

The scope and sequence document is provided to help districts as they align MathScape units specific district and state learning goals.

Grade 6 units	Acronym	Grade 7 units	Acronym	Grade 8 units	Acronym
What Does the Data Say?	WDDS	Buyer Beware	BB	Looking Behind the Numbers	LBN
The Language of Numbers	LON	Chance Encounters	CE	Mathematics of Motion	MOM
From Wholes To Parts	FWTP	Making Mathematical Arguments	MMA	Shapes and Space	S&S
Designing Spaces	DS	From the Ground Up	FTGU	What Comes Next?	WCN
Beside the Point	BTP	The Language of Algebra	LOA	Exploring the Unknown	ETU
Gulliver’s World	GW	Getting Down to Business	GDTB	Roads & Ramps	R&R
Patterns in Numbers and Shapes	PNS	Getting in Shape	GIS	Family Portraits	FP

The depth of coverage is coded as follow:

D: Developing conceptual understanding

I: Investigation

R: Skill reinforced and reapplied

Algebra - Variables & Equations

	Grade 6		Grade 7		Grade 8	
	Unit/lesson	Depth	Unit/lesson	Depth	Unit/lesson	Depth
Introduce conventions for algebraic notation	PNS/L5	D				
Evaluate algebraic expressions			GDTB/L1-12 LOA/L1-12	R I	ETU/L2 FP/L1-12	I I
Write algebraic expressions using variables	PNS/L2-6; 8-12	I	GDTB/L 3-12 LOA/L1-12	I I	WCN/L5-12 SS/L 4-12 MOM/L1 ETU/L1-12 FP/L1-12	I R I I I
Identify and use the symbols for inequality	FWTP/Phase 2	R	LOA/L2,4,10	R		
Write linear equations from given information	PNS/L2-6, 8-12	D	LOA/L2,4,10	I	FP/L2-12	I
Demonstrate an ability to solve linear equations, using hands-on activities, trial and error, and non-standard algorithms	PNS/L2-6; 8-12	I	LOA/L10-11	I	ETU/L9-12 MOM/L10-11 FP/L1-12	I I I
Demonstrate an ability to solve linear equations, using standard algorithms	PNS/L2-6; 8-12	D	LOA/L 11	I	ETU/L9-12	I
Know and apply algebraic procedures for solving inequalities			LOA/L10	I		
Solve multi-step equations in one variable	PNS/L2-6; 9-12	D	LOA/L11-12	I	ETU/L9-12	I
Develop and use rules for determining when two expressions are equivalent.	PNS/L4-5	D	LOA/L 3	I	ETU/L3-4; 9-12	I
Communicate mathematical findings in a report.			GDTB/L 12	I	WCN/L 12	I
Use inverse operations to solve problems	PNS/L2-5; 9-12	D	LOA/L11-12 investigation	I	RR/L5-9 ETU/L1-12	I I
Identify variables as an unknown quantity	PNS/L1-12	D	LOA/L1-12	D	ETU/L1-12	I
Simplify expressions	PNS/L1-12	D	LOA/L1-12	D	ETU/L1-12	I
Work with formulas			LOA/L7	I		

Algebra - Coordinate Graphing (see also Patterns and Functions)

	Grade 6		Grade 7		Grade 8	
	Unit/lesson	Depth	Unit/lesson	Depth	Unit/lesson	Depth
Set appropriate scales on coordinate graphs.	PNS/L9	D	GDTB/L7-9 LOA/L5-8 BB/L2	R I I	WCN/L7-8 MOM/L3-12 LBN/L6-7 ETU/L12 FP/L2-12	R I I R I
Identify and graph ordered pairs in the four quadrants of a coordinate plane	PNS/L7-8	I	LOA/L5-8	I	FP/L2-12	I
Understand the relationship between a linear equation and its graph, including the concepts of slope and y-intercept	PNS/L9-12	D	LOA/L1-12	D	FP/L4-6 MOM/L1-12	I D
Understand and apply the definition of slope as the ratio of rise to run.					RR/L7-12 FP/L4-6	I I
Understand how percent grade is used to describe a slope.					RR/L9-12	I
Graph a linear equation in two variables on the coordinate plane, using a table of ordered pairs	PNS/L 8,9,11,12	D	LOA/L5-8	I	ETU/L12 FP/L2-12	R I
Graph a linear equation in two variables on the coordinate plane, using the slope and y-intercept.	PNS/L6,9	D			FP/L4-6	I
Use graphs to compare and analyze linear and exponential growth	PNS/L9-12	D			WCN/L7-12 FP/L10	I I
Interpolate and extrapolate data values using various methods					WCN/L1-12 MOM/L4,11	I I
Relate qualitative and quantitative graphs.			GDTB/L9	I	MOM/L5-8	I
Use graphs to make recommendations.	PNS/L12	I	GDTB/L7-9	I	LBN/L8	I

