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Math Lesson Plan
8th Grade Curriculum
Total Activities: 345

Chapter -"Number Systems"-This chapter addresses rational and irrational numbers, absolute value and scientific notation.		
Lesson Code	Lesson Title and Description	LA Number
1	Scientific Notation-Express numbers between zero and one in scientific notation.	M8001 M8002
2	Rational and Irrational Numbers-Identify rational and irrational numbers and describe meanings.	M8003 M8004
3	Absolute Value-Identify and explain absolute value.	M8005 M8006 M8007 M8008 M8009 M8010
Chapter -"Real Numbers"-This chapter addresses repeating decimals, principal square roots, estimation and simplification of expressions.		
Lesson Code	Lesson Title and Description	LA Number
1	Repeating Decimals to Fractions-Convert repeating decimals to fractions.	M8011 M8012 M8013

		M8014 M8015 M8016
2	Roots-Calculate and approximate principal square roots.	M8017 M8018 M8019 M8020 M8021 M8022
3	Compare and Order-Compare and order numbers in many forms including: fractions, decimals, scientific notation, absolute value, and radicals.	M8023 M8024 M8025 M8026 M8027 M8028
4	Estimation-Use estimation for situations using real numbers.	M8029 M8030
5	Properties-Apply properties to solve problems with real numbers.	M8031 M8032
6	Real Number Operations-Simplify numerical expressions with real numbers.	M8033 M8034 M8035 M8036 M8037 M8038

Chapter -"Number Theory"-This chapter addresses representing numbers in binary and octal, divisibility rules and the concept of relatively prime.

Lesson Code	Lesson Title and Description	LA Number
1	Divisibility Rules-Use divisibility rules to solve problems.	M8039 M8040
2	Multiple Representations-Represent numbers in base ten in other bases (two, five, and eight) and vice versa.	M8041 M8042
3	Prime and Composite-Identify numbers as relatively prime.	M8043 M8044 M8045

		M8046 M8047 M8048

Chapter -"Ratio, Proportion and Percent"-This chapter addresses rate of change and proportional relationships.

Lesson Code	Lesson Title and Description	LA Number
1	Rate of Change-Describe and use rate of change to solve problems.	M8049 M8050 M8051 M8052 M8053 M8054
2	Proportions-Use proportional relationships to find measures of length, weight or mass, and capacity or volume.	M8055 M8056
3	Percents-Solve real world problems involving percents greater than 100.	M8057 M8058 M8059 M8060 M8061 M8062

Chapter -"Real World Computation"-This chapter addresses real world problems (one-, two- and multi-step problems).

Lesson Code	Lesson Title and Description	LA Number
1	Operations-Solve real world problems with rational numbers (including integers, decimals and fractions).	M8063 M8064 M8065 M8066 M8067 M8068
2	Real World Problems-Solve real world problems with ratios, rates, proportions, and percents.	M8069 M8070 M8071 M8072 M8073 M8074

3	Multi-Step Problems-Solve real world two- or three- step problems with integers, decimals, fractions, ratios, rates, proportions, and percents.	M8075 M8076 M8077 M8078 M8079 M8080

Chapter -"Expressions and Equations"-This chapter addresses substitution, translation, and evaluation as well as solving linear inequalities.

Lesson Code	Lesson Title and Description	LA Number
1	Expressions-Substitute rational numbers into expressions and evaluate.	M8081 M8082 M8083 M8084 M8085 M8086
2	Expressions with Exponents-Substitute rational numbers into expressions with exponents and radicals.	M8087 M8088 M8089 M8090 M8091 M8092
3	Expressions and Equations-Translate word expressions and equations into algebraic expressions and equations (including one or more variables and exponents).	M8093 M8094 M8095 M8096 M8097 M8098
4	Expressions, Equations, and Inequalities-Translate verbal expressions and sentences into algebraic inequalities and vice versa.	M8099 M8100
5	Real World Expressions-Use variables to represent unknown quantities in real world situations.	M8101 M8102
6	Simplify-Combine and simplify algebraic expressions with a maximum of two variables.	M8103 M8104 M8105 M8106

Lesson Code	Lesson Title and Description	LA Number
		M8107 M8108
7	Substitution-Evaluate algebraic expressions and equations by substituting integral values for variables and simplifying.	M8109 M8110
8	Inequalities-Solve linear inequalities in one variable algebraically.	M8111 M8112 M8113 M8114 M8115 M8116

