

Name: _____



SAN JUAN DEL SUR DAY SCHOOL



GRADE 7 MATH LEARNING OUTCOMES STUDENT CHECKLIST

UNIT CONCEPT	LESSON TOPIC	LEARNING GOAL
<p><u>Factors and Multiples</u></p> <p><i>"I am learning to recognize and use patterns in the number system."</i></p>	Factors and Multiples	<input type="checkbox"/> I can find the factor pairs of numbers <input type="checkbox"/> I can generate multiples and factors, using a variety of tools and strategies (e.g., identify multiples on a hundreds chart; create rectangles on a geoboard)
	Prime Factorization and Exponential Notation	<input type="checkbox"/> I can identify prime numbers up to 100 <input type="checkbox"/> I can use strategies to determine if a number is prime
	Greatest Common Factor	<input type="checkbox"/> I can determine the GCF of a group of numbers <input type="checkbox"/> I can relate factors and multiples to multiplication and division
	Least Common Multiple	<input type="checkbox"/> I can determine the LCM of a group of numbers <input type="checkbox"/> I can relate factors and multiples to multiplication and division
	Square Roots and Cube Roots	<input type="checkbox"/> I can determine or validate the factors of a number by applying strategies for divisibility
<p><u>Real Numbers</u></p> <p><i>"I am learning to apply what I have learned about the four operations to solve problems with real numbers."</i></p>	Idea of Negative Numbers and the Number Line	<input type="checkbox"/> I can use negative numbers in context (e.g. temperature and money) (e.g., -10°C is much colder than $+5^{\circ}\text{C}$) <input type="checkbox"/> I can identify and compare integers found in real-life contexts
	Addition and Additive Inverse	<input type="checkbox"/> I can represent and explain how a number and its opposite have a sum of 0 and are additive inverses <input type="checkbox"/> I can describe situations where opposite quantities combine to make 0 (ex: A hydrogen atom has 0 charge because its two constituents are oppositely charged.)
	Subtraction and Absolute Value of the Difference	<input type="checkbox"/> I can represent how the distance between two rational numbers on a number line is the absolute value of their difference and apply this to real-world situations <input type="checkbox"/> I can identify subtraction of rational numbers as adding the additive inverse property to subtract rational numbers, $p - q = p + (-q)$ <input type="checkbox"/> I can explain and justify why the sum of $p + q$ is located a distance of $ q $ in the positive or negative direction from p on a number line.
	Multiplication, Division and Combined Operations of Integers	<input type="checkbox"/> I can apply what I have learned about multiplication and division of fractions to multiply and divide rational numbers <input type="checkbox"/> I can interpret quotients of rational numbers by describing real-world contexts <input type="checkbox"/> I can recognize and describe the rules when multiplying signed numbers and apply the order of operations and distributive property, to multiply rational numbers (ex: $(-1)(-1)=1$) <input type="checkbox"/> I can explain why integers can be divided except when the divisor is 0 and describe why the quotient is always a rational number
	Rational Numbers	<input type="checkbox"/> I can use properties of operations as strategies to add and subtract rational numbers <input type="checkbox"/> I can use the products of rational numbers to describe real-world situations <input type="checkbox"/> I can solve real-world problems by adding, subtracting, multiplying and dividing rational numbers, including complex fractions
	Real Numbers and the Use of Calculators	<input type="checkbox"/> I can change a rational number to a decimal using long division and explain how the decimal form of a rational number stops in zeroes or repeats
<p><u>Introduction to Algebra</u></p> <p><i>"I am learning to compare arithmetic language and algebraic language."</i></p>	Use of Letters in Algebra	<input type="checkbox"/> I can identify variable and numerical expressions and write using word phrases <input type="checkbox"/> I can explain what a variable is and how it is used in an expression
	Evaluation of Algebraic Expressions and Formulas	<input type="checkbox"/> I can use variables to represent numbers in real-world or mathematical problems
	Writing Algebraic Expressions to Represent Real-World Situations	<input type="checkbox"/> I can make reasonable simple equations and inequalities to solve real-world problems
<p><u>Algebraic Manipulation</u></p> <p><i>"I am learning to manipulate algebraic expressions."</i></p>	Like Terms and Unlike Terms	<input type="checkbox"/> I can apply properties of operations to add, subtract, factor and expand linear expressions with rational coefficients
	Distributive Law, Addition, and Subtraction of Linear Algebraic Expressions	<input type="checkbox"/> I can simplify variable expression by adding and subtracting like terms <input type="checkbox"/> I can combine like terms to factor and expand linear expressions with rational coefficients using the distributive property
	Simplification of Linear Algebraic Expressions	<input type="checkbox"/> I can use properties of operations to write equivalent expressions
	Factorization by Extracting Common Factors	<input type="checkbox"/> I can write expressions as a product of a similar expression using factors
	Factorization by Grouping Terms	<input type="checkbox"/> I can rewrite an expression in a different form