			LOA/L12 RR/L2	I I	ETU/L12	I
Combine information from different types of graphs.			GDTB/L9	I	MOM/L8-12	I
Create and interpret distance-time graphs.					MOM/L3-12	I
Create and interpret scatter plots					LBN/L5-8	I
Use correlations to interpret scatter plots and draw conclusions					LBN/L5-8	I
Draw a line of best fit on a scatter plot and use it to make predictions					LBN/L7-8	I
Write equations and make graphs of direct variation functions.			LOA/L12	I	MOM/L3 FP/L2	I I
Understand that the slope of a time distance graph indicates speed.					MOM/L3-12	I
Find patterns then generalize to an algebraic expression					ETU/L2,4,8	I
Write equations and make graphs of inverse variation					FP/L3	I
Graph quadratic equations					FP/L7-8	I

Algebra - Multiple Representations

	Grade 6		Grade 7		Grade 8	
	Unit/lessons	Depth	Unit/lessons	Depth	Unit/lesson	Depth
Represent situations and number patterns with tables, graphs, verbal rules, and equations and explore the interrelationships of these representations	PNS/L1-12	I	LOA/L1-12	I	WCN/L1-12 S&S/L4-12 ETU/L1-12 FP/L1-12	I R I I
Use tables to compare and analyze linear and exponential growth	PNS/L2-6, 8-12	D	LOA/L4	I	WCN/L1-12	I

Understand slope as an angle, slope as a ratio, and the connection between these ideas					RR/L7-9	I
Compare equations and graphs that represent direct variation and inverse variation					FP/L2-3	I
Use the area model of multiplication to multiply algebraic expressions.					ETU/L3	I
Interpret stories to create graphs and interpret graphs to create stories			LOA/L2, 10	I	MOM/L5-12	I
Graph inequalities on a number line						

Algebra - Patterns and Functions (see also Coordinate Graphing)

	Grade 6		Grade 7		Grade 8	
	Unit/lessons	Depth	Unit/lesson	Depth	Unit/lesson	Depth
Describe and extend numerical patterns	PNS/L1-6, 9-12	I	LOA/L3 MMA/L5, 9	I I	WCN/L1-12 ETU/L2, 4, 8 FP/L1-12	I I I
Describe and extend geometric patterns			LOA/L3	I	WCN/L3-2 ETU/L4, 8	I I
Use patterns and functions to represent and solve problems	PNS/L 2-6, 8-12	I	LOA/L3, 9	I	WCN/L5 FP/L1-12	I I
Analyze functional relationships to explain how a change in one quantity results in a change in another	PNS/L2-6, 8-12	I	LOA/L1-12 GDTB/L7-9	I I	MOM/L5-12 FP/L1-12	I I
Determine whether or not a graph represents a function					MOM/L5-12 FP/L1-12	I I
Recognize real-world examples of functions			GDTB/L7-9 LOA/L4,8,9,12	I I	MOM/L5-12 FP/L9	I I
Compare the equations and graphs of linear, exponential and	PNS L/ 11,12	I			FP/L7,8	I

quadratic functions						
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Algebra - Properties