Chapter -"Plane Geometry"-This chapter addresses the Pythagorean Theorem, transformations, congruence, parallel and perpendicular.		
Lesson Code	Lesson Title and Description	LA Number
1	Geometric Properties-Use properties of parallelism, perpendicularity, and symmetry to solve real world problems.	M8117 M8118
2	Polygons-Compare and describe properties of convex and concave polygons.	M8119 M8120
3	Pythagorean Theorem-Apply the Pythagorean theorem to solve real world problems.	M8121 M8122 M8123 M8124 M8125 M8126
4	Congruent and Similar-Identify congruence and similarity in real world situations and justify.	M8127 M8128 M8129 M8130 M8131 M8132
5	Transformations-Identify and perform transformations (reflection, translation, rotation, and dilation) of a figure on a coordinate plane.	M8133 M8134 M8135 M8136

Lesson Code	Lesson Title and Description	LA Number
		M8137 M8138
6	Proportional Relationships-Identify how changes in dimensions affect area and perimeter.	M8139 M8140 M8141 M8142 M8143 M8144
7	Explore Reflection/Translation-Use the Transformation tool to investigate reflections and translations.	M8501
8	Explore Rotations-Use the Transformation tool to investigate rotations.	M8502
9	Explore Dilation-Use the Transformation tool to investigate dilation.	M8503
10	Explore Transformations-Use the Transformation tool to investigate multiple transformations.	M8504

Chapter -"Three-Dimensional Geometry"-This chapter addresses the volumes and surface areas of three-dimensional shapes.

Lesson Code	Lesson Title and Description	LA Number
1	Volume-Find the volume of pyramids, prisms, and cones.	M8145 M8146 M8147 M8148 M8149 M8150
2	Surface Area-Find the surface area of pyramids, prisms, and cones.	M8151 M8152
3	Regular and Irregular Polygons-Compare regular and irregular polygons.	M8153 M8154 M8155 M8156 M8157

		M8158
4	Angle Measure-Find the angle measure in two-dimensional figures and two-dimensional sides of three-dimensional figures based on geometric relationships.	M8159 M8160 M8161 M8162 M8163 M8164
5	Proportional Relationships-Identify the relationship between volume or surface area and dimension.	M8165 M8166 M8167 M8168 M8169 M8170

Chapter -"Measurement"-This chapter addresses scale, estimation and significant digits.

Lesson Code	Lesson Title and Description	LA Number
1	Scale-Interpret and apply various scales including number lines, graphs, models, and maps.	M8171 M8172
2	Estimation-Select tools to measure quantities and dimensions to a specified degree of accuracy and determine the greatest possible error of measurement.	M8179 M8180
3	Significant Digits-Identify the number of significant digits as related to the least precise unit of measure and apply to real world contexts.	M8181 M8182 M8183 M8184 M8185 M8186

Chapter -"Graphing"-This chapter addresses graphing linear equalities and inequalities.

Lesson Code	Lesson Title and Description	LA Number
1	Tables and Ordered Pairs-Use a table to find ordered pair solutions of a linear equation in slope-intercept form.	M8187 M8188

Lesson Code	Lesson Title and Description	LA Number
2	Equations to Lines-Graph linear equations in standard form.	M8189 M8190 M8191 M8192 M8193 M8194
3	Linear Inequalities-Identify and graph inequalities on a number line.	M8195 M8196 M8197 M8198 M8199 M8200
4	Inequalities-Identify and graph inequalities in the coordinate plane.	M8201 M8202
5	Applications of Linear Inequalities-Solve problems in two variables using linear inequalities.	M8203 M8204
6	Explore Inequalities I-Use the Number Line tool to investigate linear inequalities in one variable.	M8500
7	Explore Inequalities II-Use the Coordinate Graphing tool to investigate linear inequalities in two variables.	M8507
8	Explore Linear Programming-Use the Coordinate Graphing tool to investigate linear programming.	M8510

Chapter -"Linear Relationships"-This chapter addresses x- and y-intercepts, slope and determining if a function is linear.

Lesson Code	Lesson Title and Description	LA Number
1	x- and y- Intercepts-Given the graph of a linear relationship, determine the x- and y- intercepts.	M8205 M8206
2	Slope of a Line-Given the graph of a line, determine the slope.	M8207 M8208 M8209 M8210 M8211

		M8212
3	Write Equations in Slope-Intercept Form-Given the slope and y-intercept, write an equation.	M8213 M8214
4	Find a Function Rule-Find a function rule to describe a linear relationship using tables of related input-output variables.	M8215 M8216 M8217 M8218 M8219 M8220
5	Determine if a Function is Linear-Using information from a table, graph, or rule, determine if a function is linear and justify.	M8221 M8222 M8223 M8224 M8225 M8226
6	Explore Linear Relationships-Use the Coordinate Graphing tool to investigate problems about linear relationships.	M8272
7	Explore Slope-Intercept Form-Use the Coordinate Graphing tool to investigate the slope-intercept form of a line.	M8506
8	Explore Reflections of Lines-Use the Coordinate Graphing tool to investigate reflections of lines.	M8508
9	Explore Linear/Nonlinear-Use the Coordinate Graphing tool to investigate linear and nonlinear relationships.	M8509

