# Grade 7 AAC Math Overview
# 2025-2026

**This document is designed to provide parents/guardians/community an overview of the curriculum taught in the FBISD classroom. This document supports families in understanding the learning goals for the course, and how students will demonstrate what they know and are able to do. The overview offers suggestions or possibilities to reinforce learning at home.**

**Included at the end of this document, you will find:**

- A glossary of curriculum components
- The content area instructional model
- Parent resources for this content area

**To advance to a particular grading period, click on a link below.**


- Grading Period 1
- Grading Period 2
- Grading Period 3
- Grading Period 4


**At Home Connections**

The following are suggestions for reinforcing number sense and mathematical reasoning at home. These ideas can be used throughout the school year. You will find additional ideas to reinforce learning at home within each unit below.

- Ask questions that require students to describe and elaborate on their thinking and reasoning. Topics can be about everyday things as well as mathematics.
- Engage students in situations that challenge them to inquire and persevere through questioning.
- Play card games with students
- Play games with students such as Mancala, Yahtzee, Blokus, Rack-O, Mastermind, etc.
- Work number puzzles such as Sudoku, KenKen, Kakuro, or Numbrix.

**Process Standards**

The process standards describe ways in which students are expected to engage in the content. The process standards weave the other knowledge and skills together so that students may be successful problem solvers and use knowledge learned efficiently and effectively in daily life.

The student uses mathematical processes 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

### Unit 1: Represent Real Numbers

Estimated Date Range: Aug. 12 – Aug. 27 (12 total school days)
Instructional & Re-engagement Days in Unit: 11 days

| Assessments | | |
|---|---|---|
| **STATE/NATIONAL ASSESSMENTS**<br>N/A | **DISTRICT ASSESSMENTS**<br>N/A | **COMMON FORMATIVE ASSESSMENT (CFAs)**<br>Unit 1, 8.2D (1 Day)<br>Testing Window: Aug. 20 – Aug. 27 |

**Unit Overview:** In this unit, students will continue to examine the relationship of sets and subsets of rational numbers to discover the real number system including irrational numbers. Students will use prior knowledge of exponents and square units as a measure of area to build models to represent square roots and approximate square root numbers to locate the numbers on a number line. Students will build on prior knowledge of ordering rational numbers by comparing and ordering all real numbers by their magnitude. Students will also define radical and square root for both rational and irrational numbers as a subset of the real number system, convert between standard decimal notation and scientific notation, order a set of real numbers to include both rational and irrational numbers in both mathematical and real-world contexts. Students will also examine right triangles more closely within this unit by using models to explain the Pythagorean Theorem, use Pythagorean Theorem and its converse to solve problems, and apply these understandings to determine the distance between two points on a coordinate plane.

**At home connections:**

- Have students *identify* and *compare* numbers seen in daily life (I.e., price per pound in grocery ads, price per gallon of gas, measurements within a recipe) and discuss which value is greater or least and explain how they know.
- Have students identify and measure the sides of right triangles in their environment and use the Pythagorean Theorem to verify it is a right triangle.

| **Concepts within Unit #1**<br>Link to TEKS | **Success Criteria for this concept** |
|---|---|
| Establishing a Positive Mathematics Community<br>TEKS: 81A, 8.1B, 8.1C, 8.1D, 8.1E, 8.1G, 8.1G | • Demonstrate active listening skills while sharing in the community circle.<br>• Make positive and supportive connections with my peers.<br>• Engage in circle dialogues using the circle guidelines.<br>• Share my math ideas and strategies when given a problem during the number sense routine.<br>• Explain what a Respect Agreement is and why it is created.<br>• Work in a group to solve a mathematical problem.<br>• Describe strategies that I can use to solve math problems.<br>• Provide feedback to peers using guidelines and protocols. |
| Concept #1: Representing Real Numbers<br>TEKS: 8.2A, 8.2B, 8.2C, 8.2D | • Define and understand a square root.<br>• Determine the square root of a number.<br>• Approximate the value of a square root using understanding of known perfect squares.<br>• Approximate square roots and other irrational numbers using technology.<br>• Define whole numbers, integers, and rational numbers.<br>• Define irrational and real numbers.<br>• Identify the difference between rational and irrational numbers.<br>• Apply understanding of place value to compare and order real numbers.<br>• Identify the location of real numbers, including the approximation of irrational numbers on a number line.<br>• Order real numbers within mathematical and real-world context.<br>• Understand the change in place value when converting between scientific notation and decimal notation is determined by the exponent.<br>• Convert between standard decimal notation and scientific notation. |

| Unit 2: Data & Probability<br>Estimated Date Range: Aug. 28 – Sept. 25 (20 total school days)<br>Instructional & Re-engagement Days in Unit: 16 days | | |
|---|---|---|
| **Assessments** | | |
| **STATE/NATIONAL ASSESSMENTS**<br>N/A | **DISTRICT ASSESSMENTS**<br>NWEA MAP BOY (9/9 – 9/11) 3 days | **COMMON FORMATIVE ASSESSMENT (CFAs)**<br>Unit 2, 7.6I & 7.6H (1 Day)<br>Testing Window: Sept. 17 – Sep. 25 |

**Unit Overview:** In this unit, students will create sample spaces using tree diagrams and lists as well as using manipulatives and technology to understand probability of outcomes in simple and compound events. Students will identify the probability of simple events and its complement and describe the relationships between the two. Students will explore and understand the difference between theoretical probability and experimental probability for various events. Students will also create simulations of different events with or without technology to make predictions and compare different events. Students will make predictions with simple and compound events based on experimental data and/or theoretical probability.

