Greenwood Lake UFSD Math Learning Expectations/Mastery

Grade	Math
Kindergarten	• **Grade Level Fluencies:** Add and subtract within 5 • **Geometry:** Identify and describe 2D and 3D shapes (e.g., circles, spheres, cone, cube), Analyze, compare, create, and compose shapes • **Counting and Cardinality:** Know number names and the counting sequence ● Count to tell the number of objects ● Compare numbers Operations and Algebraic Thinking: ● Understand addition as putting together and adding to ● Understand subtraction as taking apart and taking from • **Number and Operations in Base Ten:** ● Work with the numbers 11-19 to gain foundations for place value • **Measurement and Data:** ● Describe and compare measurable attributes ● Classify objects and count the number of objects in each category
1st Grade	• **Grade Level Fluencies**: Add and subtract within 10 • **Geometry:**Reason with shapes and their attributes • **Operations and Algebraic Thinking**: Represent and solve problems involving addition and subtraction ● Can identify partners to ten to use for addition and subtraction ● Understand and apply properties of operations ● Add and subtract within 100 ● Demonstrate understanding of addition and subtraction equations • **Number and Operations in Base Ten:** Count up to 120 ● Use understanding of place value and properties of operations to add, subtract using strategies ● Is able to compare two digit numbers • **Measurement and Data**: Measure lengths using repeated objects as units ● Make measurements using nonstandard units and standard metric units ● Tell and write time to the nearest half hour ● Recognize and identify coins, their names, and their values ● Represent and interpret data
2nd Grade	• **Grade Level Fluencies:** Add and subtract within 20; add and subtract within 100 (pencil and paper) • **Geometry:** Reason with shapes and their attributes • **Operations and Algebraic Thinking:** Represent and solve problems involving addition and subtraction ● Understand and apply properties of operations ● Add and subtract within 20 ● Work with equal groups of objects to gain foundations for multiplication • **Number and Operations in Base Ten:** Count, read, write and compare numbers within 1000 ●Use understanding of place value to add & subtract • **Measurement and Data:** Measure and estimate lengths in standard units ● Relate addition and subtraction to length ●Tell time from a digital and analog clock ● Represent and interpret data
3rd Grade	• **Grade Level Fluencies:** Multiply and divide within 100; add and subtract within 1000 • **Geometry:** Reason with shapes and their attributes

	• **Operations and Algebraic Thinking:** Represent and solve problems involving multiplication and division ● Know multiplication properties, the relationship between multiplication/division; ● Multiply and divide within 100 ● Solve problems involving the four operations ● Explain arithmetic patterns • **Number and Operations in Base Ten:** Perform multi-digit arithmetic using knowledge of place value, properties of operations Number and Operations (Fractions) ● Develop understanding of fractions as numbers • **Measurement and Data:** Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects ● Represent and interpret data ● Geometric measurement: understand concepts of area; relate area to multiplication, addition ● Recognize perimeter as an attribute of plane figures ● Distinguish between linear and area measures
4th Grade	• **Grade Level Fluencies:** Add and Subtract within 1,000,000 • **Geometry:** Draw, identify lines & angles; classify shapes by properties of lines & angles **Operations and Algebraic Thinking:** ● Use the four operations with whole numbers to solve problems ● Gain familiarity with factors and multiples ● Generate and analyze patterns • **Number and Operations in Base Ten:** ● Generalize place value understanding for multi-digit whole numbers ● Perform multi-digit arithmetic using knowledge of place value & operations properties • **Number and Operations (Fractions):** ● Extend understanding of fraction equivalence and ordering ● Build fractions from unit fractions ● Understand decimal notation for fractions, and compare decimal fractions • **Measurement and Data:** ● Solve problems involving measurement and conversion of measurements ● Represent and interpret data ● Geometric measurement: measure and understand concepts of angle
5th Grade	• **Grade Level Fluencies:** Multi-digit multiplication • **Geometry:** ● Graph points on the coordinate plane to solve problems ● Classify two-dimensional figures into categories based on their properties • **Operations and Algebraic Thinking**: ● Write and interpret numerical expressions ● Analyze patterns and relationships • **Number and Operations in Base Ten:** ● Understand the place value system ● Perform operations with multi-digit whole numbers & decimals to hundredths • **Number and Operations (Fractions):** ● Use equivalent fractions as a strategy to add and subtract fractions ● Extend understanding of multiplication & division to multiply & divide fractions **Measurement and Data:** ● Convert like measurement units within a given measurement system ● Represent and interpret data ● Geometric measurement: understand concepts of volume; relate volume to multiplication and addition ●
6th Grade	• **Grade Level Fluencies:** Multi-digit multiplication/division; Multi-digit decimal operations, • **Operations with fractions Ratios and Proportional Relationships:** ● Understand ratio concepts & use ratio reasoning to solve problems ● Find a percent of a quantity as a rate per 100 The

	• **Number System:** ● Apply & extend previous understandings of multiplication & division to divide fractions by fractions ● Compute fluently with multi-digit numbers & find common factors and multiples to problem solve ● Extend understanding of numbers to the system of rational numbers • **Equations and Expressions:** ● Extend previous understandings of arithmetic to algebraic expressions ● Reason about and solve one-variable equations and inequalities ● Use variables to represent and analyze quantitative relationships • **Geometry:** ● Solve real-world & math problems involving area, surface area, & volume • **Statistics and Probability:** ● Develop an understanding of how data varies by how it is collected, displayed, and distributed ● Display and summarize numerical data in various formats
7th Grade	• **Ratios and Proportional Relationships:** Analyze proportional relationships and use them to solve real-world and mathematical problems. • **The Number System:** Extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers • **Equations and Expressions:** Use properties of operations to generate equivalent expressions. ● Solve real-life and mathematical problems using numerical and algebraic expressions and equations. • **Geometry:** Solve real-life and mathematical problems involving angle measure, area, surface area, and volume. • **Statistics and Probability:** Solve problems involving probability ● Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.
8th Grade	• **Grade Level Fluencies:** Solve 2x2 systems by inspection • **The Number System:** Approximate irrational numbers by rational numbers • **Equations and Expressions:** ● Work with radicals and integer exponents ● See connections between proportional relationships, lines, & linear equations ● Analyze and solve linear equations and pairs of simultaneous linear equations • **Geometry:** ● Understand congruence and similarity ● Understand and apply the Pythagorean Theorem ● Solve real-world problems involving volume of cylinders, cones spheres • **Statistics and Probability:** ● Recognize a line of best fit for a data presented in a scatterplot ● Read and interpret a 2 way table • **Functions:** ● Define, evaluate and compare functions ● Use functions to model relationships between quantities