Chapter -"Probability"-This chapter addresses conditional probability and sampling.		
Lesson Code	Lesson Title and Description	LA Number
1	Conditional Probability-Calculate conditional probabilities and the probabilities of dependent events.	M8227 M8228 M8229 M8230 M8231 M8232

Lesson Code	Lesson Title and Description	LA Number
2	Sampling Techniques-Define and differentiate between different types of sampling techniques.	M8233 M8234
3	Apply Sampling-Use different types of sampling techniques to collect data.	M8235 M8236
4	Sample Bias-Identify whether a sample is biased.	M8237 M8238 M8239 M8240 M8241 M8242
5	Explore Probability I-Use the Probability tool to investigate the difference between experimental and theoretical probability on number cubes and spinners.	M8512
6	Explore Probability II-Use the Probability tool to investigate conditional probability with marbles.	M8513

Chapter -"Data and Statistics"-This chapter addresses different data representations and the measures of central tendency.

Lesson Code	Lesson Title and Description	LA Number
1	Data Representations-Interpret circle, line, bar, histogram, stem-and-leaf, and box-and-whisker graphs including how different displays lead to different interpretations.	M8243 M8244 M8245 M8246 M8247 M8248
2	Statistics-Identify and explain how statistics and graphs can be used in misleading ways.	M8249 M8250 M8251 M8252 M8253 M8254
3	Mean, Median and Mode-Determine appropriate measures of central tendency for a given situation or set of	M8255 M8256 M8257

		M8258 M8259 M8260
4	Technology-Use technology to determine the mean, median, mode, and range of a set of real world data.	M8261 M8262
5	Explore Central Tendency-Use the Data Representation tool to investigate the mean, median, mode and range in various types of data sets.	M8514
6	Explore Statistical Plots-Use the Data Representation tool to investigate stem-and-leaf and box-and-whisker plots.	M8515
7	Explore Scatterplots-Use the Coordinate Graphing tool to investigate scatterplots and relationships between variables.	M8511

Chapter -"Practice"-This chapter contains additional practice activities.

Lesson Code	Lesson Title and Description	LA Number
21	Add/Subtract Integers-Review positive and negative values and the number line. Determine absolute value. Add and subtract positive and negative integers. Use equivalent expressions to subtract positive and negative integers.	8059 8101 8235
22	Divisibility -Learn and apply the rules of divisibility. Determine divisibility.	8060 8102 8232
23	Multiply/Divide Integers-Recognize multiplication on a number line. Review rules for signs of products and quotients. Multiply and divide positive and negative integers. Multiply more than two integers. Investigate the commutative property, the multiplicative property of 0, the distributive property, and the	8061 8103 8236

	associative property.	
24	Integers as Exponents-Review the rules for signs in exponential expressions. Identify base and exponent. Evaluate expressions with positive and negative bases. Evaluate expressions with positive and negative exponents. Convert between negative exponents and fractions.	8062 8104 8237
25	Use Powers of Ten -Multiply and divide by powers of ten. Use exponents for powers of ten. Multiply by decimal powers of ten. Apply mental math.	8063 8105 8231
26	Solve Using Add/Subtract -Identify inverse operations. Use addition and subtraction to solve equations. Solve equations with negative numbers. Check work by substituting a solution for the unknown.	8064 8106 8238
38	Rational Numbers Properties -Learn the definition of a rational number. Complete equations. Learn properties of addition and multiplication.	8065 8107 8242
12	Squares and Square Roots -Calculate squares and square roots. Find the principal and negative square roots. Estimate square roots.	8066 8108 8255
27	Multiply Mixed Numbers-Learn and apply steps to multiply fractions. Convert mixed numbers to improper fractions. Use shortcuts with multiplication.	8067 8109 8247
28	Divide Mixed Numbers-Learn and apply steps to divide whole numbers and mixed numbers. Convert mixed numbers to improper fractions. Divide using reciprocals. Simplify answers.	8068 8110 8233
29	GCF and LCM-Identify prime factors. Determine the greatest common factor (GCF) and the least common multiple	8069 8111 8241