**At home connections:**
Have the student use small candy bags (Skittles, M&Ms, etc.) to determine the theoretical probability of choosing a certain color from the bag.
Play "Coin Toss" with student. This will require you and your child to choose heads or tails, flip the coin 15 times, record the outcomes, and then determine the probability of flipping a coin landing or heads or tails. The probability must be expressed as a fraction, decimal or percentage. The person with the greater probability wins.

| **Concepts within Unit # 2**<br>Link to TEKS | **Success Criteria for this concept** |
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| Concept #1: Foundations of Probability<br>TEKS: 7.6A, 7.6B | • Identify and determine the possible outcomes for an event.<br>• Create a list and/or a tree diagram to represent all outcomes for a simple event.<br>• Create a list and/or a tree diagram to represent all outcomes for a compound event.<br>• Determine the total number of outcomes for an event based on my sample space created.<br>• Determine which sample space is correct when provided with choices in different forms. |
| Concept #2: Determining Probability of Simple and Compound Events<br>TEKS: 7.6B, 7.6E, 7.6I | • Understand and connect probability and ratios written as a fraction, decimal or percent.<br>• Difference between theoretical and experimental probability.<br>• Use sample spaces to determine theoretical probability of simple events.<br>• Use data to determine experimental probability of simple events.<br>• Explain the relationship between probability of a simple event and its compliment.<br>• Describe how to find the probability of a simple event.<br>• Use sample spaces to determine theoretical probability of compound events.<br>• Use data to determine experimental probability of compound events.<br>• Describe how to find the probability of a compound event.<br>• Explain the difference between independent and dependent compound events and identify whether two events are independent or dependent.<br>• Utilize simulations with or without technology to determine experimental probability. |
| Concept #3: Making Predictions with Simple and Compound Events | • Make predictions for simple events based on experimental data.<br>• Make predictions for compound events based on experimental data. |

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| TEKS: 7.6C, 7.6D, 7.6H, 7.6F | • Make quantitative predictions and comparisons of simple events.<br>• Make qualitative predictions and comparisons of simple events.<br>• Make predictions using theoretical probability of simple events<br>• Make predictions using theoretical probability of compound events.<br>• Make predictions about a population using data from a random sample |

## Unit 3: Data & Statistics

Estimated Date Range: Sept. 29 – Oct. 10 (10 total school days)
Instructional Days in Unit Time Frame: 9 days

### Assessments

| STATE/NATIONAL ASSESSMENTS | DISTRICT ASSESSMENTS | COMMON FORMATIVE ASSESSMENT (CFAs) |
|---|---|---|
| N/A | N/A | Unit 3, 7.6G & 7.12A (1 Day)<br>Testing Window: Oct. 6 – Oct. 10 |

**Unit Overview:** In this unit, students will use proportional reasoning to compare data and solve data problems represented in bar graphs, dot plots, and circle graphs. Students will use part-to-part and part-to-whole comparisons and equivalencies to solve problems involving data from bar graphs, dot plots, and circle graphs. Students will compare the shape, center and spread of data using comparative plots, measures of central tendency and distribution of the data. Students will learn what a random sample is and be able to determine whether a sample is valid. Students will also use data to make connections between random samples and populations, make inferences from random samples of data using proportional reasoning. Students will also compare two populations based on the data in random samples to make inferences about similarities and differences.

**At home connections:**

- Have student survey immediate or extended family member on their favorite ice cream flavor. Student will use the results to create a bar graph and circle graph.

| Concepts within Unit # 3<br>Link to TEKS | Success Criteria for this concept |
|---|---|
| Concept #1: Analyzing Data in Bar Graphs, Dot Plots, and Circle Graphs<br>TEKS: 7.6G, 7.12A | • Read and understand the information represented in bar graphs, circle graphs, and dot plots.<br>• Explain the information represented in bar graphs, circle graphs, and dot plots.<br>• Solve problems involving data from bar graphs, dot plots, and circle graphs.<br>• Identify part-to-whole comparisons and equivalencies in bar graphs, dot plots, and circle graphs.<br>• Identify part-to-part comparisons and equivalencies in bar graphs, dot plots, and circle graphs.<br>• Use part-to-part and part-to-whole comparisons and equivalencies to solve problems involving different forms of data.<br>• Be able to determine measures of center in box plots and dot plots<br>• Be able to determine shapes and spread in box plots and dot plots.<br>• Compare two sets of data in box plots by comparing their shapes, centers, and spreads.<br>• Be able to compare two sets of data in box plots by comparing their shapes, centers, and spreads. |
| Concept #2: Making Inferences with Data<br>TEKS: 7.12B, 7.12C, 8.11C | • Read and interpret bar graphs, circle graphs, dot plots, and box plots.<br>• Understand and explain how to determine if a random sample is biased or unbiased.<br>• Make connections between samples and their populations.<br>• Make inferences about populations from random samples.<br>• Generate a random sample of data from a population without technology. (Dice, cards, etc.) |