	Grade 6		Grade 7		Grade 8	
	Unit/lesson	Depth	Unit/lesson	Depth	Unit/lesson	Depth
Commutative	FWTP/P1	I	LOA/L3	I		
Associative	FWTP/L5	I				
Distributive	PNS/L5 FWTP/L5	D I	LOA/L3	I	ETU/L3-12	I
Additive Identity					ETU/L5,6	I
Multiplicative identity						
Additive inverse			MMA P1	I		
Multiplicative inverse			LOA/L3	I		
Multiplicative property of zero						

Number - Computation & Estimation

	Grade 6		Grade 7		Grade 8	
	Unit/lesson	Depth	Unit/lesson	Depth	Unit/lesson	Depth
Read large numbers up to hundred billions						
Practice computation with whole numbers	WDTDS/L1-12 FWTP/L1-12	R R	GDTB/L1-12 LOA/L1-12	R R	LBN/L1-8	R
Reason about inverse operations	PNS/L5, 9-12 FWTP/L1-12	I I	LOA/L3-12 MMA P1	I R	WCN/L1-12 LBN/L3	R I

Write and calculate values of arithmetic expressions	FWTP/L1-5 LON L3	R I	LOA/L1-9	I		
Write equivalent arithmetic expressions	FWTP/L1-5	R				
Use expanded notation to show how numbers are composed	LON L3,6,7	I				
Use and explain the area model for multiplication	FWTP/L1,15-16	I			ETU/L3	I
Understand the customary order of operations, and use it to evaluate expressions	FWTP/L4-5	I	GDTB/L4-12	R		
Use rounding to estimate	BTP L4	R				
Estimate to check the reasonableness of results of computations and problems involving rational numbers	FWTP/L1-20	I			WCN/L1-12	R
Demonstrate how basic operations are related to each other	PNS/L1-12	R	MMA PI&2	R	WCN/L1-12	R
Select and use an appropriate method for computing from among mental arithmetic, paper-and-pencil, calculator, and computer methods					WCN/L1-12	R
Compare addition and multiplication growth numbers					WCN/L1-12	I
Use different representations to show addition and subtraction of integers	BTP P4	I	MMA/L1-8	I	ETU/L5-12	I
Use formulas	PNS/L2-6, 8-12	R	LOA, GDTB, GIS, FTGU		S&S, MOM, R&R	

Number - Consumer Applications

	Grade 6		Grade 7		Grade 8	
	Unit/lesson	Depth	Unit/lesson	Depth	Unit/lesson	Depth
Solve consumer application problems involving tips, discounts, sales tax, simple interest	BTP/P3	D	BB/L11-12	I		
Calculate and compare cost-per-unit			BB/L1-12	I		
Explore the relationship between profit, income, and expenses			GDTB/L1-12	I		

			LOA/ L4	I	
Use what – if questions to explore a mathematical idea			GDTB/L3-12	I	
Use a rate to estimate and calculate cost			FTGU phase 1-3	I	
Design a budget within given constraints			FTGU phase 4	I	

Number - Exponents

	Grade 6		Grade 7		Grade 8	
	Unit/lesson	Depth	Unit/lesson	Depth	Unit/lesson	Depth
Create a visual model for exponents	LON P3	I	MMA	D	ETU/L3 FP/L10	I I
Compute the value of numbers raised to an exponent	PNS/L12 FWTP LON/L10	D R I	MMA/L5-8	I	RR/L4-9 ETU/L2-12 FP/L10-12	R R I
Use exponents to write expressions	PNS/L12 LON/L10	D I			WCN/L5-8 RR/L4-9 FP/L7-12	I R I
Given a whole number from 1 – 100, identify a perfect square or find the two consecutive whole numbers between which the square root lies			MMA/L5	I		
Estimate the square root of a number			MMA/ L7	I		
Write large and small numbers in scientific notation						
Develop and apply laws of exponents	LON/L9-10	D	MMA/L	D	FP/L10-12	I
Evaluate expressions involving negative exponents	LON/L9	I			FP/L11-12	I
Calculate square roots and cube roots			MMA/L6-8	I		