	(LCM).	
30	Estimate by Rounding Decimals-Learn and apply methods of estimation. Estimate sums, differences, products, and quotients.	8070 8112 8230
31	Add/Sub Decimals & Fractions-Use absolute value to add decimals. Add fractions using the least common denominator (LCD). Subtract by adding the opposite value. Apply rules for signs.	8071 8113 8243
3	Percents, Fractions, Decimals-Convert percents, fractions, and decimals. Convert complex percents to decimals and fractions.	8072 8114 8245
32	Percent Proportions-Set up and solve percent proportions. Use shortcuts with common fractions.	8073 8115 8246
33	Sales Tax and Discount -Set up proportions. Calculate discount, sale price, sales tax, and total cost.	8074 8116 8248
34	Percent of Increase/Decrease-Learn to calculate the amount of increase or decrease. Set up proportions. Calculate percent increase or decrease.	8075 8117 8249
35	Ratio, Rate, and Proportion-Understand ratios, rates, and proportions. Use proportions to solve word problems. Find the unit rate.	8076 8118 8244
47	1-Step Add/Sub Word Problems-Use a 5-step strategy for solving word problems. Add and subtract whole numbers and decimal numbers.	8077 8119
19	Surface Area: Pyramids & Cones-Calculate the surface area of square pyramids, rectangular pyramids, and cones.	8088
6	Solve Using Multiply/Divide-Identify	8078

	inverse operations. Use multiplication and division to solve equations. Use reciprocals to solve equations with fractions. Check work by substituting a solution for the unknown.	8120 8239
1	Solve 2-Step Equations-Determine the order of operations for two-step equations. Solve two-step equations.	8079 8121 8240
13	Graph Sentences-Solve and graph single and compound inequalities. Reverse the sign when multiplying and dividing by a negative number.	8080 8122 8264
48	Graph Linear Equations-Learn the steps to graph equations. Find x- and y-values. Write ordered pairs. Graph equations on the coordinate plane.	8081 8123 8265
36	Graph Inequalities-Learn to graph inequalities with lines and shading. Solve inequalities. Identify ordered pairs. Plot ordered pairs and shade. Graph inequalities. Recognize correct lines and shading.	8082 8124 8266
15	Lines and Angles-Identify angle relationships. Calculate angle measurements.	8083 8125 8250
37	Polygons-Recognize regular and irregular polygons. Identify types of quadrilaterals. Find the sum of interior angles. Find interior angles in a regular polygon.	8084 8126 8251
14	Congruent/Similar Figures-Define congruence and similarity. Identify corresponding vertices, sides, and angles. Find missing measures for congruent and similar figures.	8085 8127 8252
16	Perimeter and Area-Learn the formulas for the area of rectangles, parallelograms, triangles, and trapezoids. Calculate perimeter and area.	8086 8128 8253

17	Circles: Circumference & Area-Learn the characteristics of circles. Learn the formulas for circumference and area. Calculate circumference, diameter, radius, and area.	8087 8129 8254
18	Surface Area: Prisms/Cylinders-Calculate the surface area of cubes, prisms, and cylinders. Investigate faces and edges.	8089
7	Volume of Prisms and Cylinders-Learn the formulas for the volume of prisms and cylinders. Calculate the volume of prisms and cylinders. Find the area of the base or the height.	8090
9	Volume of Pyramids and Cones-Recognize types of pyramids. Learn the formulas for the volume of pyramids and cones. Calculate the volume of pyramids and cones.	8091
2	Pythagorean Theorem-Learn to apply the Pythagorean theorem. Calculate the length of the hypotenuse or the legs. Determine whether given measurements form a right triangle. Determine Pythagorean triples.	8092 8130 8256
20	Special Right Triangles-Calculate the hypotenuse and leg measurements of special right triangles.	8093 8131 8257
4	Circle Graphs-Determine central angles. Use proportions to determine percentages. Interpret graphs.	8094 8132 8234
10	Histograms-Create frequency charts and histograms. Interpret data from histograms.	8095 8133 8258
39	Scatter Plots-Create scatter plots. Determine correlation. Predict correlation without plotting.	8096 8134 8261
49	Stem-and-Leaf Plots-Create stem-and-leaf plots. Interpret plots. Find mode	8097 8135

	and median. Use double plots.	8259
11	Box-and-Whisker Plots -Identify extremes, quartiles, median, and range of an ordered set. Graph box-and-whisker plots. Interpret plots. Compare two sets of data.	8098 8136 8260
40	Probability of Events-Recognize dependent and independent events. Calculate the probability of single and compound independent events. Calculate the probability of dependent events.	8099 8137 8262
41	Combinations and Permutations - Determine expressions for permutations and combinations. Learn factorial notation. Calculate permutations and combinations.	8100 8138 8263
42	Number Combinations -Review strategies to solve a problem. Solve a problem using all possibilities, a table, and patterns.	8139
43	Number Expansion -Review strategies to solve a problem. Solve a problem using a simpler problem, drawings, a table, and patterns.	8140
44	Number Sequences-Review strategies to solve a problem. Solve a problem by finding a pattern and guessing.	8141
45	Area-Review strategies to solve a problem. Solve a problem by using a table, drawings, and guessing.	8142
46	Probability-Solve a problem using a table.	8143