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| | • Generate a random sample of data from a population with technology. (Number generators and simulators)<br>• Make predictions from random samples of data using proportional reasoning.<br>• Analyze and explain the data in a random sample of a population.<br>• Generate random samples with and without technology<br>• Compare two populations based on data in random samples of the populations.<br>• Make informal comparative inferences about the differences between two populations based on random samples from the populations. |
| Concept #3: Mean Absolute Deviation<br>TEKS: 8.11B | • Determine the mean absolute deviation given a set of data.<br>• Use mean absolute deviation to:<br>  ○ Describe the spread of data<br>  ○ Compare the variability of data |

## Grading Period 2

### Unit 4: Equations and Inequalities

Estimated Date Range: Oct. 21 – Nov. 17 (20 total school days)
Instructional & Re-engagement Days in Unit: 19 days

**Assessments**

| STATE/NATIONAL ASSESSMENTS | DISTRICT ASSESSMENTS | COMMON FORMATIVE ASSESSMENT (CFAs) |
|---|---|---|
| N/A | N/A | Unit 4, 8.8C & 8.7C (1 Day)<br>Testing Window: Nov. 10 – Nov. 17 |

**Unit Overview:** In this unit, students will write real world situations from an equation or inequality as well as write equations and inequalities from verbal situations where there is a variable on both sides of the symbol. Students will also use concrete models, manipulatives, and inverse operations to solve equations with variables on both sides of the equal sign, represent solutions to equations and determine if a solution makes an equation true. To build conceptual understanding for solving equations it is essential that all the students have practice with writing equations, then representing and solving with models before solving using inverse operations.

**At home connections:**

- Have students explain real life situations in which using an equation would be helpful.
- Identify situations where an inequality could be applied and discuss why.

| Concepts within Unit # 4<br>Link to TEKS | Success Criteria for this concept |
|---|---|
| Concept #1: Representing Equations and Inequalities<br>TEKS: 8.8A, 8.8B | • Understand and explain the similarities and differences between equations and inequalities in verbal and mathematical statements.<br>• Identify which scenarios represent equations and which represent inequalities.<br>• Write a real-world scenario when given an equation or an inequality.<br>• Represent real world scenarios using a one variable equation/inequality with variables on both sides. |
| Concept #2: Model, write, and Solve Equations<br>TEKS: 7.11C, 8.8A, 8.8C, 8.9A | • Model and write one variable equations with variables on both sides of the equal sign using in mathematical and real-world context:<br>  ○ concrete models<br>  ○ pictorial models<br>  ○ graphs<br>  ○ algebraic methods<br>• Solve one variable equations with variables on both sides of the equal sign using:<br>  ○ concrete models |

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| | ○ pictorial models<br>○ graphs<br>○ algebraic methods<br>• Explain the meaning of solutions to equations.<br>• Evaluate reasonableness of solutions after solving for the unknown.<br>• Write and solve equations using geometry concepts including sum of angles in a triangle and exterior angles of a triangle.<br>• Write and solve equations using geometry concepts including complementary and supplementary angles.<br>• Label remote interior angles and exterior angle when a line segment of a triangle is extended.<br>• Explain the relationship between the remote interior angles of a triangle and its exterior angle.<br>• Model with an equation the relationship between the sum of the remote interior angles in a triangle and its exterior angle.<br>• Find a missing value in a triangle using the relationship between the sum of the remote interior angles in a triangle and its exterior angle.<br>• Understand the vocabulary related to the angle relationships when a line (transversal) intersects a pair of parallel lines.<br>• Label the angles formed when parallel lines are cut by a transversal (vertical angles, corresponding angles, alternate exterior angles, alternate interior angles, same side interior angles, same side exterior angles, and linear pairs).<br>• Explain the angle relationships formed when parallel lines are cut by a transversal.<br>• Write equations based on angles relationships of parallel lines and a transversal.<br>• Solve for a missing angle given a diagram of parallel lines cut by a transversal. |
| Concept #3: Inductive Reasoning<br>TEKS: 8.8D | ○ Use informal arguments to establish facts<br>○ Angles in triangles<br>○ Angles formed by parallel lines and a transversa<br>○ Similar triangles |
| Concept #4: Application of Pythagorean Theorem<br>TEKS: 8.6C, 8.7C, 8.7D | • Identify and define the parts of a right triangle.<br>○ right angle<br>○ legs<br>○ hypotenuse<br>• Understand that taking the side length to the second power produces the area of the square.<br>• Explain the relationship between the squares formed by the legs and the hypotenuse.<br>• Use a concrete manipulative or a pictorial representation to explain the Pythagorean Theorem. Justify whether three measurements form a right triangle using a variety of methods, including the converse of Pythagorean Theorem.<br>• Calculate missing measurements of right triangles in mathematical and real-world situations using the Pythagorean Theorem, models and diagrams.<br>• Determine the distance between two points on a coordinate plane using the Pythagorean Theorem. |
| **Unit 5: Linear Relationships (Continues in Grading Period 3)**<br>Estimated Date Range: Nov. 18 – Jan. 30 (35 total school days)<br>Instructional & Re-engagement Days in Unit: 32 days (19 days in GP2 and 13 days in GP3) | |
| **Assessments** | |

| STATE/NATIONAL ASSESSMENTS<br>N/A | DISTRICT ASSESSMENTS<br>NWEA MAP MOY (1/27 – 1/29) 3 days | COMMON FORMATIVE ASSESSMENT (CFAs)<br>N/A |
|---|---|---|

**Unit Overview:** In this unit, students will expand on their understanding of linear relationships and proportional relationships. Students will develop the concept of slope using similar triangles and relate this understanding to their understanding of rate, constant of proportionality and unit rate. Students will determine if a relation is a function from multiple representations. Students will write equations of linear in slope-intercept form from various representations.