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<p><u>Simple Equations in One Variable</u> <i>"I am learning to use variables to represent quantities in a real-world or mathematical problem."</i></p>	Simple Linear Equations in One Variable	<input type="checkbox"/> I can solve linear equations with one variable <input type="checkbox"/> I can check my solutions by substituting the solution separately into each side of the equation
	Equations Involving Parentheses	<input type="checkbox"/> I can apply the distributive law of multiplication over addition to solve equations involving parentheses
	Simple Fractional Equations	<input type="checkbox"/> I can use multiplication to transform simple fractional equations into linear equations
	Forming Linear Equation to Solve Problems	<input type="checkbox"/> I can solve real-world and mathematical problems using linear equations
<p><u>Ratio, Rate, and Speed</u> <i>"I am learning to use ratios, rates, and proportions to solve real world problems."</i></p>	Ratios Involving Rational Numbers	<input type="checkbox"/> I can determine that a proportion is a statement of equality between two ratios <input type="checkbox"/> I can write ratios in simplest form
	Average Rate	<input type="checkbox"/> I can express ratios and compute unit rates using real world examples
	Speed	<input type="checkbox"/> I can use formulas to calculate speed <input type="checkbox"/> I can convert units of speed including km/hr, mi/hr, m/s
<p><u>Percentage</u> <i>"I am learning to use percentages to express and compare quantities."</i></p>	Expressing One Quantity as a Percentage of Another	<input type="checkbox"/> I can express the relationships between fractions, decimals, and percents <input type="checkbox"/> I can use percentage to compare a part to a whole <input type="checkbox"/> I can use percentage to compare two quantities
	Reverse Percentages	<input type="checkbox"/> I can recognize situations in which percentage proportional relationships apply
	Percentage Increase and Decrease	<input type="checkbox"/> I can apply proportional reasoning to solve ratio and percent problems involving percent increases and decreases
	Discount and Sales Tax	<input type="checkbox"/> I can set up and find markups and discounts as they relate to proportions and the real world <input type="checkbox"/> I can set up and find percent of tax as it relates to proportions and the real world
<p><u>Angles, Triangles, and Quadrilaterals</u> <i>"I am learning to measure and construct angles using tools and mathematical applications."</i></p>	Points, Lines and Plane	<input type="checkbox"/> I can define basic geometrical terms and draw an example of each
	Angles	<input type="checkbox"/> I can use a protractor to measure and draw the different types of angles <input type="checkbox"/> I can use my knowledge of complementary and supplementary angles to find the measurement of an unknown angle <input type="checkbox"/> I can correctly name and label angles
	Perpendicular Bisectors and Angle Bisectors	<input type="checkbox"/> I can identify, draw, and measure perpendicular and angle bisectors <input type="checkbox"/> I can use a compass to construct geometric figures
	Triangles	<input type="checkbox"/> I can classify triangles by their sides and angles <input type="checkbox"/> I can use sufficient conditions to construct a unique triangle
	Quadrilaterals	<input type="checkbox"/> I can classify quadrilaterals by their sides and angles <input type="checkbox"/> I can construct various quadrilaterals <input type="checkbox"/> I can name and measure the angles of a quadrilateral
<p><u>Number Patterns</u> <i>"I am learning to recognize and determine patterns by making conjectures."</i></p>	Number Patterns and Sequences	<input type="checkbox"/> I can observe mathematical patterns and continue a sequence <input type="checkbox"/> I can make conjectures about number and geometric pattern sequences (e.g. all multiples of 4 are even)
	General Term of a Sequence	<input type="checkbox"/> I can determine the terms of a sequence <input type="checkbox"/> I can find the formula for the general term of a sequence
<p><u>Coordinates and Linear Graphs</u> <i>"I am learning to construct and use graphs of linear functions."</i></p>	Cartesian Coordinate System	<input type="checkbox"/> I can label the axes of a four quadrant Cartesian plane and identify the origin <input type="checkbox"/> I can identify the location of a point in any quadrant of a Cartesian plane using an ordered pair with integral coordinates <input type="checkbox"/> I can draw shapes and designs, using integral ordered pairs, in a Cartesian plane. <input type="checkbox"/> I can graph and identify ordered pairs on a coordinate plane
	Linear Graphs	<input type="checkbox"/> I can plot points on a coordinate plane <input type="checkbox"/> I can draw graphs of linear functions <input type="checkbox"/> I can solve a system of equations using graphing on a coordinate plane.
	Slopes of Linear Graphs	<input type="checkbox"/> I can draw graphs of linear functions using equations <input type="checkbox"/> I can use a graph to identify slope of a line

