

What We Do Here Shapes the World

Mathematics Curriculum 5th Grade

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District Mission:

Our mission is to provide a quality educational experience that results in the development of socially responsible life-long learners.

District Goals:

Goal 1: Environment and Culture

The District will maintain a safe and positive school environment where students, parents, employees, and community members feel welcomed and engaged.

Goal 2: Academics

The District's academic programs will take the learning experience beyond state and federal standards in an effort to provide college and career readiness for all students.

Goal 3: Professional Learning

The District will provide professional learning opportunities that allow staff to achieve a higher level of proficiency.

Goal 4: Resources and Operations

The District will effectively manage its resources and operations to maximize the learning potential for all students.

PROFILE OF A GRADUATE

los fresnos consolidated independent school district **PROFILE of a GRADUATE**

Future-ready innovative thinkers and leaders

- Evaluate various sources of information and use sound reasoning when making decisions.
- Solve problems using logic, critical thinking, and deductive reasoning.
- Collaborate with others to build consensus and solve problems.
- Demonstrate perseverance and resilience.
- Embrace technology and creative solutions to everyday problems.

Effective communicators



- Listen and respond respectfully and empathetically.
 - Confidently adapt their communication style to the audience.
 - Use various medias to engage in productive and positive dialogue.
 - Collaborate with others to engage in courageous conversations.

Conscientious citizens



- Exhibit self-discipline, honesty, kindness, and integrity.
- Serve the community as role models and through volunteerism.
- Embrace diversity and cultural awareness.
- Value and participate in the democratic process.

Life-long learners





- Commit to continuous improvement.
- Demonstrate mastery of required curriculum and skills.
- Prepare for college and workforce opportunities.
- Develop personal and professional goals that lead to a healthy, balanced lifestyle.

Content Vision:

At Los Fresnos CISD, our vision is to work in unison and be committed toward providing students with equitable, purposeful, rigorous, and engaging math instruction that will prepare them for the workforce. Ambitious expectations exist for all students, with accommodations for those who need it. The LFCISD Mathematics Curriculum will prepare students to be confident and self-motivated problem-solvers who can collaborate in an ethical manner in order to successfully apply mathematics in their personal and professional life. It is mathematically rich, offering students opportunities to learn important mathematical concepts and procedures with understanding. Both teacher and student value mathematics and actively engage in learning it.

Content Characteristics:

Teacher Behaviors: Teachers demonstrate acceptance of students' divergent ideas and challenge students to think deeply about the problems they are solving, reaching beyond the solutions and algorithms required to solve the problem. By doing this, the teacher ensures that students are explaining both how they found their solution and why they chose a particular method. Teachers influence learning by posing challenging and interesting questions that not only stimulate students' innate curiosity but also encourage them to investigate further.

Teachers instruct for conceptual understanding, developing children's procedural literacy, and promoting strategic competence through meaningful problem-solving investigations.

Teachers present topics in a sequence and manner appropriate for the developmental level of the students.

The teacher constantly builds students' sense of efficacy and instills in his or her students a belief that the goal of "doing mathematics" is attainable and that they are personally capable of reaching that goal.

CONTENT VISION AND CHARACTERISTICS

The teacher differentiates instruction through the use of tiered assignments and varying question levels. Scaffolding is practiced to make connections to concepts, procedures, and understanding as well as using students' experiences and prior knowledge to build new knowledge.

Student Behaviors: Students are actively engaged in doing mathematics. They are metaphorically rolling up their sleeves and "doing mathematics" themselves, not watching others do the mathematics for them or in front of them.

Students are solving challenging problems. They are investigating meaningful real-world problems whenever possible. Mathematics is not a stagnant field of textbook problems; rather, it is a dynamic way of constructing meaning about the world around us, generating new knowledge and understanding about the real world every day.

Students are making interdisciplinary connections. Mathematics is not a field that exists in isolation. They learn best when they connect mathematics to other disciplines, including art, architecture, science, health, and literature. Such connections help students develop an understanding of the academic vocabulary required to "do mathematics" and connect the language of mathematical ideas with numerical representations.

SOLVE PROBLEMS ANALYZE DATA EXPLAIN THEIR THINKING CHECK THEIR WORK PERSEVERE MAKE MODELS USE APPROPRIATE TOOLS THINK ABSTRACTLY MAKE CONNECTIONS ATTEND TO PRECISION THINK CRITICALLY FIND PATTERNS APPLY PRIOR KNOWLEDGE ESTIMATE

Students are sharing mathematical ideas. It is essential that they have the opportunity to discuss mathematics with one another, refining and critiquing each other's ideas and understandings. Communication can occur through paired work, small group work, or class presentations.

