

2nd Grade Math Overview 2022 - 2023

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 literacy/numeracy development 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.

- *Engage students in problem solving during day-to-day decisions and reasoning through outcomes of decisions*
- *Explaining order or process to completing day to day tasks*
- *Encourage students to justify choices made in day-to-day activities*
- *Discuss scenarios involving math in everyday life and determine the operations needed to solve the problem*
- *Play games that require logic and reasoning skills or basic operations.*
- *Play sudoku and other brain teaser type puzzles*
- *Practice addition and subtraction facts with real world objects. i.e., How many tires on the 5 cars in front of us?*

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.

- 2.1A apply mathematics to problems arising in everyday life, society, and the workplace
- 2.1B 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
- 2.1C 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
- 2.1D communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate
- 2.1E create and use representations to organize, record, and communicate mathematical ideas
- 2.1F analyze mathematical relationships to connect and communicate mathematical ideas

2.1G display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication

Grading Period 1

Unit 1: Launching Mathematical Mindsets

Estimated Date Range: 8/10/22 – 8/26/22

Estimated Time Frame: 13 Days

Unit Overview: This unit begins with 8 days of Launching Mathematical Mindsets. Students will engage in activities that support setting up the systems and structures needed to promote mathematical communication and collaboration in a face to face or virtual environment. The focus is on students getting used to classroom routines while engaging in math related activities that promote sense making, perseverance, and teamwork. The last 5 days include students understanding how to tell time to the nearest minute using an analogue and digital clock and understanding AM and PM.

At home connections:

- Use positive affirmations to build students self-confidence.
- Randomly ask what the time is and whether it is a.m. or p.m.
- Involve students in writing down scheduled activities and watching the clock to determine if it is time to leave.

Concepts within Unit #1 Link to TEKS	Success Criteria for this concept
Concept #1: Launching Mathematical Mindsets	In this unit we are Launching Mathematical Mindsets using You Cubed resources along with supports for setting up Math Workshop in the classroom. The focus is on students getting used to classroom routines while engaging in activities that support pre-requisite skills and promote sense making, perseverance, and teamwork.

Unit 2: Numeration (up to 999)

Estimated Date Range: 8/29/22 – 9/27/22

Estimated Time Frame: 20 days

Unit Overview: In this unit, students will develop an understanding of how to represent numbers in multiple ways, determine number patterns, and compare and order whole numbers up to 999. Students will also develop an understanding of the relative position and magnitude of whole numbers and the relationships within the numeration system related to place value.

At home connections:

- Find groups of objects in the real world that are set up in groups (e.g., a package of foam plates with a count of 50 or 100).
- Practice grouping objects into tens and ones (e.g., uncooked kidney beans).
- Describe real-world situations that involve comparing and ordering numbers.

Concepts within Unit #2 Link to TEKS	Success Criteria for this concept
Concept #1: Representing Numbers 2.2A, 2.2B, 2.2E, 2.2F, 2.9C	<ul style="list-style-type: none"> • Write numbers in standard form and expanded form. • Read a number knowing the place value of a digit. • Represent numbers using objects and pictures. • Compose and decompose numbers with groupings of hundreds, tens, and ones using <ul style="list-style-type: none"> ○ objects ○ pictorial models