Number - Number Theory

	Grade 6		Grade 7		Grade 8	
	Unit/lesson	Depth	Unit/lesson	Depth	Unit/lesson	Depth
Identify multiples of a given number	FWTP/L3,5	I	MMA/L10-11	I		
Identify all the factors of a number	FWTP phase 1	I	MMA/L10	I		
Find a greatest common factor	FWTP phase 1	I				
Find a least common multiple	FWTP phase 1	I				
Create rectangles that model the different factor pairs of a number	FWTP/L1	I				
Identify the prime numbers from 1 to 100			MMA/L10	I		
Find the prime factorization of a number	FWTP/L2	I	MMA/L10	I		
Distinguish between prime and composite numbers	FWTP/P1	I	MMA/L10	R		

Number - Decimals

	Grade 6		Grade 7		Grade 8	
	Unit/lesson	Depth	Unit/lesson	Depth	Unit/lesson	Depth
Read decimal numbers up to hundred-thousandths?	BTP phase 1	I				
Compare and order decimals	BTP/L3-4	I	BB/L1-12	R		
Explore equivalence relationships among numbers in decimal form	BTP/L1-20	I				
Connect visual representations with numbers in decimal form	BTP phase 1	I				
Explore addition and subtraction of decimals through standard and non-standard algorithms	BTP phase 2	I	BB/1-12	R		
Explore multiplication of decimals through standard and non-	BTP phase 2	I	BB/L1-12	R		

standard algorithms						
Explore division of decimals through standard and non-standard algorithms	BTP phase 2	I	BB/L1-12	R		
Round off decimals to a given place value	BTP phase 1	I	BB/L1-12	R		
Explore the relationship between repeating decimals and their equivalent fractions	BTP phase 1 & 2	I				

Number - Fractions

	Grade 6		Grade 7		Grade 8	
	Unit/lesson	Depth	Unit/lesson	Depth	Unit/lesson	Depth
Identify and use benchmark fractions	BTP phase 3	I				
Find multiple ways to visually represent a fraction	FWTP phase 2	I				
Find equivalent fractions	FWTP phase 2	I	BB/L5-7	I		
Explore the relative size of equivalent fractions (ie half of one amount may not be the same size as half of another amount)	FWTP phase 2	I				
Compare and order fractions (proper and improper)	FWTP phase 2	I	BB/L5-7	R		
Be able to convert improper fractions to mixed numbers, and vice versa	FWTP phase 2	I				
Develop strategies to solve fraction addition and subtraction problems mentally	FWTP phase 2	I				
Explore addition and subtraction of fractions (proper and improper) through standard and non-standard algorithms	FWTP phase 2	I	MMA L1	R		
Find a greatest common factor	FWTP phase 1	I				
Find a least common multiple	FWTP phase 1	I				
Explore multiplication of fractions (proper and improper) through standard and non-standard algorithms	FWTP/L15-20	I				
Explore division of fractions (proper and improper) through standard and non-standard algorithms	FWTP/L19-20	I				

Number - Ratio, Proportion and Percents

	Grade 6		Grade 7		Grade 8	
	Unit/lesson	Depth	Unit/lesson	Depth	Unit/lesson	Depth
Understand percent as "per 100".	BTP phase 3	I	BB/L9-12	I		
Find a percent of a number using standard and non-standard algorithms	BTP phase 3	I	BB/L9-12	I		
Use benchmark percents to calculate other percent.	BTP phase 3	I	BB/L9-12	I		
Demonstrate how to solve real-world problems involving percents.	BTP phase 3	I	BB/L9-12	I		
Solve problems involving percents and discounts.	BTP phase 3	I	BB/L9-12	I		
Understand ratios as part-whole and part-part relationships.			BB/L5-8 FTGU/L1-12	I R		
Describe and compare two sets of data using ratios and use appropriate notations such as a/b, a:b and "a to b"			BB/L5-8 GIS phase 2	I I		
Compare ratios using a variety of strategies	FWTP phase 1	I	BB/L1-12	I		
Devise and use an efficient method for finding equivalent ratios.	FWTP phase 1	I	BB/L5-8 GIS phase 2	I I		
Develop, analyze and explain procedures for computing, estimating, and solving proportions.	GW 1-12	I	BB/L5-8 GIS phase 2	I I		
Use proportions to solve problems.	BTP phase 3 GW 1-12 WDDS L12	I D I	BB/L5-8 FTGU 1-12 GIS phase 2	I R I		
Use the tangent ratio to solve problems.						
Read scale drawings and create original scale drawings.	GW 1-12	I	FTGU 1-12	I		
Understand that the proportional relationship between objects drawn to scale is the same as that between the objects	GW 1-12	I	FTGU 1-12	I		