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<p style="text-align: center;"><u>Inequalities</u></p> <p><i>"I am learning to apply my knowledge of ordering numbers to solve inequalities."</i></p>	Solving Simple Inequalities	<input type="checkbox"/> I can solve inequalities on a number line, and solve one step inequalities using inverse operations
	More Properties of Inequalities	<input type="checkbox"/> I can use variables to represent numbers in real-world or mathematical problems and make reasonable simple equations and inequalities to solve problems
	Simple Linear Inequalities	<input type="checkbox"/> I can apply the property of inequalities to solve simple linear inequalities in one variable
	Applications of Simple Inequalities	<input type="checkbox"/> I can write and solve word problems leading to inequalities in the form $px+q>r$ or $px+q<r$ <input type="checkbox"/> I can explain a solution to an inequality
<p style="text-align: center;"><u>Perimeters and Areas of Plane Figures</u></p> <p><i>"I am learning to use area formulas to solve real world problems involving plane figures."</i></p>	Perimeters and Areas of a Square, Rectangle, and Triangle	<input type="checkbox"/> I can find the perimeter of a given shape <input type="checkbox"/> I can explain how to find the area of a square, rectangle, and triangle
	Circumference and Area of a Circle	<input type="checkbox"/> I can define and illustrate the relationship between the diameter and radius of a circle <input type="checkbox"/> I can define pi (π) and explain how it is related to circles <input type="checkbox"/> I can solve problems involving circles <input type="checkbox"/> I can draw a circle with a specific radius or diameter with and without a compass
	Area of a Parallelogram	<input type="checkbox"/> I can use a formula to find the area of a parallelogram
	Area of a Trapezoid	<input type="checkbox"/> I can use a formula to find the area of a trapezoid
	Perimeters and Areas of Composite Plane Figures	<input type="checkbox"/> I can name the 2D shape made from slicing a 3D figure <input type="checkbox"/> I can solve real world problems involving 2D area and perimeter of complex shapes
<p style="text-align: center;"><u>Volumes and Surface Areas of Solids</u></p> <p><i>"I am learning to use nets of geometric shapes to determine volume and surface area of solids."</i></p>	Volumes and Total Surface Areas of a Cube and Cuboid	<input type="checkbox"/> I can draw a net of a cube and cuboid <input type="checkbox"/> I can find the volume of a cube and cuboid <input type="checkbox"/> I can find the total surface area of a cube and cuboid <input type="checkbox"/> I can explain the relationship between nets and the solids formed from the nets
	Volume and Total Surface Area of a Prism	<input type="checkbox"/> I can draw a net of the prism <input type="checkbox"/> I can find the volume of different types of prisms <input type="checkbox"/> I can find the surface area of different types of prisms
	Volumes and Surface Areas of Composite Solids	<input type="checkbox"/> I can convert between square meters and square centimeters, and between cubic meters and cubic centimeters <input type="checkbox"/> I can find the volume of a composite solid by dissecting it into simpler solids, finding the volume of the parts and adding or subtracting to find the total volume <input type="checkbox"/> I can find the surface of a composite solid by dissecting it into simpler solids, finding the surface area of the parts and adding or subtracting to find the total surface area <input type="checkbox"/> I can relate volume of 3D objects to the world around me
<p style="text-align: center;"><u>Proportions</u></p> <p><i>"I am learning to use proportions to understand scale drawings."</i></p>	Scale Drawings	<input type="checkbox"/> I can recognize and represent a proportion as a statement of equality between two ratios <input type="checkbox"/> I can reproduce a scale drawing that is proportional to a given geometric figure using a different scale <input type="checkbox"/> I can use ratios and proportions to create scale drawings of real-world objects using tools
	Map Scale and Calculation of Area	<input type="checkbox"/> I can compute lengths and areas from scale drawings using strategies such as proportions
	Direct Proportion	<input type="checkbox"/> I can determine whether two quantities are in direct proportion <input type="checkbox"/> I can explain the idea of direct proportion
	Inverse Proportion	<input type="checkbox"/> I can determine whether two quantities are in inverse proportion <input type="checkbox"/> I can explain the idea of inverse proportion between two quantities
<p style="text-align: center;"><u>Data Handling</u></p> <p><i>"I am learning to develop, use, and analyze data for statistical purposes."</i></p>	Collection of Data	<input type="checkbox"/> I can use different data collection methods <input type="checkbox"/> I can analyze and interpret data using measures of central tendency and variability
	Dot Plots	<input type="checkbox"/> I can draw informal comparative inferences about two populations from random sample
	Measure of Center: Mean and Median	<input type="checkbox"/> I can find mean, median, and mode and relate them to real world situations <input type="checkbox"/> I can find similarities and differences in two different data sets (including mean & median) <input type="checkbox"/> I can compare the differences in the measure of central tendency in two numerical data distributions by measuring the difference between the centers and expressing it as a multiple of a measure of variability <input type="checkbox"/> I can draw informal comparative inferences about two populations from random sample
	Mode	<input type="checkbox"/> I can determine the mode of an ungrouped data set <input type="checkbox"/> I can draw informal comparative inferences about two populations from random sample