	<ul style="list-style-type: none"> ○ numbers • Name a whole number that corresponds to a point on a number line. • Represent a number on a closed number line. • Represent a number on an open number line. • Represent number as a distance from any given number on a number line.
<p>Concept #2: Compare and Order Numbers 2.2D, 2.2A, 2.2B, 2.2C, 2.2E, 2.2F, 2.7B, 2.9C, 2.2E</p>	<ul style="list-style-type: none"> • Determine and explain a number that is greater than a number given. • Determine and explain a number that is less than a number given. • Use place value to compare numbers using comparative language (greater than, less than, equal to). • Represent the comparison of numbers on a number line or using symbols. • Use place value understanding to compare whole numbers. • Compare different sets of numbers that have been decomposed with groupings of hundreds, tens, and ones. • Use place value to order whole numbers using comparative language (greater than, less than, and equal to). • Use place value to order whole numbers. • Order different sets of numbers that have been decomposed with groupings of hundreds, tens, and ones. • Use place value understanding when justifying the determination of a number that is greater than or less than a given number.
<p>Unit 3: Addition & Subtraction (up to 99) Estimated Date Range: 9/28/22 – 11/11/22 Estimated Time Frame: 31 Days (8 Days in GP1 and 23 Days in GP2)</p>	
<p>Unit Overview: In this unit, students will develop an understanding of representing, solving, and generating word problems involving addition and subtraction with numbers up to 99 where any one of the terms in the problem may be unknown. Students will make connections between representations and the actions of a word problem, as well as enhance their own mathematical toolboxes by utilizing a variety of place value strategies to solve word problems. Students will also connect problem solving with counting a collection of coins through real-world context.</p> <p>At home connections:</p> <ul style="list-style-type: none"> • Explain real-world situations that involve one and two-step addition and subtraction (e.g. earning and spending money). • Practice recalling basic facts within 20 with an emphasis on flexibility not speed (e.g. identifying patterns in determining all the number sets that equal 12). • Count various coins up to one dollar and record the value of the coins using the decimal point and the cent or dollar sign symbol. 	
<p>Concepts within Unit #3 Link to TEKS</p>	<p>Success Criteria for this concept</p>
<p>Concept #1: One Step Addition and Subtraction</p>	<ul style="list-style-type: none"> • Represent one-step problems involving addition or subtraction where any one of the terms in the problem are unknown. • Represent multi-step problems involving addition and/or subtraction where any one of the terms in the problem are unknown. Justify the operations represented in the pictorial models based on the actions of the word problem. • Predict a reasonable solution to the problem.

Grading Period 2

Unit 3: Addition & Subtraction (up to 99) (Continued)

Estimated Date Range: 9/28/22 – 11/11/22

Estimated Time Frame: 31 Days (8 Days in GP1 and 23 Days in GP2)

Unit Overview: In this unit, students will develop an understanding of representing, solving, and generating word problems involving addition and subtraction with numbers up to 99 where any one of the terms in the problem may be unknown. Students will make connections between representations and the actions of a word problem, as well as enhance their own mathematical toolboxes by utilizing a variety of place value strategies to solve word problems. Students will also connect problem solving with counting a collection of coins through real-world context.

At home connections:

- Explain real-world situations that involve one and two-step addition and subtraction (e.g. earning and spending money).
- Practice recalling basic facts within 20 with an emphasis on flexibility not speed (e.g. identifying patterns in determining all the number sets that equal 12).
- Count various coins up to one dollar and record the value of the coins using the decimal point and the cent or dollar sign symbol.

Concepts within Unit #3 Link to TEKS	Success Criteria for this concept
Concept #1: One Step Addition and Subtraction 2.7C, 2.4C	<ul style="list-style-type: none"> • Represent one-step problems involving addition or subtraction where any one of the terms in the problem are unknown. • Represent multi-step problems involving addition and/or subtraction where any one of the terms in the problem are unknown. Justify the operations represented in the pictorial models based on the actions of the word problem. • Predict a reasonable solution to the problem.
Concept #2: Multi-Step Addition and Subtraction 2.4C, 2.7C, 2.4A, 2.4B, 2.4D, 2.11A	<ul style="list-style-type: none"> • Represent and solve one-step problem involving addition or subtraction where any one of the terms in the problem are unknown. • Represent and solve multi-step problem involving addition or subtraction where any one of the terms in the problem are unknown. • Generate and solve word problems when given a number sentence where unknowns may be any one of the terms. • Recall basic facts to add and subtract within 20. • Add up to four two-digit numbers using various place value strategies. • Subtract two-digit numbers using various place value strategies.
Concept #3: Collection of Coins 2.5A, 2.5B	<ul style="list-style-type: none"> • Determine the value of a collection of coins up to one dollar. • Use the cent symbol, dollar sign, and decimal point appropriately to name the value of the collection of coins.

Unit 4: Personal Financial Literacy and Data Analysis

Estimated Date Range: 11/14/22 – 12/16/22

Estimated Time Frame: 20 Days

Unit Overview:

In this unit students will define money as earned income and a way to obtain goods and services. Students will also be introduced to the ideas of spending vs. saving and charitable giving. Students will apply financial literacy those situations as well as other real-world situations to collect, sort, and analyze data in up to three categories. They will

use data to create picture and bar-type graphs as well as draw conclusions from graphs. Students will also be able to generate and answer questions using information in the created graphs or graphs that are given to them.

