Name:

SAN JUAN DEL SUR DAY SCHOOL
GRADE 8 MATH LEARNING OUTCOMES STUDENT CHECKLIST

UNIT CONCEPT	LESSON TOPIC	LEARNING GOAL
Exponents and Scientific Notation *"I am learning to work with radicals and integer exponents."*	**Positive Exponents and the Laws of Exponents**	☐ I can use the laws of exponents to simplify expressions ☐ I can use the properties of integer exponents to simplify expression
	Zero and Negative Integer Exponents	☐ I can use the properties of integer exponents to simplify expressions
	Fractional Exponents	☐ I can use the radical symbol to devine the nth root of a positive number ☐ I can evaluate and simplify expressions with fractional exponents
	Comparing Exponents	☐ I can compare quantities written as the product of a single-digit number and a power of ten
	Scientific Notation	☐ I can use scientific notation and choose units of appropriate size for very large or very small measurements ☐ I can solve operations (+,-,x,÷) with two numbers expressed in scientific notation, including problems that include both decimals and scientific notation
	Rounding Numbers to a Specified Number of Significant Figures	☐ I can write an estimation of a large quantity by expressing it as the product of a single digit number and a positive power of ten ☐ I can write an estimation of a very small quantity by expressing it as the product of a single-digit number and a negative power of ten
	Estimations and Accuracy of Calculators	☐ I can use estimation to find an approximate answer to a numerical problem ☐ I can use estimation to determine whether or not an answer from a calculator is reasonable ☐ I can understand and explain why the square root of 2 is irrational
Linear Equations in Two Variables *"I am learning to understand the connections between proportional relationships, lines, and linear equations."*	**Linear Equations in Two Variables**	☐ I can solve linear equations in one variable ☐ I can simplify a linear equation by using the distributive property and combining like terms
	Solving Simultaneous Linear Equations in Two Variables Using the Graphical Method	☐ I can give examples of linear equations with one solution, infinitely many solutions or no solutions ☐ I can explain solutions to a system of two linear equations in two variables as the point of intersection of their graph ☐ I can identify cases in which a system of two equations in two unknowns has no solution or an infinite number of solutions
	Solving Simultaneous Linear Equations in Two Variables Using the Substitution Method	☐ I can solve a system of two equations (linear) in two unknowns algebraically using the substitution method
	Solving Simultaneous Linear Equations in Two Variables Using the Elimination Method	☐ I can solve simple cases of systems of two linear equations in two variables by inspection or elimination
	Solving Problems Using Simultaneous Equations	☐ I can analyze and solve pairs of simultaneous linear equations ☐ I can solve real-world and mathematical problems leading to two linear equations in two variables.
Expansion and Factorization of Algebraic Expressions *"I am learning to expand and factor algebraic expressions."*	**Expansion of the Products of Algebraic Expressions**	☐ I can find the product of two single terms in an algebraic expression ☐ I can use the distributive law of multiplication to find the product of two algebraic expressions- e.g. $(a+b)(x+y)$
	Special Products of Algebraic Expressions	☐ I can use perfect squares and the difference of two squares to expand algebraic expressions ☐ I can evaluate arithmetic computations using special products of algebraic expressions
	Factorization by Using Special Products of Algebraic Expressions	☐ I can factorize algebraic expressions, using what I know about the basic formulas and factorization
Quadratic Factorization and Equations *"I am learning to factorize quadratic expressions."*	**Factorization of ax^2+bx+c**	☐ I can identify quadratic equations ☐ I can factorize quadratic expressions of a general case
	Solving Quadratic Equations by Factorization	☐ I can solve quadratic equations by using the factorization method
	Problem Solving Involving Quadratic Equations	☐ I can apply quadratic equations to solve real-world problems ☐ I can check my solutions to see if the condition in the original problem is satisfied