**At home connections:**

- Have students describe real world examples of rate and slope. (speed, pitch of a roof, etc.)
- Have students determine linear situations in their environment (I.e., monthly expenses of a mortgage payment and electric bill) and discuss why it is a linear relationship.

| Concepts within Unit # 5<br>Link to TEKS | Success Criteria for this concept |
|---|---|
| Concept #1: Intro to Functions<br>TEKS: 8.5G | • Define a function in terms of dependent and independent variables.<br>• Determine if a relation is a function from a set of ordered pairs.<br>• Determine if a relation is a function from a table.<br>• Determine if a relation is a function from a mapping.<br>• Determine if a relation is a function from a graph. |
| Concept #2: Rate of Change and Slope and y-intercept<br>TEKS: 8.4A, 8.4C | • Understand that slope represents the measure of steepness of a line.<br>• Explain why the rate of change between two points on a line is the same for any two points on a line using similarity.<br>• Determine the rate of change or slope from a table or a graph.<br>• Determine the slope in mathematical problems and real-world situations.<br>• Describe the meaning of the slope in real world context.<br>• Determine y-intercept from a table or graph<br>• Describe the meaning of the y-intercept in real world context |
| Concept #3 Understanding Proportional Linear Functions<br>TEKS: 8.4B, 8.5A, 8.5E | • Represent a mathematical or real-world proportional relationship using<br>  ○ a table<br>  ○ a graph<br>  ○ an equation, $y = kx$<br>• Connect unit rate as the slope of the line<br>• Make connections between a table, a graph, and an equation for slope and y-intercept.<br>• Determine the constant of variation in a direct variation problem.<br>• Use the constant of variation in a direct variation problem to find the missing variable.<br>• Use a proportion to solve a direct variation problem.<br>• Make predictions using direct variation. |
| Concept #4: Understanding Non-Proportional Linear Functions<br>TEKS: 8.5B, 8.5F, 8.5H, 8.5I, 8.9A | • Represent a mathematical or real-world non-proportional relationship using<br>  ○ a table<br>  ○ a graph<br>  ○ an equation, $y = mx + b$<br>• Make connections between a table, a graph, and an equation for slope and y-intercept.<br>• Make connections between proportional and non-proportional relationships and situations represented by linear functions.<br>• Determine if a relationship is proportional or non-proportional. |

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| | • Identify values of x and y that simultaneously satisfy two graphed linear equations<br>• Verify the values of x and y simultaneously satisfy two linear equations |
| Concept #5: Scatter Plots and Making Predictions<br>TEKS: 8.5C, 8.5D, 8.11A | • Determine if a graph models linear or non-linear relationships.<br>• Determine the type of correlation, i.e., positive, negative, or no correlation.<br>• Construct scatterplots without technology from a real-world context.<br>• Construct scatterplots with technology from a real-world context.<br>• Given a scatterplot, draw an appropriate trend line.<br>• Using multiple representations, create a scatterplot with and without technology and draw an appropriate trend line.<br>• Use a trend line to make predictions about the independent variable.<br>• Use a trend line to make predictions about the dependent variable.<br>• Explain how a linear model is used to make predictions from the data. |

## Grading Period 3

## Unit 5: Linear Relationships (Continued)

Estimated Date Range: Nov. 18 – Jan. 30 (35 total school days)
Instructional & Re-engagement Days in Unit: 32 days (19 days in GP2 and 13 days in GP3)

## Unit 6: Circumference & Area of 2-D Figures

Estimated Date Range: Dec. 2 - Jan. 17
Estimated Time Frame: 22 days

| STATE/NATIONAL ASSESSMENTS | DISTRICT ASSESSMENTS | COMMON FORMATIVE ASSESSMENT (CFAs) |
|---|---|---|
| K-12 TELPAS Window (2/17 – 3/27) | N/A | Unit 6, 7.9B and 7.9C (1 Day)<br>Testing Window: Feb. 17 – Feb. 24 |

**Unit Overview:** In this unit, students will discover Pi and how it is the ratio of the circumference to the diameter. Students learn to represent the relationship between the parts of the circle and circumference with pictures, graphs, and algebraically. Based on the ratio of circumference to diameter, students will then identify how to calculate circumference of a circle when provided with the radius or the diameter. Students will explore and determine how to calculate area of circles based on what they know about the area of a parallelogram by using manipulatives and technology to make the connections. Students will need to be able to apply the knowledge of area and circumference to different real-world situations. In this unit, students will use their prior knowledge of area of polygons and circles to determine area of composite figures.