At home connections:

- Identify times when you are spending money on needs versus wants.
- Discuss opportunities to earn income, have a lemonade stand, or garage sale.
- Find data based on a topic of interest sort and organize the data into categories.
- Create bar-type graphs to represent friends' or family's favorite colors, favorite foods, shoe size etc.

Concepts within Unit #4 Link to TEKS	Success Criteria for this Concept
Concept #1: Personal Financial Literacy 2.11A, 2.11B, 2.11C, 2.11D, 2.11E, 2.11F	<ul style="list-style-type: none"> • Calculate how money saved can accumulate into larger amounts over time. • Explain the difference between saving and spending. • Explain the difference between a deposit and a withdrawal. • Identify examples of borrowing. Explain the difference between responsible and irresponsible borrowing. • Identify examples of lending and evaluate lending decisions. • Explain the difference between producers and consumers. • Calculate the cost to produce a simple item.
Concept #2: Data Analysis 2.10C, 2.10B, 2.10D, 2.10A	<ul style="list-style-type: none"> • Write and solve one-step word problems using data in pictographs and bar graphs with intervals of one. • Create pictographs and bar graphs with intervals of more than one using a collection of data with up to four categories. • Use comparative language when describing data within the same graph. • Predict a numerical pattern to determine a trend form the data within the graph.

Grading Period 3

Unit 5: Numeration, Addition & Subtraction

Estimated Date Range: 1/5/23 - 2/16/23

Estimated Time Frame: 30 Days

Unit Overview:

In this unit, students will develop an understanding of how to compare and order whole numbers up to 1,200. They will also develop an understanding of representing, solving, and generating word problems involving addition and subtraction with numbers up to 1,000 where any one of the terms in the problem may be unknown. Students will make connections between representations and the actions of a word problem, as well as enhance their own mathematical toolboxes by utilizing a variety of place value strategies to solve word problems.

At home connections:

- Find groups of objects in the real-world that are set up in groups (e.g. a package of foam plates with a count of 30 or 100).
- Practice grouping objects into tens and ones (e.g. uncooked kidney beans).
- Describe real-world situations that involve comparing and ordering numbers.
- Explain real-world situations that involve one and two-step addition and subtraction (e.g. earning and spending money).
- Practice recalling basic facts within 20 with an emphasis on flexibility not speed (e.g. identifying patterns in determining all the number sets that equal 12).

Concepts within Unit #5 Link to TEKS	Success Criteria for this concept
Concept #1: Compare and Order (Up to 1,200) 2.2D, 2.2A, 2.2B, 2.2C, 2.2E, 2.2F, 2.7B, 2.9C	<ul style="list-style-type: none"> • Use place value to compare numbers using comparative language (greater than, less than, equal to). • Represent the comparison of numbers on a number line or using symbols. • Use place value understanding to compare whole numbers. • Use place value to order whole numbers using comparative language (greater than, less than, and equal to). Use place value to order whole numbers. • Represent the ordering of numbers on a number line and using symbols. • Use place value understanding when justifying the determination of a number that is greater than or less than a given number.
Concept #2: Addition and Subtraction (Up to 1,000) 2.4C, 2.7C, 2.4A, 2.4B, 2.4D	<ul style="list-style-type: none"> • Represent and solve one-step problem involving addition or subtraction where any one of the terms in the problem are unknown. • Generate and solve word problems when given a number sentence where unknowns may be any one of the terms. • Recall basic facts to add and subtract within 20. Add up to four two-digit numbers using various place value strategies. • Subtract two-digit numbers using various place value strategies.
Concept #3: Multi-Step Addition and Subtraction (Up to 1,000) 2.4C, 2.7C, 2.4A, 2.4B, 2.4D	<ul style="list-style-type: none"> • Add up to four two-digit numbers using various place value strategies. • Subtract two-digit numbers using various place value strategies.
Unit 6: Measurement Estimated Date Range: 2/21/23 - 3/24/23 Estimated Time Frame: 19 Days (14 Days in GP3 and 5 Days in GP4)	
<p>Unit Overview: In this unit, students will build from their understanding of nonstandard units of length (e.g. paperclips) to standard units of length (e.g. inches). Students will measure using customary and metric measuring tools to the nearest marked whole unit. They will be able to explain the relationship between the number of units needs and the size of the unit and use this knowledge to estimate length. They will determine area with concrete models counting squares and knowing that the number of squares represents the area in square units. This will build in future years to measuring and converting units of length and determining and using the formula for area and then finding surface area.</p> <p>At home connections:</p> <ul style="list-style-type: none"> • Use a variety of household objects to measure the length of items. Discuss why it takes fewer of one object than another to measure the same length. • Have students match times on an analog and digital clock. • When getting in the car, about to eat dinner, going to bed etc. Ask what time it is to the nearest hour or half hour and explain how they know. 	
Concepts within Unit #6 Link to TEKS	Success Criteria for this concept
Concept #1: Time 2.9G	<ul style="list-style-type: none"> • Read time using digital clocks to the nearest minute. • Write time using numbers in the form of a digital clock.