CONTENT VISION AND CHARACTERISTICS

Students are using multiple representations to communicate mathematical ideas. They should have multiple opportunities to use a variety of representations to communicate their mathematical ideas, including drawing a picture, writing in a journal, or engaging in meaningful whole-class discussions.

Students are using manipulatives and other tools. In the beginning stages of a new concept, they are just beginning to develop their sense of abstract reasoning. Concrete models, such as manipulatives, can provide them with a way to bridge from the concrete understandings of mathematics to the abstract understandings that will be required of them as they further explore the mathematical concepts.

Environment: The math classrooms have goals defined for students. The daily objectives are listed in the classroom along with the teachers explaining the expectations for the day's learning to let students know what they need to learn for the day. In the math classroom, students are aware of daily routines and expectations.

The math classrooms have students working in different types of groups and individually. The classroom setup is flexible enough to allow students to work with the teacher for instruction or with a partner playing a game. Places set up in the classroom for individual work as well as group work are important.

The teacher circulates in the classroom as the children work together on cooperative problems and games or work individually on concepts and math fluency to help promote an effective and safe environment. Many voices are part of the conversation, and every student feels that they have something unique to contribute. Thorough and detailed feedback is rich with both positive commendations and recommendations. Mistakes are embraced and treated as rich learning opportunities. A growth mindset permeates the atmosphere.

Course Overview: The primary focal areas in Grade 3 are place value, operations of whole numbers, and understanding fractional units. These focal areas are supported throughout the mathematical strands of number and operations, algebraic reasoning, geometry and measurement, and data analysis. In Grades 3-5, the number set is limited to positive rational numbers. In number and operations, students will focus on applying place value, comparing and ordering whole numbers, connecting multiplication and division, and understanding and representing fractions as numbers and equivalent fractions. In algebraic reasoning, students will use multiple representations of problem situations, determine missing values in number sentences, and represent real-world relationships using number pairs in a table and verbal descriptions. In geometry and measurement, students will identify and classify two-dimensional figures according to common attributes, decompose composite figures formed by rectangles to determine area, determine the perimeter of polygons, solve problems involving time, and measure liquid volume (capacity) or weight. In data analysis, students will represent and interpret data.

TEA Documents:

- **TEA Texas Essential Knowledge and Skills (TEKS)**: This TEA webpage provides information on the state standards for what students should know and be able to do for this course.
- **<u>TEA Vertical Alignment Document</u>**: This TEA webpage provides information on content standard alignment across the grade levels.
- <u>STAAR Assessed Curriculum</u> <u>English</u> | <u>Spanish</u>: This TEA document identifies TEKS eligible for testing and identifies them by Reporting Category and as Readiness or Supporting Standards.
- <u>STAAR Blueprint</u> <u>English</u> | <u>Spanish</u>: This TEA document identifies the number of STAAR questions asked per Reporting Category.
- **STAAR Released Questions** English | Spanish: This TEA webpage provides sample test questions from the STAAR Item Bank that may or may not have previously been administered. Also included are test forms, which is a set of released questions, previously administered together which reflects the STAAR test blueprints.

Lead4ward Documents:

COURSE OVERVIEW DOCUMENTS

- <u>Lead4ward TEKS Snapshot</u>: This is a PDF file that color coordinates and divides the readiness, supporting, and process standards for each grade level and content area. (Find 5th grade and click on Math under the Snapshot column)
- Lead4ward TEKS Scaffold: This document shows all of the related TEKS that build up to and extend the learning clustered by concept. (Find 5th grade and click on Math under the Scaffold column)
- Lead4ward Academic Vocabulary: This document shows important vocabulary for concept development, including new and previously introduced words. (Find 5th grade and click on Math under the Academic Vocab column)
- <u>Lead4ward Instructional Strategies Playlist</u>: This document provides descriptions of instructional strategies to engage learners, provide practice without penalty, encourage interaction among students, and see and hear students' thinking across contents. (Located on the Instructional Tools tab)
- Lead4ward Frequency Distribution: This document provides the number of times a TEKS was tested over the past four test administrations. (Click on the Data Tools tab)
- Lead4ward IQ Released Item Analysis Tool: This document breaks down STAAR Released questions and helps teachers to conduct error analysis based on state and local data. (Click on IQ Button on top of Content Builder Resources tab)
- <u>Lead4ward Field Guides</u>: The Field Guides for Teachers succinctly organizes the information teachers and PLCs need to effectively plan meaningful instruction for students. These are purchased for every campus by the district and require login information. Please do not print, as documents are frequently updated.
- <u>Lead4ward Learning Videos</u>: These are short videos that explain how to use the resources listed above. (Click on the Learning Videos tab)

The YAG informs all stakeholders of the learning concepts presented throughout this course. Teachers use this overview to create daily lessons that meet the unique needs of their students.