themselves.						
Use scale factors less than one, which reduce that reduce the size of the original.	GW 1-12	I	FTGU 1-12	I		
Make scale drawings involving angles of elevation.						
Compare the effect of rescaling on linear, area and volume measurements	GW 1-12	I				
Use ratios to solve similarity problems			GIS phases 1&2	I		

Number - The relationship between fractions, percents and decimals

	Grade 6		Grade 7		Grade 8	
	Unit/lesson	Depth	Unit/lesson	Depth	Unit/lesson	Depth
Order a mixed set of fractions, decimals, and percents	BTP phase 1	I				
Write fractions as mixed decimals	BTP phase 1	I				
Investigate and describe the relationships among fractions, decimals and percents (including using “benchmark” or “familiar” numbers),	BTP phase 3	I				
Explore the relationship between repeating decimals and their equivalent fractions	BTP/L9	I				

Number - Integers

	Grade 6		Grade 7		Grade 8	
	Unit/lesson	Depth	Unit/lesson	Depth	Unit/lesson	Depth
Compare and order positive and negative numbers on a number line	BTP phase 4	I				
Explore addition and subtraction of integers through standard and non-standard algorithms	BTP phase 4	I	MMA/L1,2,4	I	ETU 1-12	R

Explore multiplication and division of integers through standard and non-standard algorithms			MMA L3,4	I	ETU 1-12	R
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Number - Number Systems

	Grade 6		Grade 7		Grade 8	
	Unit/lesson	Depth	Unit/lesson	Depth	Unit/lesson	Depth
Compare and order numbers on a number line	FWTP 8-20 BTP/L 4,16,18	I I				
Understand the role of place value in making our number system efficient	LON 1-12	I				
Explain the role of zero in a place value system	LON 1-12	I				
Compare and contrast/ investigate properties of number systems	LON/L3,4	I				
Analyze a number system and compare to our own	LON/L4	I				
Recognize that each number system has its own set of rules/properties	LON/Phase 2	I				
Describe the relationship between the subsets of the real number system (whole numbers, integers, real numbers, rational and irrational numbers, natural numbers)	FWTP 1-12 BTP 1-12	I I				
Understand the meaning of irrational numbers	BTP/P2	D	GIS/P3 MMA/P2	D D		
Write large and small numbers in scientific notation						
Understand and explore number systems, ancient number systems, base 2,3,4,10 etc.	LON 1-12	I				

Geometry - Planes, Lines, Angles (see also Measurement)

	Grade 6		Grade 7		Grade 8	
	Unit/lesson	Depth	Unit/lesson	Depth	Unit/lesson	Depth
Use a compass to create constructions.			FTGU phase 2	I		
Explore and describe the properties of points, lines, and planes.						
Visualize and draw geometric figures.	DS1-12	I	FTGU 1-12	I	SS 1-12	R
Identifying equal and parallel sides and equal and right angles.	DS/P2	I				
Describe the relationship between vertical angles and angles that are supplementary or complementary						

Geometry - Triangles (see also Measurement)

	Grade 6		Grade 7		Grade 8	
	Unit/lesson	Depth	Unit/lesson	Depth	Unit/lesson	Depth
Classify triangles in several different ways and investigate possible combinations of triangle types	DS 5-12	I	GIS phase 1	I		
Explore the relationships among the sides of a triangle			GIS phase 1	I	R&R 4-6	I
Determine the relationships among the angles and sides of triangles			GIS phase 1	I	R&R 4-6	I
Investigate when a set of three lengths can and cannot be used to construct a triangle			GIS phase 2	I	R&R 4-6	I
Explore and compare various methods for finding the area of a triangle, including the formula			GIS 1-12 FTGU phase 2	I R		
Develop and explain the Pythagorean Theorem					R&R 4-6, 9-10	I
Use the Pythagorean Theorem to find unknown side lengths in right triangles					R&R 4-6, 9-10	I
Generate sets of whole numbers that form Pythagorean triples					R&R L5	I
Use the tangent ratio and the inverse tangent to find unknown angle measures and side lengths in right triangles					R&R L10	I