	<ul style="list-style-type: none"> • Read time to the nearest minutes using an analog clock. • Write time to the nearest minute using an analog clock. • Distinguish between events that occur in the a.m. and events that occur in the p.m.
<p>Concept #1: Length</p> <p>2.9D, 2.9A, 2.9B, 2.9C, 2.9E</p>	<ul style="list-style-type: none"> • Find the length of objects using concrete models for standard unit of lengths such as inch tiles. • Find the length of objects using concrete models for standard unit of length such as centimeter cubes. • Give specific examples and a description of how the longer the unit, then fewer unit needed to measure length. • Give specific examples and a description of how the shorter the unit, then more units needed to measure length. • Determine the length of an object to the nearest marked unit using a <ul style="list-style-type: none"> ○ ruler. ○ yardstick. ○ meter stick. ○ measuring tape. • Estimate length when given a problem involving length. • Determine a solution to a problem involving length. • Compare the estimated answer with the actual answer when measuring length to justify the reasonableness of the solution.

Grading Period 4

Unit 6: Measurement (Continued)

Estimated Date Range: 2/21/23 - 3/24/23

Estimated Time Frame: 19 Days (14 Days in GP3 and 5 Days in GP4)

Unit Overview:

In this unit, students will build from their understanding of nonstandard units of length (e.g. paperclips) to standard units of length (e.g. inches). Students will measure using customary and metric measuring tools to the nearest marked whole unit. They will be able to explain the relationship between the number of units needs and the size of the unit and use this knowledge to estimate length. They will determine area with concrete models counting squares and knowing that the number of squares represents the area in square units. This will build in future years to measuring and converting units of length and determining and using the formula for area and then finding surface area.

At home connections:

- Use a variety of household objects to measure the length of items. Discuss why it takes fewer of one object than another to measure the same length.
- Have students match times on an analog and digital clock.
- When getting in the car, about to eat dinner, going to bed etc. Ask what time it is to the nearest hour or half hour and explain how they know.

Concepts within Unit #7 Link to TEKS	Success Criteria for this concept
<p>Concept #3: Area</p> <p>2.9F, 2.9B</p>	<ul style="list-style-type: none"> • Determine the area of a rectangle using concrete models of square unit tiles. • Cover the rectangle with no gaps or overlaps. • Count the square units tiles to find the total number of square units.

