**Grade 5 G/T Mathematics**

 **Unit 1 – Rover-Rocket: Number Systems, Ratio and Proportion, and Statistics and Probability**

**Parent Preview**

Mathematical Concepts: (Your child will be able to)

* Understand the concept of rational vs. irrational numbers.
* Express fractions as (terminating, repeating, or non-terminating/non-repeating) decimals and decimals as fractions.
* Fluently divide multi-digit numbers.
* Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.
* Apply mathematical properties as strategies to multiply and divide rational numbers.
* Interpret and compute quotients of fractions and mixed numbers.
* Solve real-world and mathematical problems involving the four operations with rational numbers.
* Find the greatest common factor of two whole numbers.
* Find the least common multiple of two whole numbers.
* Find the surface area of a right rectangular prism with fractional edge lengths.
* Solve real-world and mathematical problems involving area, and surface area of two- and three-dimensional objects.
* Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.
* Understand the concept of a unit rate a/b associated with a ratio a:b with b ␣ 0, and use rate language in the context of a ratio relationship.
* Use ratio and rate reasoning to solve real-world and mathematical problems.
* Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.
* Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.
* Understand that a set of data collected to answer a statistical question has a distribution, which can be described by its center, spread, and overall shape.
* Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.
* Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
* Summarize numerical data sets in relation to their context, such as by: Reporting the number of observations, Describing the nature of the attribute under investigation, including how it was measured and its units of measurement, Giving quantitative measures of center (median and /or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered, Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.

**Vocabulary: (Words your child will need to understand)**

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| • **Rational Number:** A number that can be expressed as a ratio of two integers | • **Irrational Number:** Numbers that cannot be written as a ratio of two integers - The decimal extensions never terminate and never repeat. |
| • **Terminating Decimal:** A decimal that contains a finite number of digits. | **• Repeating Decimal:** A decimal that has an infinitely repeating sequence of digits Ex., 5.2424… = |
| • **Least Common Multiple (LCM):** The smallest number, other than zero, that is a common multiple of two or more numbers symbol between two expressions. | • **Greatest Common Factor (GCF):** The greatest number that divides into two or more numbers with no remainder |
| • **Simplest Form**: A fraction is in its simplest form when the numerator and denominator have only 1 as their common factor. | •  **Net:** A two-dimensional pattern of a three-dimensional figure that can be folded to form the figure |
| • **Surface Area:** The total area of the surface of a three-dimensional object | **• Ratio-** a comparative value of two or more amounts. |
| • **Proportion**- a part to whole comparison. The equality of two ratios written as an equation. | • **Transform-** to change position or size. |
| **• Relationship-** the way in which two or more concepts are connected. | **• Tape Diagram-** a drawing that looks like a segment  of tape, used to illustrate number relationships. |
| **• Rate-** a ratio that compares quantities measured in different units | **• Unit Price-** tells you the cost per amount you want to buy. |
| **• Unit Rate-** a comparison of two measurements in  which one of the terms has a value of one. | **• Percent-** a ratio whose denominator is 100. |
| **• Convert-** to change in form, such as inches to  centimeters, etc. | • **Dilation-** a transformation in which a figure grows larger. |
| * **Data Set:**A collection of data points
 | * **Median:** When numbers are arranged from least to greatest, the median is the middle number or mean of two middle numbers.
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| * **Center Measures:** The "middle' value or perhaps the typical value of the data, most frequently measured using mean, median and mode.
 | * **Mode:** The number that appears most frequently in a set of data.
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| * **Measures of Variation:** A measure that describes how spread out or "scattered" a set of data.
 | * **Range:** The difference between the greatest and the least numbers in a set of data.
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| * **Mean:** A number found by adding the data and dividing by the number of data. It is also referred to as the average.
 | * **Number Line:** A line marked with numbers, used to show operations.
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| * **Dot Plots:** A number line long enough to encompass all numbers in the sample, showing a dot over the position corresponding to each number.
 | * **Histograms:** A bar graph representing frequency distribution for certain ranges or intervals.
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| * **Box Plots:** A diagram or graph using a number line to show the distribution of a set of data. The box plot displays the median, upper and lower quartiles, and the maximum and minimum values of the data.
 | * **Interquartile Range:** The difference between the first quartile and third quartile of a set of data. This is one way to describe the spread of a set of data.
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| * **Mean Absolute Deviation:** Average distance between each data value and the mean.
 | * **Cluster:** A group of data that appears bunched together on a line plot.
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**Optional activities to do with your child**:

Math Game – Identify the Least Common Multiple: [http://www.oswego.org/ocsd-web/match/dragflip.asp?filename=slanelcm](https://mail.hcpss.org/owa/redir.aspx?C=bf637cd807194780bd7092d8b59af9dc&URL=http%3a%2f%2fwww.oswego.org%2focsd-web%2fmatch%2fdragflip.asp%3ffilename%3dslanelcm" \t "_blank)

# Metric Measurement Millionaire Game: <http://www.quia.com/rr/96635.html>

Fruit Shoot Greatest Common Factor Game: <http://www.sheppardsoftware.com/mathgames/fractions/GreatestCommonFactor.htm>

Adding & Subtracting Fractions “Board” Game: <http://www.math-play.com/adding-and-subtracting-fractions-game.html>

Mixed Numbers & Improper Fractions Game: <http://www.mathplayground.com/fractions_mixed.html>

Collection of Fractions Games (including skills like simplifying, converting to decimals, multiplying, dividing and MORE): <http://www.math-play.com/math-fractions-games.html>

Interactive Surface Area of a Prism: <http://www.glencoe.com/sites/common_assets/mathematics/im1/concepts_in_motion/interactive_labs/M3_09/M3_09_dev_100.html>

Minecraft Rectangular Prism Game: <http://www.xpmath.com/forums/arcade.php?do=play&gameid=118#.Uf0uiVNS6HI>

Longest NHL Matches in History: <http://www.yummymath.com/2013/longest-nhl-matches-in-history/>

Glowing Rectangles: <http://www.yummymath.com/2011/glowing-rectangles/>

Big Burger 2013: <http://www.yummymath.com/2013/big-burger-2013/>

Create a Graph <http://nces.ed.gov/nceskids/createagraph/default.aspx>

Classroom Jeopardy <http://www.superteachertools.com/jeopardy/usergames/Feb201105/game1296561235.php>

Theme Park Favorites <http://www.harcourtschool.com/activity/theme_park_favorites/>

Interpreting Histograms <https://www.mangahigh.com/en-us/math_games>