FBISD
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TEACHING & LEARNING

Department of Teaching & Learning

Math Grade 7 Pre-AP - Scope and Sequence 2018-2019

TEKS Distribution among Units

Process Standards

	7.1A	7.1B	7.1C	7.1D	7.1E	7.1F	7.1G
Unit 1	X	X	X	X	X	X	X
Unit 2	X	X	X	X	X	X	X
Unit 3	X	X	X	X	X	X	X
Unit 4	X	X	X	X	X	X	X
Unit 5	X	X	X	X	X	X	X
Unit 6	X	X	X	X	X	X	X
Unit 7	X	X	X	X	X	X	X
Unit 8	X	X	X	X	X	X	X
Unit 9	X	X	X	X	X	X	X

7TH Grade Content Standards

	7.3B	7.4C	7.5B	**7.5C**	7.6A	7.6B	7.6C	7.6D	7.6E	7.6F	**7.6G**	7.6H	**7.6I**	7.7A	7.8C	7.9A	7.9B	**7.9C**	7.9D	7.11A	7.11B	7.11C	7.12B	7.12C	7.13B	7.13C	7.13D
Unit 1	X																										
Unit 2				X																							
Unit 3		X												X													
Unit 4																				X		X					
Unit 5			X												X		X	X									
Unit 6																X			X								
Unit 7					X	X	X	X	X			X	X														
Unit 8										X	X												X	X			
Unit 9																									X	X	X

8TH Grade Content Standards

	8.2A	8.2B	8.2C	**8.2D**	8.3A	8.3B	**8.3C**	8.4A	8.4B	**8.4C**	8.6A	8.6B	8.6C	**8.7A**	**8.7B**	**8.7C**	8.7D	8.8A	8.8B	**8.8C**	8.8D	8.10A	8.10B	**8.10C**	8.10D	8.11B	8.11C	8.12A	8.12B	8.12C	8.12D	8.12E	8.12F	8.12G
Unit 1	X	X	X	X									X			X	X																	
Unit 2					X	X	X														X	X	X	X										
Unit 3								X	X	X																								
Unit 4																		X	X	X	X										X			
Unit 5																									X									
Unit 6											X	X		X	X																			
Unit 7																																		
Unit 8																										X	X							
Unit 9																												X	X	X	X	X	X	X

Note: The 7th Grade TEKS not listed above are covered in 6th Grade Pre-AP. The 8th Grade TEKS not listed above are covered in Algebra 1 Pre-AP MS.

Math Grade 7 Pre-AP
Scope and Sequence 2018-2019

Mathematical Process Standards: The student uses mathematical process to acquire and demonstrate mathematical understanding. The student is expected to:

7.1A Apply mathematics to problems arising in everyday life, society, and the workplace
7.1B Use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution
7.1C Select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems
7.1D Communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate
7.1E Create and use representations to organize, record, and communicate mathematical ideas
7.1F Analyze mathematical relationships to connect and communicate mathematical ideas
7.1G Display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication

Grading Period 1

Week of Inspirational Maths

Estimated Date Range: Aug. 15 – Aug. 21
Estimated Time Frame: 5 days

Concepts within the Unit	TEKS
This unit is a set of 5 lessons to begin the school year. Lessons focus on growth mindset and how we learn mathematics. The themes for the week promote important mathematical ideas such as: • learning from mistakes • doing mathematics visually • productive struggle • working together • communicating about mathematics	<u>Process Standards:</u> 7.1A Apply mathematics to problems arising in everyday life, society, and the workplace 7.1B Use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution 7.1C Select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems 7.1D Communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate 7.1E Create and use representations to organize, record, and communicate mathematical ideas 7.1F Analyze mathematical relationships to connect and communicate mathematical ideas 7.1G Display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication

Unit 1: Represent and Apply Real Numbers Estimated Date Range: Aug. 22 – Sept. 19 Estimated Time Frame: 20 days Note: Includes 3 days for Re-engagement and Assessment	
Concepts within the Unit	**TEKS**
Concept #1: Representing Real Numbers Suggested Days: 7	Integrated Standards: 8.2A extend previous knowledge of sets and subsets using a visual representation to describe relationships between sets of real numbers 8.2B approximate the value of an irrational number, including π and square roots of numbers less than 225, and locate that rational number approximation on a number line 8.2C convert between standard decimal notation and scientific notation 8.2D order a set of real numbers arising from mathematical and real-world contexts 7.3B apply and extend previous understandings of operations to solve problems using addition, subtraction, multiplication, and division of rational numbers.
Concept #2: Modeling Pythagorean Theorem Suggested Days: 3	Integrated Standards: 8.6C use models and diagrams to explain the Pythagorean Theorem
Concept #3: Application of Pythagorean Theorem Suggested Days:7	**Priority Standards** **8.7C use the Pythagorean Theorem and its converse to solve problems.** Integrated Standards: 8.7D determine the distance between two points on a coordinate plane using the Pythagorean Theorem 8.6C use models and diagrams to explain the Pythagorean Theorem
Unit 2: Similarity and Transformations Estimated Date Range: Sept. 20 – Oct. 18 Estimated Time Frame: 20 days Note: Includes 4 days for re-engagement and assessment	
Concepts within the Unit	**TEKS**
Concept #1: Similar Figures Suggested Days: 4	**Priority Standards** **7.5C Solve mathematical and real-world problems involving similar shape and scale drawings** Integrated Standards 7.5A Generalize the critical attributes of similarity, including ratios within and between similar shapes

Concept #2: Translations, Rotations, and Reflections Suggested Days: 5	**Priority Standards** **8.10C explain the effect of translations, reflections over the *x*- or *y*-axis, and rotations limited to 90°, 180°, 270°, and 360° as applied to two-dimensional shapes on a coordinate plane using an algebraic representation.** Integrated Standards 8.10A generalize the properties of orientation and congruence of rotations, reflections, translations, and dilations of two-dimensional shapes on a coordinate plan 8.10B differentiate between transformations that preserve congruence and those that do not
Concept #3: Dilations Suggested Days: 7	**Priority Standards** **8.3C Use an algebraic representation to explain the effect of a given positive rational scale factor applied to two-dimensional figures on a coordinate plane with the origin as the center of dilation** Important Standards 8.10C explain the effect of translations, reflections over the *x*- or *y*-axis, and rotations limited to 90°, 180°, 270°, and 360° as applied to two-dimensional shapes on a coordinate plane using an algebraic representation. Integrated Standards 8.3A generalize that the ratio of corresponding sides of similar shapes are proportional, including a shape and its dilation 8.3B compare and contrast the attributes of a shape and its dilation(s) on a coordinate plane 8.7D determine the distance between two points on a coordinate plane using the Pythagorean Theorem 8.8D use informal arguments to establish facts about ~~the angle sum and exterior angle of triangles, the angles created when parallel lines are cut by a transversal, and~~ the angle-angle criterion for similarity of triangle

Grading Period 2

Unit 3: Linear Relationships

Estimated Date Range: Oct. 22 – Nov. 9
Estimated Time Frame: 15 days
Note: Includes 4 days for re-engagement and assessment

Concepts within the Unit	TEKS
Concept #1: Rate of Change and Slope Suggested Days: 4	Integrated Standards 7.4C determine the constant of proportionality (k = y/x) within mathematical and real-world problems 8.4A use similar right triangles to develop an understanding that slope, *m*, given as the rate comparing the change in *y*-values to the change in *x*-values, $\frac{y_2 - y_1}{x_2 - x_1}$, is the same for any two points (x_1, y_1) and (x_2, y_2) on the same line; 8.4B graph proportional relationships, interpreting the unit rate as the slope of the line that models the relationship;
Concept #2: Understanding Linear Functions Suggested Days: 7	**Priority Standards** **8.4C use data from a table or graph to determine the rate of change or slope and y-intercept in mathematical and real-world problems** Important Standards 7.7A represent linear relationships using verbal descriptions, tables, graphs, and equations that simplify to the form y = mx + b