	<ul style="list-style-type: none"> Describe the measurement using a number and the unit.
<p>Unit 7: Geometry Estimated Date Range: 3/27/23 - 4/18/23 Estimated Time Frame: 15 Days</p>	
<p>Unit Overview: In this unit, students will build on their understanding of two-dimensional shapes and three-dimensional figures beyond identifying and naming. Students will sort and classify two-dimensional shapes based on their attributes. Students will use their knowledge of two-dimensional shapes and attributes of three-dimensional figures to classify and sort three-dimensional figures.</p> <p>At home connections:</p> <ul style="list-style-type: none"> Go on a scavenger hunt around the house to identify 2-D and 3-D figures, name them, and describe their attributes. 	
<p>Concepts within Unit #7 Link to TEKS</p>	<p>Success Criteria for this concept</p>
<p>Concept #1: 2-D Shapes 2.8C, 2.8A, 2.8D, 2.8E</p>	<ul style="list-style-type: none"> Decompose two-dimensional shapes and name the resulting shape. Compose two-dimensional shapes when given the attributes. Classify and sort polygons with 12 or fewer sides according to attributes.
<p>Concept #2: 3-D Solids 2.8B, 2.8D</p>	<ul style="list-style-type: none"> Classify and sort three-dimensional figures using formal geometric language such as: <ul style="list-style-type: none"> number of edges number of vertices number of faces types of faces (two-dimensional shapes) Compose three-dimensional figures when given properties or attributes.
<p>Unit 8: Understanding Fractions Estimated Date Range: 4/19/23 - 5/5/23 Estimated Time Frame: 12 Days</p>	
<p>Unit Overview: In this unit, students will expand on their knowledge of partitioning objects into halves and fourths to include eighths. They will not only partition objects, but they should also demonstrate knowledge of how many fractional parts are needed to make a whole and to count fractional parts beyond a whole. Students will be able to explain that the number of fractional parts needed for a whole is proportional to the size of the fractional part.</p> <p>At home connections:</p> <ul style="list-style-type: none"> Practice cutting objects in fractional parts such as halves, fourths, and eighths (e.g. dividing a chocolate bar into fourths). Identify real-world situations where fractional parts are needed. 	
<p>Concepts within Unit #8 Link to TEKS</p>	<p>Success Criteria for this concept</p>
<p>Concept #1: Fractions 2.3B, 2.3A, 2.3C, 2.3D</p>	<ul style="list-style-type: none"> Identify examples and non-examples of halves, fourths, and eighths. Partition objects into equal parts and name the parts, including halves, fourths, and eighths using words. Use concrete objects to count fractional parts beyond one whole using words. Identify how many parts it takes to equal one whole.

	<ul style="list-style-type: none"> • Explain that the more fractional parts used to make a whole, the smaller part. • Explain that the fewer the fractional parts, the larger parts.
<p>Unit 9: Foundations of Multiplication & Division Estimated Date Range: 5/8/23 - 5/26/23 Estimated Time Frame: 14 Days</p>	
<p>Unit Overview: In this unit students will connect their understanding of addition with adding equal groups of objects. Students will develop their understanding of division by relating it to multiplication (adding equal groups) and their understanding of separating equal groups of objects. Students will understand the meaning of multiplication and division through using concrete and pictorial representations that lead to fact fluency.</p> <p>At home connections:</p> <ul style="list-style-type: none"> • Explain real-world situations that include adding equal sets (e.g., finding the value of a 3 packages of foam plates with a count of 50 or 100). • Explain real-world situations where a set of objects are separated into equal sets (e.g. sharing a 50 count package of candy among 5 people). 	
<p>Concepts within Unit #9 Link to TEKS</p>	<p>Success Criteria for this concept</p>
<p>Concept #1: Joining and Separating Equal Groups 2.7A, 2.6A, 2.6B</p>	<ul style="list-style-type: none"> • Model, create, and describe situations where equal sets of objects are joined. • Model, create, and describe situation where sets of objects are separated into equal sets.

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.

Competency—Standards-Based Grading communicates students’ understanding of the Texas Essentials Knowledge and Skills (TEKS). Using the TEKS, teachers developed grade-level competencies to communicate student progress in the Standards-Based gradebook. The competencies are the same for each grade-level content area (i.e. 1st grade math) across the district. Teachers report students’ progress on the competencies using learning progressions.

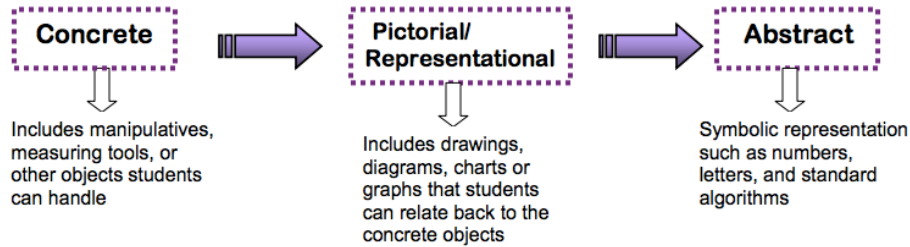
Parent Resources

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
Great Minds Eureka Math	This is the textbook for elementary school math. Click on the link for directions on accessing the textbook through clever.
Didax Virtual Manipulatives Math Learning Center Math Apps	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.
Math4Texas	This resource breaks down grade level standards, provides example questions, vocabulary, and links to online resources for students aligned to the standards.
ST Math	ST Math is an online program that supports the development of elementary math skills through games and online practice. This resource is aligned to the TEKS and is computer adaptive, so it will adapt to the academic needs of the user.

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.