**At home connections:**

- Have the student find various circular objects in the home and measure the radius and diameter.
- Have the student find various circular objects in the home and determine the area and circumference.
- Ask the student to create a composite figure using 2-dimensional figures and determine the area of each shape and the composite area.
- Ask the student to research and explain the origin and value of pi.

| Concepts within Unit # 6<br>Link to TEKS | Success Criteria for this concept |
|---|---|
| Concept #1: Circumference and Area of Circles<br>TEKS: 7.5B, 7.8C, 7.9B | • Identify the radius, diameter, and circumference of the circle.<br>• Explain the relationship of radius and diameter of a circle.<br>• Understand that the relationship between the circumference of a circle and its diameter is a constant rate by comparing different size circles dimensions.<br>• Define what Pi represents. |

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| | • Use my knowledge of the ratio of pi to determine how to calculate circumference.<br>• Determine circumference when given radius or diameter of a circle.<br>• Determine the circumference of a circle in real world application problems.<br>• Decompose a circle into small triangular sections to make connections between area of a circle and area of a parallelogram.<br>• Use the connections to approximate the formula for area of a circle.<br>• Calculate the area of a circle when given radius or diameter.<br>• Apply the formula for area of a circle to solve real world application problems.<br>• Identify and explain which real-world situations represent area of a circle and which ones represent circumference. |
| Concept #2: Area of Composite Figures<br>TEKS: 7.9C | • Decompose a composite shape into simple shapes such as square, rectangle, triangle, trapezoid, semi-circles, and quarter circles<br>• Identify the correct dimensions needed to find the area of the simple shapes.<br>• Model the area of a composite figure with an illustrated equation.<br>• Enclose a composite shape into a rectangle to solve for area of the composite shape.<br>• Determine the area of a composite shape involving two or more simple shapes.<br>• Solve application problems involving composite area.<br>• Determine the reasonableness of the area I calculated for the composite figure.<br>• Determine the area of a shaded or unshaded region within a figure. |

## Unit 7: Volume & Surface Area of 3-D Figures (Continues in Grading Period 4)

Estimated Date Range: Feb. 25 – Mar. 25 (15 total school days)
Instructional & Re-engagement Days in Unit: 14 days (11 in GP3 and 3 in GP4)

### Assessment

| STATE/NATIONAL ASSESSMENTS | DISTRICT ASSESSMENTS | COMMON FORMATIVE ASSESSMENT (CFAs) |
|---|---|---|
| K-12 TELPAS Window (2/17 – 3/27) | N/A | Unit 7, 8.7B (1 Day)<br>Testing Window: Mar. 3 – Mar. 13 n |

**Unit Overview:** In this unit, students will make the bridge from 2-D shapes into 3-D shapes from composite area to finding the surface area using nets and the formula. Students will only focus on rectangular prims and pyramids and triangular prisms and pyramids using nets and then apply the formula for those shapes as well as cylinders. Students will need to be able to determine the net of these figures when given a 3-D picture or model. They will need to be able to identify the location of the dimensions when the prisms or pyramids are drawn 3-D or 2-D in the shapes net. Students will need to be able to calculate the lateral and total surface area of the figures and be able to understand and explain the difference between the two as well as apply it to real world scenarios. As the students move into volume of the same figures they will focus on cylinders, cones, and spheres which are the new shapes. The students need to be able to model and understand how the volume formula is derived as well as the relationship between cylinders, cones, and spheres with congruent bases and heights. Once the formula and relationship is understood students will solve real-world application problems involving volume of cylinders, cones, spheres, as well as prisms and pyramids.

**At home connections:**

- Have students identify objects within their environment that are rectangular prisms, triangular prisms, and cylinders and explain how to find the surface area and lateral area of the object.
- Have students research when it would be meaningful to find the volume of cones, cylinders, and spheres.

| Concepts within Unit # 7<br>Link to TEKS | Success Criteria for this concept |
|---|---|
| Concept #1: Surface Area<br>TEKS: 7.9D, 8.7B | • Identify the shape of a figure when given the net.<br>• Identify the bases of figures when given 3-D figures or nets. |

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| | • Identify different nets that represent prisms, pyramids, and cylinders.<br>• Decompose 3-D figures into a net and label appropriate dimensions to determine total or lateral surface area.<br>• Identify the dimensions needed to find lateral of total surface area of figure.<br>• Explain the difference between lateral and total surface area.<br>• Identify whether a situation is lateral or total surface area.<br>• Calculate total surface area when given a 3-D figure or a net.<br>• Calculate lateral surface area when given a 3-D figure or a net.<br>• Use a net that represents a prism or cylinder in a given situation to assist with making connections between the lateral and total surface areas.<br>• Explain the connections between the area of a net and the total and lateral surface area formulas of a prism/cylinder.<br>• Understand how the surface area formula connects to the dimensions of the figures.<br>• Solve for lateral and total surface area in real world contexts including rectangular prisms, triangular prisms, and cylinders<br>• Differentiate between the similarities and differences between lateral and total surface area in mathematical and real-world applications<br>• Justify and explain the reasonableness of a solution (measurement of a dimension, lateral or total surface area) as it relates to the context within a real-world situation. |
| Concept #2: Volume of 3-D Figures<br>TEKS: 7.9A, 8.6A, 8.6B, 8.7A, 7.8A, 7.8B | • Identify the shape that is given or described in a problem.<br>• Explain in words and mathematically the relationships between volume of a cylinder and cone with congruent bases and heights.<br>• Explain in words and mathematically the relationships between volume of a cylinder and sphere with congruent radii and heights.<br>• Explain in words and mathematically the relationship between volume of a triangular prism and a triangular pyramid<br>• Determine which real-world applications are asking for volume.<br>• Correctly identify the base(s), radius, and height of the figure.<br>• Identify the appropriate formula for the volume of the figure.<br>• Calculate volume of 3-D figures when given pictures including:<br>  ○ Rectangular prisms and pyramids<br>  ○ Triangular prisms and pyramids<br>  ○ Cylinders, cones and spheres<br>• Solve application problems involving volume of 3-D figures including:<br>  ○ Rectangular prisms and pyramids<br>  ○ Triangular prisms and pyramids<br>  ○ Cylinders, cones and spheres<br>• Solve for a measurement of a dimension when given the volume of a figure.<br>• Justify the reasonableness of my solution through estimation, explanation of context, or describing the relationships of the dimensions and the volume. |