Geometry - Area/Perimeter(see also Measurement)

	Grade 6		Grade 7		Grade 8	
	Unit/lesson	Depth	Unit/lesson	Depth	Unit/lesson	Depth
Determine if a problem situation involving polygons of four sides or less represents the application of perimeter or area and apply the appropriate formula	DS/L8	I				
Use informal methods to estimate the area of a shape	GW 3,4,7	I				

Geometry - Formulas

	Grade 6		Grade 7		Grade 8	
	Unit/lesson	Depth	Unit/lesson	Depth	Unit/lesson	Depth
Develop and apply area formulas for:						
Circles					S&S 5-12	R
Square & rectangles	FWTP/L1	D	FTGU 1-12	I	S&S 5-12	R
Triangles			FTGU 1-12	I	S&S 5-12	R
Trapezoids			FTGU 1-12	I	S&S 5-12	R
Regular polygons			FTGU 1-12	D		
Compare different methods for determining areas			FTGU 1-12	I		

Geometry - Quadrilaterals

	Grade 6		Grade 7		Grade 8	
	Unit/lesson	Depth	Unit/lesson	Depth	Unit/lesson	Depth

Identify different kinds of quadrilaterals	DS 5-12	D				
Investigate quadrilateral relationships	DS 5-12	D				
Examine the relationships between properties of sides and properties of angles in a quadrilateral	DS –12	D				

Geometry - Polygons

	Grade 6		Grade 7		Grade 8	
	Unit/lesson	Depth	Unit/lesson	Depth	Unit/lesson	Depth
Identify polygons having 3 – 10 sides						
Explore properties of regular polygons	DS/L7-12	I				
Develop a classification method for sorting polygons	DS 1-12	I				
Find the area of polygons by subdividing them into rectangles and right triangles						
Investigate and describe functional relationships between the number of sides of a regular polygon and the sum of the measures of the interior angles						
Understand relationships among the sides and angles of polygons						

Geometry - Surface Area/Volume (see also Measurement)

	Grade 6		Grade 7		Grade 8	
	Unit/lesson	Depth	Unit/lesson	Depth	Unit/lesson	Depth
Explore relationships between surface area and volume in geometric solids					S&S 1-12	II
Develop and use formulas for the surface area of geometric			FTGU	D	S&S 3-12	I

solids, including prisms, cylinders, pyramids and cones			(prisms/pyramids)			
Develop and use formulas for the volumes of geometric solids, including prisms, cylinders, pyramids and cone					S&S 3-12	I
Find the volume and surface area of a compound figure			FTGU (surface area)	I	S&S L8	I
Estimate volumes and surface areas of everyday objects					S&S 3-12	I
Arrange cubes to maximize surface area					S&S L4	I

Geometry - Polyhedra/Other 3-D Figures

	Grade 6		Grade 7		Grade 8	
	Unit/lesson	Depth	Unit/lesson	Depth	Unit/lesson	Depth
Identify 3 dimensional figures	FWTP/L1(rectangular prism) DS 9-12	I I			S&S L1-5	R
Classify rectangular prisms, cones, cylinders, and pyramids					S&S L1	R
Use geometric terminology to describe 3-D shapes	GW8-12 DS 9-12	I I			S&S 1-12	I
Visualize ways of building polyhedrons from polygons	DS 9-12	I	FTGU 1-12	I	S&S 1-12	I
Explore and describe the properties of polyhedrons, including edges, faces, and vertices	DS 9-12	I				
Use compass construction techniques to create nets for 3-D shapes such as prisms and pyramids	DS 9-12	D	FTGU 1-12	I		
Create 3-D models	GW 11-12	I				