Unit 4: Equations and Inequalities Estimated Date Range: Nov. 12 – Nov. 16 and Nov. 26 – Dec. 21 Estimated Time Frame: 25 days Note: Includes 3 days for re-engagement and assessment Note: Includes 7 days for Semester Exams and review	
Concepts within the Unit	**TEKS**
Concept #1: Writing Equations and Inequalities Suggested Days: 3	Integrated Standards 8.8A write one-variable equations or inequalities with variables on both sides that represent problems using rational number coefficients and constants; 8.8B write a corresponding real-world problem when given a one-variable equation or inequality with variables on both sides of the equal sign using rational number coefficients and constants
Concept #2: Model and Solve Equations Suggested Days: 7	**Priority Standards** **8.8C model and solve one-variable equations with variables on both sides of the equal sign that represent mathematical and real-world problems using rational number coefficients and constants** Important Standards 7.11A model and solve one variable two step-equations and inequalities Integrated Standards 8.8A write one-variable equations or inequalities with variables on both sides that represent problems using rational number coefficients and constants; 8.9A identify and verify the values of x and y that simultaneously satisfy two linear equations in the form y = mx + b from the intersections of the graphed equations.
Concept #3: Geometric Applications of Equations Suggested Days: 5	Important Standards 7.11A model and solve one variable two step-equations and inequalities 8.8C model and solve one-variable equations with variables on both sides of the equal sign that represent mathematical and real-world problems using rational number coefficients and constants Integrated Standards 7.11C write and solve equations using geometry concepts, including the sum of the angles in a triangle, and angle relationships 8.8D use informal arguments to establish facts about the angle sum and exterior angle of triangles, the angles created when parallel lines are cut by a transversal, ~~and the angle-angle criterion for similarity of triangles~~

Grading Period 3

Unit 5: Circumference & Area of 2-D Figures

Estimated Date Range: Jan. 8 – Jan. 30
Estimated Time Frame: 16 days
Note: Includes 3 days for re-engagement and assessment

Concepts within the Unit	TEKS
Concept #1: Circumference and Area of Circles Suggested Days: 4	Integrated Standards 7.5B Describe π as the ratio of the circumference of a circle to its diameter 7.8C use models to determine the approximate formulas for the circumference and area of a circle and connect the models to the actual formulas Integrated Standards 7.9B - Determine the circumference and area of circles
Concept #2: Area of Composite Figures Suggested Days: 6	**Priority Standards** **7.9C Determine the area of composite figures containing combinations of rectangles, squares, parallelograms, trapezoids, triangles, semicircles, and quarter circles** Integrated Standards 7.9B Determine the circumference and area of circle
Concept #3: Effects of Dilation Suggested Days: 3	Integrated Standards 8.10D model the effect on linear and area measurements of dilated two-dimensional shapes

Unit 6: Volume & Surface Area of 3-D Figures

Estimated Date Range: Jan. 31 – Mar. 4
Estimated Time Frame: 22 days
Note: Includes 4 days for re-engagement and assessment

Concepts within the Unit	TEKS
Concept #1: Surface Area Suggested Days: 9	**Priority Standards** **8.7B use previous knowledge of surface area to make connections to the formulas for lateral and total surface area and determine solutions for problems involving rectangular prisms, triangular prisms, and cylinders** Important Standards 7.9C Determine the area of composite figures containing combinations of rectangles, squares, parallelograms, trapezoids, triangles, semicircles, and quarter circles

	Integrated Standards 7.9D Solve problems involving the lateral and total surface area of a rectangular prism, rectangular pyramid, triangular prism, and triangular pyramid by determining the area of the shape's net
Concept #2: Volume of 3-D Figures Suggested Days: 9	**Priority Standards** **8.7A solve problems involving the volume of cylinders, cones, and spheres** Important Standards 7.9A Solve problems involving the volume of rectangular prisms, triangular prisms, rectangular pyramids, and triangular pyramids Integrated Standards 8.6A describe the volume formula $V = Bh$ of a cylinder in terms of its base area and its height; 8.6B model the relationship between the volume of a cylinder and a cone having both congruent bases and heights and connect that relationship to the formulas
Unit 7: Data & Probability Estimated Date Range: Mar. 5 – Mar. 8 and Mar. 18 - April 2 Estimated Time Frame: 16 days Note: Includes 3 days for re-engagement and assessment	
Concepts within the Unit	**TEKS**
Concept #1: Foundations of Probability Suggested Days: 3	Integrated Standards 7.6A represent sample spaces for simple and compound events using lists and tree diagrams 7.6B select and use different simulations to represent simple and compound events with and without technology
Concept #2: Determining Probability of Simple and Compound Events Suggested Days: 6	**Priority Standards** **7.6I determine experimental and theoretical probabilities related to simple and compound events using data and sample spaces** Integrated Standards 7.6A represent sample spaces for simple and compound events using lists and tree diagrams 7.6B select and use different simulations to represent simple and compound events with and without technology 7.6E find the probability of a simple event and its complement and describe the relationship between the two
Concept #3: Making Predictions with Simple and Compound Events Suggested Days: 5	Integrated Standards 7.6C make predictions and determine solutions using experimental data for simple and compound events 7.6D Make predictions and determine solutions using theoretical probability for simple and compound events with and without technology

