/cm/99245.html?AP_rand=1887959329
http://teachers.sduhsd.k12.ca.us/abrown/activities/jeopardy/rootjeopardy.htm

www.funbrain.com/tens/index.html
http://www.amblesideprimary.com/ambleweb/mentalmaths/fracto.html
http://classroom.jc-schools.net/basic/math-order.html
http://ims.ode.state.oh.us/ODE/IMS/Lessons/Content/CMA_LP_S01_BH_L06_I08_01.pdf
www.bbc.co.uk/education/mathsfile/shockwave/games/postie.html
http://nlvm.usu.edu/en/nav/frames_asid_201_g_4_t_2.html?open=instructions
http://www.gamequarium.com/equations.html
Fractions Game: http://illuminations.nctm.org/activitydetail.aspx?id=18
Fraction Games: http://www.jamit.com.au/fraction-games.htm
http://www.bbc.co.uk/skillswise/numbers/fractiondecimalpercentage/comparing/comparingall3/game.shtml
http://www.betweenwaters.com/probab/probab.html
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http://www.bgfl.org/bgfl/custom/resources_ftp/client_ftp/ks2/maths/perimeter_and_area/index.html
For practice measuring angles try this game: http://www.mathplayground.com/alienangles.html
http://www.funbrain.com/measure/