| **Grading Period 4** |
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| **Unit 7: Volume & Surface Area of 3-D Figures (Continued)**<br>Estimated Date Range: Feb. 25 – Mar. 25 (15 total school days)<br>Instructional & Re-engagement Days in Unit: 14 days (11 in GP3 and 3 in GP4) |
| **Unit 8: Similarity and Transformations**<br>Estimated Date Range: Mar. 26 – May 12 (33 total school days) |

| Instructional & Re-engagement Days in Unit: 31 days | | |
|---|---|---|
| **Assessments** | | |
| **STATE/NATIONAL ASSESSMENTS**<br>K-12 TELPAS Window (2/17 – 3/27)<br>STAAR RLA (4/7 – 4/9) 1 day<br>STAAR Math (4/21 – 4/23) 1 day | **DISTRICT ASSESSMENTS**<br>N/A | **COMMON FORMATIVE ASSESSMENTS (CFAs)**<br>N/A |

**Unit Overview:** Students will apply their prior knowledge of coordinate grids: including the use of the *x* and *y*- axis & the four quadrants. Proportional relationships will be used to describe dilations. Students will generalize that the ratio of corresponding sides of similar figures are proportional, including a shape and its dilation, compare and contrast the attributes of a shape and its dilations on a coordinate plane, and explain the effect of a given positive rational scale factor applied to two-dimensional figures using algebraic representation. Students will explore transformational geometry concepts such as translations, reflections, rotations, and dilations and differentiate between transformations that preserve congruence and/or orientation and those that do not. Students will use models to show the effect of dilations to linear and area measurements. Students will continue to use geometry to solve problems using the Pythagorean Theorem to calculate the distance between two points on a shape's pre-image and/or image and use informal arguments to establish facts about the angle-angle criterion for similarity of triangles. The concepts in this unit include the following: Translations, Rotations and Reflections, Dilations and Effects of Dilation on Linear and Area Measurements.

**At home connections:**

- Have students research how algebraic representations of transformations are used in different jobs.
- Have students measure an object in their environment (I.e. fireplace, porch, kitchen table, garden) and ask them how they think doubling/halving the measurements will affect the area and perimeter of the object.

| | |
|---|---|
| Concept #1: Similar Figures<br>TEKS: 7.5A, 7.5C | • Identify corresponding angles and corresponding sides in two figures.<br>• Write and simplify a ratio to determine if two figures are similar or not.<br>• Determine a missing side length using a proportion when provided an image of similar figures.<br>• Solve a real-world problem using proportions and scale factors.<br>• Use a scale on map to solve problems.<br>• Use a provided scale to solve real-world problems. |

| | |
|---|---|
| Concept #2: Dilations<br>TEKS: 8.3A, 8.3B, 8.3C, 8.10A, 8.10B, 8.10D | • Explain the relationship between the corresponding side lengths of a pre-image and an image.<br>• Generalize the ratio/scale factor of corresponding sides of similar figures.<br>• Explain the relationship between the corresponding angle measures in a pre-image and an image of dilated figures. (Include angle-angle criterion).<br>• Explain the multiplicative relationship when dilating a shape.<br>• Identify the scale factor being multiplied to each coordinate pair of the pre-image in real world situations.<br>• Create an algebraic representation to prove a dilation.<br>• Use an algebraic representation to create a dilated image or list new coordinates.<br>• Model the effect of dilation on linear and area measurements numerically and algebraically.<br>• Analyze the effect on area after a shape has been dilated.<br>• Analyze the effect on perimeter of a dilated shape.<br>• Describe the effects of scale factor on perimeter/circumference of shapes.<br>• Describe the effects of scale factor on the area of shapes.<br>• Compare and contrast the attributes of a shape and its dilation on a coordinate plane<br>• Generalize the properties of orientation and congruence of dilations on a coordinate grid |
| Concept #3: Translations, Rotations, and Reflections<br>TEKS: 8.10A, 8.10B, 8.10C | • Identify and define translations, rotations, and reflections.<br>• Compare and contrast translations, rotations, and reflections.<br>• Identify and define which transformations change congruence and orientation.<br>• Model translations, rotations, and reflections using a coordinate grid.<br>• Define the coordinates of a transformed image using a model.<br>• Verbally explain the movement of a transformation.<br>• Describe a transformation given an algebraic representation of a transformation. (I.e. *y+4* represents up four units).<br>• Use an algebraic representation to model a transformed image. |

**Unit 9: Financial Literacy**
Estimated Date Range: May 7 – May 29
Estimated Time Frame: 16 days

| STATE/NATIONAL ASSESSMENTS | DISTRICT ASSESSMENTS | COMMON FORMATIVE ASSESSMENTS (CFAs) |
|---|---|---|
| N/A | NWEA MAP EOY (5/12 – 5/14) 3 days | N/A |

**Unit Overview:** In this unit, students will learn the basic concepts of financial literacy in regards to spending and the importance of saving for the future. Students will use technology to solve problems comparing the interest rate and loan length, and calculate the cost of repaying a loan. Students will formulate strategies for making good financial decisions by investigating the different types of credit, loans, and the costs associated with borrowing money and various methods of payment. Students will conclude the unit by identifying situations that represent financially responsible decisions, and estimate the costs of attending various education institutions.