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Simple Algebraic Fractions *"I am learning to simplify and solve algebraic fractions."*	**Simplifying Simple Algebraic Fractions**	☐ I can simplify algebraic fractions
	Multiplication and Division of Algebraic Fractions	☐ I can perform the four operations on algebraic fractions
	Addition and Subtraction of Algebraic Fractions	☐ I can perform the four operations on algebraic fractions
	Fractional Equations	☐ I can use fractional equations to solve real-world problems ☐ I can check the original solutions for the "division by zero" error
	Formulas	☐ I can find the value of an unknown quantity in a formula when the values of the other quantities are given ☐ I can identify the subject of a formula and rewrite a formula to find the value of another unknown
Congruence and Similarity *"I am learning to use my knowledge of polygons to understand the idea of congruence and similarity."*	**Congruence and Reflections**	☐ I can verify by measuring and comparing the properties of rotated, reflected or translated geometric figures ☐ I can verify that corresponding angles have the same measure
	Translations, Rotations, and Combining Transformations	☐ I can describe a sequence of transformations that shows the congruence between two figures ☐ I can explain that a two-dimensional figure is congruent to another if the second figure can be made from the first by rotations, reflections and translations
	Similarity	☐ I can describe a sequence of transformations that either prove or disprove that two figures are similar
	Enlargements and Similarity	☐ I can describe the changes to the x- and y-coordinates of a figure after either dilation, translation, rotation or reflection.
Parallel Lines and Angles in Triangles and Polygons *"I am learning to use the properties of angles to classify and measure polygons."*	**Angles Formed by Parallel Lines and Transversals**	☐ I can use properties of angles to find unknown marked angles
	Interior and Exterior Angles of a Triangle	☐ I can informally prove that the sum of any triangle's interior angles will be the same measure as a straight angle (180 degrees)
	Angle Properties of Special Quadrilaterals	☐ I can informally prove that the sum of any quadrilateral interior angles will be 360 degrees
	Polygons	☐ I can informally prove that the sum of any polygon's exterior angles will be 360 degrees
	Review Day	
	Summative Assessment	
Graphs of Linear and Quadratic Functions *"I am learning to represent the relation between two quantities using functions."*	**Linear Function**	☐ I can graph proportional relationships, interpreting the unit rate as the slope of the graph ☐ I can explain why the equation y=mx+b represents a linear function and then find the slope and y-intercept in relation to the function ☐ I can define a function as a rule, where for each input there is exactly one output ☐ I can give examples of relationships and create a table of values that can be defined as a nonlinear function
	Graphs of Quadratic Equations	☐ I can draw graphs of equations using quadratic functions ☐ I can explain the properties of the graphs of quadratic functions ☐ I can match the graph of a function to a given situation
Graphs in Practical Situations *"I am learning to interpret tables, charts, and graphs in daily life."*	**Tables, Charts, and Graphs**	☐ I can graph proportional relationships, interpreting the unit rate as the slope of the graph ☐ I can use a table, an equation or graph to decide the unit rate of a proportional relationship ☐ I can sketch a graph that exhibits the qualitative features of a function that has been described verbally or written
	Distance-Time Graphs	☐ I can determine the rate of change and initial value of the function from decryption of the relationship of two (x,y) values, including reading a table or graph ☐ I can find the rate of change and initial value of a linear function in terms of the situation it models and in terms of its graph or a table of values
Pythagorean Theorem *"I am learning to measure triangles and determine proofs of the Pythagorean Theorem ."*	**Pythagorean Theorem**	☐ I can use the Pythagorean Theorem to determine if a given triangle is a right triangle ☐ I can apply the Pythagorean Theorem to find an unknown side length of a right triangle
	The Converse of Pythagorean Theorem	☐ I can use algebraic reasoning to relate a visual model to the Pythagorean Theorem
	Applications of Pythagorean Theorem	☐ I can draw a diagram and use the Pythagorean Theorem to solve real world problems involving right triangles ☐ I can draw a diagram to find right triangles in a three-dimensional figure and use the Pythagorean Theorem to calculate various dimensions

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Coordinate Geometry *"I am learning to use algebraic methods for geometric problems."*	**Distance Between Two Points**	☐ I can apply the Pythagorean Theorem to find the distance between two points in a coordinate system
	Slope of a Straight Line	☐ I can interpret the slope (rate of change) and model the intercept (constant term) of a linear model in the context of the data ☐ I can use similar triangles to explain why the slope m is the same between two points on a non-vertical line in a coordinate plane
	Equation of a Straight Line	☐ I can recognize that the graphical representation of an equation in two variables is a curve, which may be a straight line ☐ I can explain that an equation in the form of $y=mx$ will represent the graph of a proportional relationship with a slope of m and y-intercept of 0
Mensuration of Pyramids, Cylinders, Cones and Spheres *"I am learning to use formulas to find the volumes and surface areas of different solids."*	**Pyramids**	☐ I can state and apply the formulas for the volumes of pyramids ☐ I can solve real world problems involving the volume of pyramids
	Volume and Surface Area of a Cylinder	☐ I can state and apply the formulas for the volumes of cylinders ☐ I can solve real world problems involving the volume of cylinders
	Cones	☐ I can state and apply the formulas for the volumes of cones ☐ I can solve real world problems involving the volume of cones
	Spheres	☐ I can state and apply the formulas for the volumes of spheres ☐ I can solve real world problems involving the volume of spheres
Data Analysis *"I am learning to collect, organize and interpret data, using various graphs and charts."*	**Organizing Data in Frequency Tables**	☐ I can create and explain a two-way table to record the frequencies of bivariate categorical values
	Bar Graphs	☐ I can determine the relative frequencies for rows and/or columns of a two-way table ☐ I can use relative frequencies and the context of a problem to describe possible associations between two sets of data
	Histograms	☐ I can construct a histogram to represent a given set of data
	Lines Graphs	☐ I can construct a line graph to represent a given set of data
	Scatter Plots	☐ I can construct a scatter plot to represent a given set of data ☐ I can recognize if the data plotted on a scatter plot has a linear association ☐ I can, using given scatter plot data represented on the coordinate plane, informally describe how the two quantitative variables are related ☐ I can recognize possible associations and trends in the data
More About Quadratic Equations *"I am learning to solve quadratic equations by using different methods."*	**Solving Quadratic Equations by Factorization**	☐ I can solve quadratic equations by factorization
	Completing the Square Method	☐ I can use the method of completing the square to transform any quadratic equation in x into an equation of the form $(x-p)2 = q$ that has the same solutions
	Quadratic Formula	☐ I can solve quadratic equations using the quadratic formula
	Graphical Method	☐ I can solve quadratic equations by completing the square
	Applications of Quadratic Equations	☐ I can solve quadratic equations by inspection (e.g., for x2 = 49), taking square roots, completing the square, the quadratic formula, and factoring ☐ I can choose an appropriate method for solving the equation ☐ I can construct a viable argument to justify a solution method