Geometry - Circles

	Grade 6		Grade 7		Grade 8	
	Unit/lesson	Depth	Unit/lesson	Depth	Unit/lesson	Depth
Circles- identifying chord, radius, diameter, central angle			GIS/Phase 2	I		
Create and solve problems using radius, diameter, circumference and area			GIS/Phase 2	I		
Explore the relationship between the diameter and the circumference of a circle; develop and explain the concept of pi			GIS/Phase 2	I		

Geometry - Symmetry and Tessellations

	Grade 6		Grade 7		Grade 8	
	Unit/lesson	Depth	Unit/lesson	Depth	Unit/lesson	Depth
Explore the symmetry lines of polygons			GIS/Phase 2	I		
Use symmetry to classify figures and understand their properties			GIS/Phase 2	I		
Investigate why certain polygons tessellate and others do not			GIS/ Phase 2	I		
Create triangle and polygon tessellations			GIS/Phase 2	I		
Identify similar triangles			GIS/L4	I		
Understand congruent angles/congruent figures			GIS/L4	I		
Understand and solve problems using ratio and corresponding parts			GIS/L4	I		

Geometry - Visualization

	Grade 6		Grade 7		Grade 8	
	Unit/lesson	Depth	Unit/lesson	Depth	Unit/lesson	Depth
Create two-dimensional representations of three-dimensional structures	DS 1-12	I			S&S 1 R&R 11-12	I I
Visualize and build three-dimensional structures from two-dimensional representations	DS 9-12	I	FTGU 1-12	I	S&S 1 R&R 11-12	I I
Compare and contrast various methods for showing three-dimensions in two dimensional representations	DS 1-4	I				
Construct a 3-D model using cubes, given the top, side and/or bottom views	DS 1-4	I				
Make and translate between isometric and orthogonal drawings of 3-D shapes and structures	DS 1-4	I				
Use nets to make three-dimensional figures			FTGU 1-12	I	S&S 1,5-9 R&R 11-12	I I
Draw cross sections of different solids					S&S 2,7,10	I

Measurement

	Grade 6		Grade 7		Grade 8	
	Unit/lesson	Depth	Unit/lesson	Depth	Unit/lesson	Depth
Estimate and measure lengths with customary units	GW 1-12	I	FTGU 1-12	R	S&S 1-12 R&R 1-12 MOM 1-4	R R I
Estimate and measure lengths with the metric system	GW 1-12	I	FTGU 1-12	R	S&S 1-12 MOM 1-4	R I
Describe and contrast the U S customary and metric systems of measurement	GW 6	I				
Convert from metric to standard and vice versa	GW 6	I			S&S 11	I

Select appropriate units and tools to measure to the degree of accuracy required in a particular situation	GW 1-12	I	FTGU 1-12	R		
Use a protractor to estimate, measure and draw angles			GIS 1-12	I	R&R 1-12	I
Estimate angle measures using 45, 90 and 180 as referents and use the appropriate tools to measure the given angles			GIS 1-12	I	R&R 1	I
Measure and find the sum of the angles of a triangle			GIS 1-12	I		
Find the measure of an angle of a triangle, given the other angle measures			GIS 1-12	I		
Choose appropriate units of measure to express area, surface area and volume			GIS 1-12 (area)	I	S&S 3-12	I
Measure distance, time, and speed					MOM 1-12	I
Estimate time					MOM 1-4	I

Data Analysis and Probability - Representations 1

	Grade 6		Grade 7		Grade 8	
	Unit/lesson	Depth	Unit/lesson	Depth	Unit/lesson	Depth
Construct and interpret data through frequency graphs/ line plots	WDDS/ L1-3	I			LBN L1	R
Construct and interpret data through	WDDS/L4	I			LBN L1	R
Construct and interpret data through double bar graphs	WDDS/L5-6	I			LBN L1	R
Construct and interpret data through broken-line graphs	WDDS/L7-8	I				
Construct and interpret data through circle graphs			BB 10-12	I	LBN L4-5	I
Construct and interpret data through stem-and-leaf plots						
Construct and interpret data through Tables and charts	WDDS L4-7	I			LBN 1-12	R