**At home connections:**

- Have students choose a vacation destination and research the total cost for 5 days (travel, lodging, food, activities). Once the total cost has been determined and a date has been decided, have them devise a savings plan involving interest to save for the vacation.
- Have students choose a car online that they would like to purchase. Have them determine the total cost of the car if they were to finance the car with a down payment.

| Concepts within Unit # 9<br>Link to TEKS | Success Criteria for this concept |
|---|---|
| Concept #1: Purchasing Power<br>TEKS: 8.12E | • Create a chart of the characteristics of various methods of payment.<br>• Investigate and discuss the advantages and disadvantages of using various methods of payment.<br>• Participate in a discussion on how consumers pay for needs/wants. |
| Concept #2: Financial Responsibility<br>TEKS: 7.13B, 7.13C, 7.13D, 8.12F | • Identify the components of a family budget and different expenses that are included in each.<br>• Calculate percentages of a budget that each category comprises of the total budget.<br>• Define and differentiate between fixed and variable expenses.<br>• Define and differentiate between assets and liabilities.<br>• Use knowledge of assets and liabilities to create a net worth statement.<br>• Determine how to improve different peoples net worth when given scenarios.<br>• Use a family budget estimator to determine minimum hourly wage or salary needed to meet a family's needs.<br>• Compare minimum wages needed for family budgets when living in different cities and states.<br>• Identify and analyze characteristics of financially responsible and irresponsible decisions.<br>• Identify and analyze real world financial scenarios. |
| Concept #3: Interest, Borrowing and Saving<br>TEKS: 8.12EA, 8.12B, 8.12C, 8.12D, 8.12G | • Calculate simple interest earned on different principal amounts over different time-periods.<br>• Calculate compound interest earned on different principal amounts over different time-periods.<br>• Explain the difference between simple and compound interest.<br>• Compare simple and compound interest earnings for different principal amounts and over different time periods.<br>• Investigate various situations of spending habits.<br>• Explain ways consumers spend/save money.<br>• Explore the various types of investments and various variables when saving money.<br>• Use an online banking calculator to compare earnings on interest rates on loans.<br>• Calculate simple/compound interest in real world financial situations.<br>• Explore various options consumers have to borrow money.<br>• Investigate and compare various types of interest rates consumers can pay lenders when repaying borrowed money.<br>• Solve real world financial problems comparing how interest rates and loan lengths affect the total cost of borrowed money.<br>• Use an online banking calculator to compare how interest rates and loan lengths affect the total cost of borrowed money.<br>• Research the related costs of attending college.<br>• Estimate the amount for 2 or 4 years of college.<br>• Devise a realistic plan on how to save for the first year of college.<br>• Research earnings for future career.<br>• Research colleges/schools' tuition and years attended to obtain appropriate degree.<br>• Compare income to monthly student loan payments to final pay off amount/time. |

**Glossary of Curriculum Components**

**Overview**– The content in this document provides an overview of the pacing and concepts covered in a subject for the year.
**TEKS** – Texas Essential Knowledge and Skills (TEKS) are the state standards for what students should know and be able to do.
**Unit Overview** – The unit overview provides a brief description of the concepts covered in each unit.
**Concept** – A subtopic of the main topic of the unit.
**Success Criteria**—a description of what it looks like to be successful in this concept.

**Parent Resources**

The following resources provide parents with ideas to support students' understanding. For sites that are password protected, your child will receive log-in information through their campus.

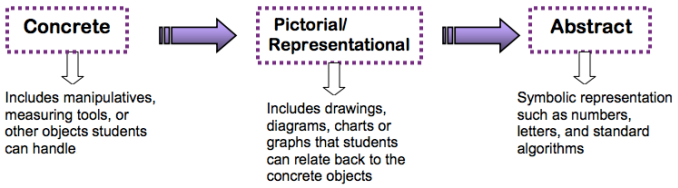
| Resource | How it supports parent and students |
|---|---|
| Open Up Resources – Family Resources (Grade 7)<br><br>Open Up Resources – Family Resources (Grade 8) | This is a family resource for information regarding the content that is being covered in your student's math class. Please note the units do not align to the unit's in FBISD's curriculum, however the content aligns. |
| Didax Virtual Manipulatives<br><br>Math Learning Center Math Apps<br><br>Polypad: Mathigon – Virtual Manipulatives | These online resources provide access to virtual manipulatives. |
| Parent Resources from youcubed.org | This resource from youcubed.org includes articles for parents on ways to support their students in learning and understanding mathematics. |
| Student Resources from youcubed.org | This resource from youcubed.org includes videos concerning growth mindset in mathematics. |
| Math: Why Doesn't Yours Look Like Mine? | This resource provides an explanation of why math looks different now as opposed to how parents learned mathematics and how to support students in learning mathematics. |

**Supplemental Resource and Tool Designation:**

- The TI Nspire CX calculator is a standardized technology integration tool used for Mathematics and Science in FBISD.

**Instructional Model**

The structures, guidelines or model in which students engage in a particular content that ensures understanding of that content.




The instructional model for mathematics is the Concrete-Representational-Abstract Model (CRA).
The CRA model allows students to access mathematics content first through a concrete approach ("doing" stage) then representational ("seeing" stage) and then finally abstract ("symbolic" stage). The CRA model allows students to conceptually

develop concepts so they have a deeper understanding of the mathematics and are able to apply and transfer their understanding across concepts and contents. The CRA model is implemented in grades K-12 in FBISD.