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<p style="text-align: center;"><u>Probability of Simple Events</u></p> <p style="text-align: center;"><i>"I am learning to use random sampling to draw conclusions about a population."</i></p>	Set Notation	<input type="checkbox"/> I can understand that inferences about a population can be made by examining a sample
	Meaning of Probability	<input type="checkbox"/> I can describe, predict, and test the likelihood or outcomes in probability situations <input type="checkbox"/> I can design, compare, predict and test the likelihood of outcomes in probability <input type="checkbox"/> I can use data from a random sampling to draw conclusions about a population (ex: Estimate the mean word length in a book by randomly sampling words from the book.) <input type="checkbox"/> I can develop a uniform probability model and use it to determine the probability of an event occurring <input type="checkbox"/> I can develop a probability model by observing frequencies in data developed from a chance process
	Sample Space	<input type="checkbox"/> I can demonstrate an understanding of probability by determining the sample space <input type="checkbox"/> I can recognize and explain that the probability of a chance event is a number between 0 and 1 that expresses how likely an event is to occur (ex: When rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times.)
<p style="text-align: center;"><u>Probability of Combined Events</u></p> <p style="text-align: center;"><i>"I am learning to use tree diagrams and possibility diagrams to find probabilities of compound events."</i></p>	Probabilities of Simple Combined Events	<input type="checkbox"/> I can find probabilities of multiple events using organized lists, tables, tree diagrams and simulation <input type="checkbox"/> I can identify the outcomes in the sample space for an everyday event
	Mutually Exclusive Events	<input type="checkbox"/> I can determine whether events are mutually exclusive
	Independent Events	<input type="checkbox"/> I can find the probabilities of two or more independent events
	Further Probabilities	<input type="checkbox"/> I can apply what I know about probability to determine probabilities of real-world examples and scenarios