Data Analysis and Probability - Representations 2

	Grade 6		Grade 7		Grade 8	
	Unit/lesson	Depth	Unit/lesson	Depth	Unit/lesson	Depth
Demonstrate an understanding of when a particular graph is appropriate to represent data	WDDS 1-12	I			LBN 1-8	I
Determine appropriate placement of variables on a pair of axis on a bar or line graph	WDDS 1-12	I			LBN 5-8	I
Understand the differences between continuous and discrete data	WDDS 1-12	I				
Understand the connections and shift easily between multiple representations	WDDS 1-12	I			LBN 1-8	I

Data Analysis and Probability - Probability

	Grade 6		Grade 7		Grade 8	
	Unit/lesson	Depth	Unit/lesson	Depth	Unit/lesson	Depth
Build an informal understanding of chance and randomness	WDDS P3	I			LBN 9-12	I
Represent probabilities visually, such as areas of a circular spinner or strip graphs	WDDS P4	D			LBN 9-12	I
Make a sample space for selected experiments and represent it in the form of a list, chart, picture, or tree diagram.	WDDS/L11-12	I			LBN 9-12	I
Describe probabilities quantitatively using fractions, decimals, and percentages.	WDDS/L10-12	I			LBN 9-12	I
Model situations by devising and carrying out experiments or simulations to determine probabilities.	WDDS/L10-12	I			LBN 9-12	I
Make predictions that are based on experimental or theoretical probabilities and determine their reasonableness	WDDS/L12	I			LBN 9-12	I
Use tree diagrams to shoe combinations and permutations					LBN 9-12	
Use the Permutation theorem					LBN 11-12	I
Use the fundamental counting principle					LBN 9-12	I

Determine experimental and theoretical probabilities	WDDS/L10-12	I			LBN 9-12	I
Compare probability events	WDDS/L11	I			LBN 9-12	I

Data Analysis and Probability - Statistics

	Grade 6		Grade 7		Grade 8	
	Unit/lesson	Depth	Unit/lesson	Depth	Unit/lesson	Depth
Determine measures of central tendency, including mean, median, mode and range, from given or collected data sets, tables, graphs and charts	GW 5 WWDS/L1, 2, 3, 10,11	R I			LBN 1-8	I
Develop and explain why statistical measures are powerful aids for decision-making	WDDS 1-12	I			LBN 1-8	I

Data Analysis and Probability - Data analysis

	Grade 6		Grade 7		Grade 8	
	Unit/lesson	Depth	Unit/lesson	Depth	Unit/lesson	Depth
Collect and organize sets of data	WDDS 1-12	I			LBN 1-12	I
Construct, read, and interpret tables, charts and graphs	WDDS 1-12	I			LBN 1-8	I
Make inferences and convincing arguments that are based on data analysis and supported by data	WDDS 1-12	I			LBN 1-8	I
Formulate questions, design studies, and collect data about a characteristic shared by two populations, or different characteristics with in one population.	WDDS/P2&3	I				
Understand that the choice of scale affects how data is conveyed and interpreted.	WDDS/P2&3	I			LBN 1	I
Identify and interpret statistical distributions, bimodal, normal, skewed, and flat	WDDS/P2	I				

Make predictions based on data	WDDS/1-12	I			LBN 1-8	I
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Proof/Reasoning

	Grade 6		Grade 7		Grade 8	
	Unit/lesson	Depth	Unit/lesson	Depth	Unit/lesson	Depth
Find and define counterexamples to a mathematical statement			MMA/L3-12	I		
Write a simple mathematical argument from scratch that includes a rule and its mathematical boundaries			MMA/L6-12	I		
Learn to check for special cases when making a mathematical argument			MMA/L3-12	I		
Build deductive reasoning skills			MMA			

Spreadsheet Use

	Grade 6		Grade 7		Grade 8	
	Unit/lesson	Depth	Unit/lesson	Depth	Unit/lesson	Depth
Explore “what-if” questions on a spreadsheet			GDTB 4-12	I		
Read and write formulas written in spreadsheet notation			GDTB 4-12	I		
Understand the purpose of a spreadsheet as a problem-solving tool			GDTB 4-12	I		
Collect and organize data/information to be used in a spreadsheet			GDTB 4-12	I		