**Math Workshop:**

During math instruction in grades K-8 in FBISD, we follow the Math Workshop structures. Instruction during a math class follows one of the three structures: Task and Share, Mini Lesson, Guided Math and Learning Stations, and Guided Math and Learning Stations. The structure that is used each day is determined by the content covered as well as student need.

<table>
<tr><th>Task and Share</th><th colspan="2">Mini Lesson, Guided Math and Learning Stations</th><th colspan="2">Guided Math and Learning Stations</th></tr>
<tr><td>Number Sense Routine</td><td colspan="2">Number Sense Routine</td><td colspan="2">Number Sense Routine</td></tr>
<tr><td rowspan="2">Math Task</td><td colspan="2">Mini Lesson</td><td rowspan="2">Guided Math</td><td rowspan="2">Learning Stations</td></tr>
<tr><td>Guided Math</td><td>Learning Stations</td></tr>
<tr><td>Task Share and Student Reflective Closure</td><td colspan="2">Student Reflective Closure</td><td colspan="2">Student Reflective Closure</td></tr>
</table>

**Number Sense Routine** – An engaging accessible, purposeful routine to begin math class that promotes a community of positive mathematics discussion and thinking.

**Math Task** – A problem-solving task that students work on in small groups. The teacher monitors and probes student thinking through questions. The task should have multiple entry points, allowing all students to have access to the problem.

**Task Share with Student Reflective Closure** – Students come together as a whole class and discuss the various strategies they used to solve a rich mathematical task. Students ask questions, clarify their thinking, modify their work, and add to their collection of strategies.

**Mini Lesson –** A well-planned whole group lesson focused on the day's learning intention and accessible to all levels of learners.

**Guided Math –** Small group instruction that allows the teacher to support and learn more about students' understandings and misconceptions. Can include intervention, more on-level support, or enrichment.

**Learning Stations** – Activity in which students engage in meaningful mathematics and are provided with purposeful choices. Could include individual, partner or group tasks.

**Student Reflective Closure –** A deliberate and meaningful time for students to reflect on what they have learned and experienced during a math task, at activities in learning stations, or in a guided math group.

**Unit Overview:** Students will apply their prior knowledge of coordinate grids: including the use of the *x* and *y*- axis & the four quadrants. Proportional relationships will be used to describe dilations. Students will generalize that the ratio of corresponding sides of similar figures are proportional, including a shape and its dilation, compare and contrast the attributes of a shape and its dilations on a coordinate plane, and explain the effect of a given positive rational scale factor applied to two-dimensional figures using algebraic representation. Students will explore transformational geometry concepts such as translations, reflections, rotations, and dilations and differentiate between transformations that preserve congruence and/or orientation and those that do not. Students will use models to show the effect of dilations to linear and area measurements. Students will continue to use geometry to solve problems using the Pythagorean Theorem to calculate the distance between two points on a shape's pre-image and/or image and use informal arguments to establish facts about the angle-angle criterion for similarity of triangles. The concepts in this unit include the following: Translations, Rotations and Reflections, Dilations and Effects of Dilation on Linear and Area Measurements.

| **At home connections:**<br>• Have students research how algebraic representations of transformations are used in different jobs.<br>• Have students measure an object in their environment (I.e., fireplace, porch, kitchen table, garden) and ask them how they think doubling/halving the measurements will affect the area and perimeter of the object. | |
|---|---|
| **Concepts within Unit # 2**<br>**Link to TEKS** | **Success Criteria for this concept** |
| Concept #1: Similar Figures<br>TEKS: 7.5A, 7.5C, 8.8D | • Identify corresponding angles and corresponding sides in two figures.<br>• Write and simplify a ratio to determine if two figures are similar or not.<br>• Determine a missing side length using a proportion when provided an image of similar figures.<br>• Solve a real-world problem using proportions and scale factors.<br>• Use a scale on a map to solve problems.<br>• Use a provided scale to solve real-world problems.<br>• Use informal arguments to explain how to use AA similarity to determine if triangles are similar. |
| Concept #2: Dilations<br>TEKS: 8.3A, 8.3B, 8.3C, 8.10A, 8.10B | • Explain the relationship between the corresponding side lengths of a pre-image and an image.<br>• Generalize the ratio/scale factor of corresponding sides of similar figures.<br>• Explain the relationship between the corresponding angle measures in a pre-image and an image of dilated figures. (Include angle-angle criterion).<br>• Explain the multiplicative relationship when dilating a shape.<br>• Identify the scale factor being multiplied to each coordinate pair of the pre-image in real world situations.<br>• Create an algebraic representation to prove a dilation.<br>• Use an algebraic representation to create a dilated image or list new coordinates. |
| Concept #3: Translations, Rotations, and Reflections<br>TEKS: 8.3C, 8.10A, 8.10B, 8.10C | • Identify and define translations, rotations, and reflections.<br>• Compare and contrast translations, rotations, and reflections.<br>• Identify and define which transformations change congruence and orientation.<br>• Model translations, rotations, and reflections using a coordinate grid.<br>• Define the coordinates of a transformed image using a model.<br>• Verbally explain the movement of a transformation.<br>• Describe a transformation given an algebraic representation of a transformation. (I.e. *y+4* represents up four units).<br>• Use an algebraic representation to model a transformed image. |