	7.6H Solve problems using qualitative and quantitative predictions and comparisons from simple experiments
Grading Period 4	
Unit 7: Data & Probability (Continued) Estimated Date Range: Mar. 5 – Mar. 8 and Mar. 18 - April 2 Estimated Time Frame: 16 days Note: Includes 3 days for re-engagement and assessment	
Concepts within the Unit	**TEKS**
Concept #1: Foundations of Probability Suggested Days: 2	Integrated Standards 7.6A represent sample spaces for simple and compound events using lists and tree diagrams 7.6B select and use different simulations to represent simple and compound events with and without technology
Concept #2: Determining Probability of Simple and Compound Events Suggested Days: 6	**Priority Standards** **7.6I determine experimental and theoretical probabilities related to simple and compound events using data and sample spaces** Integrated Standards 7.6A represent sample spaces for simple and compound events using lists and tree diagrams 7.6B select and use different simulations to represent simple and compound events with and without technology 7.6E find the probability of a simple event and its complement and describe the relationship between the two
Concept #3: Making Predictions with Simple and Compound Events Suggested Days: 5	Integrated Standards 7.6C make predictions and determine solutions using experimental data for simple and compound events 7.6D Make predictions and determine solutions using theoretical probability for simple and compound events with and without technology 7.6H Solve problems using qualitative and quantitative predictions and comparisons from simple experiments
Unit 8: Data & Statistics Estimated Date Range: April 3 – April 18 Estimated Time Frame: 12 days Note: Includes 2 days for re-engagement and assessment Note: Includes 1 day for state testing	
Concepts within the Unit	**TEKS**
Concept #1: Analyzing Data in Bar Graphs, Dot Plots, and Circle Graphs Suggested Days: 6	**Priority Standards** **7.6G Solve problems using data represented in bar graphs, dot plots, and circle graphs, including part-to-whole and part-to-part comparisons and equivalents**

	Integrated Standards 7.6F use data from a random sample to make inferences about a population 8.11B determine the mean absolute deviation and use this quantity as a measure of the average distance data are from the mean using a data set of no more than 10 data points
Concept #2: Making Inferences with Data Suggested Days: 4	Integrated Standards 7.12B use data from a random sample to make inferences about a population 7.12C compare two populations based on data in random samples from these populations, including informal comparative inferences about differences between the two populations 8.11C simulate generating random samples of the same size from a population with known characteristics to develop the notion of a random sample being representative of the population from which it was selected
Unit 9: Financial Literacy Estimated Date Range: Apr. 23 – May 24 Estimated Time Frame: 24 days Note: Includes 3 days for re-engagement and assessment Note: Includes 2 days for state testing and 7 days for semester exams and review	
Concepts within the Unit	**TEKS**
Concept #1: Purchasing Power Suggested Days: 2	Integrated Standards 8.12E identify and explain the advantages and disadvantages of different payment methods
Concept #2: Financial Responsibility Suggested Days: 4	Integrated Standards 7.13C create and organize a financial assets and liabilities record and construct a net worth statement 7.13D use a family budget estimator to determine the minimum household budget and average hourly wage needed for a family to meet its basic needs in the student's city or another large city nearby 8.12F analyze situations to determine if they represent financially responsible decisions and identify the benefits of financial responsibility and the costs of financial irresponsibility
Concept #3: Interest, Borrowing and Saving Suggested Days: 6	Integrated Standards 7.13B identify the components of a personal budget, including income; planned savings for college, retirement, and emergencies; taxes; and fixed and variable expenses, and calculate what percentage each category comprises of the total budge 8.12A solve real-world problems comparing how interest rate and loan length affect the cost of credit 8.12B calculate the total cost of repaying a loan, including credit cards and easy access loans, under various rates of interest and over different periods using an online calculator

	8.12C explain how small amounts of money invested regularly, including money saved for college and retirement, grow over time 8.12D calculate and compare simple interest and compound interest earnings 8.12G estimate the cost of a two-year and four-year college education, including family contribution, and devise a periodic savings plan for accumulating the money needed to contribute to the total cost of attendance for at least the first year of college