Units	Subunits	Modules	
	1 Diago Valuo	1 Represent and Round Decimals	
		2 Compare and Order Decimals	
		1 Add and Subtract Decimals and	
	2 Computations	Estimation	
1 Numbers and Operations		2 Add and Subtract Fractions	
		3 Anchor Learning on Fractions	
		4 Multiplication of Whole Numbers	
		5 Multiplication of Decimals	
		6 Multiplication of Fractions	
		7 Division of Whole Numbers	
		8 Divide and Represent Quotients of Decimals	
		9 Division of Fractions	
	1 Simplify Expressions	1 Numerical Expressions	
2		I Numerical Expressions	
2 Algebraic Relationships	2 Problems with Unknown Variables	1 Multi-step Problems with Unknown Variables	
I II I I I I	3 Data	1 Solve Problems Using Data	
	1 Graphing	1 Coordinate Plane	
		1 Perimeter and Area	
3 Coometry and	2 Perimeter, Area, and Volume	2 Volume	
Measurement	3 Attributes	1 Classify Two-Dimensional Shapes	
	4 Customary and Metric	1 Unit Conversions	
4 Financial Literacy	1 Finance Resource	1 Taxes, Income, and Budget	
5			
Anchor the Learning	1 Anchoring Learning	1 Reinforce Previously Learned Skills	
6 Bridging to 6 th Grada		1 Compare, Order, and Add Fractions	
Driuging to 0 Graut	1 Fractions	2 Subtract Fractions and Compare Expressions	

The recommended duration of lessons is less than the number of days in the school year in order to accommodate differentiated instruction, extended learning time, and assessment days. Complete instructional planning information and support are in the LFCISD Curriculum documents.

Units	Subunits	Modules	TEKS	Duration
	1 Dlago Value	1 Represent and Round Decimals	5.2AC	5 days
	I Place value	2 Compare and Order Decimals	5.2B	5 days
		1 Add and Subtract Decimals and Estimation	5.3AK	5 days
		2 Add and Subtract Fractions	5.4A 5.3HK	10 days
1 Numbers and	20 41	3 Anchor Learning on Fractions	5.4A 5.3HK	5 days
Operations	2 Computations	4 Multiplication of Whole Numbers	5.3B	5 days
-		5 Multiplication of Decimals	5.3DE	5 days
		6 Multiplication of Fractions	5.31	5 days
		7 Division of Whole Numbers	5.3C	5 days
		8 Divide and Represent Quotient of Decimals	5.3FG	5 days
		9 Division of Fractions	5.3JL	5 days
n	1 Simplify Expressions	1 Numerical Expressions	5.4EF	5 days
Algebraic	2 Problems with Unknown Variables	1 Multi-step Problems with Unknown Variables	5.4B	10 days
Relationships	3 Data	1 Solve Problems Using Data	5.9ABC	10 days
	1 Graphing	1 Coordinate Plane	5.8ABC 5.4CD	10 days
3	2 Perimeter Area and	1 Perimeter and Area	5.4H	5 days
Geometry and	Volume	2 Volume	5.4H 5.6AB	5 days
Measurement	3 Attributes	1 Classify Two-Dimensional Shapes	5.5A	5 days
	4 Customary and Metric	1 Unit Conversions	5.7A	5 days
4 Financial Literacy	1 Financial Resources	1 Taxes, Income, and Budget	5.10AB 5.10EF 5.10CD ¹	5 days
5 Anchor the Learning	1 Anchoring Learning	1 Reinforce Previously Learned Skills	Previously Learned TEKS	15 days
6 Bridging to 6 th	1 Fractions	1 Compare, Order, and Add Fractions	5.3HK 6.2CD 6.3D	5 days
Grade		2 Subtract Fractions and Compare	5.3HK	5 days

SCOPE AND SEQUENCE

Expressions	6.2CD 6.3D

SE Not Included in Assessed Curriculum¹

Unit I: Numbers and Operations (12 Weeks) Unit Description:

In Unit I, students will apply mathematical process standards to represent, compare, and order positive rational numbers and understand relationships as related to place value. students apply mathematical process standards to develop and use strategies and methods for positive rational number computations in order to solve problems with efficiency and accuracy.

	Mastery Learning Objectives:	Essential Questions:
•	The student applies mathematical process standards to represent and round decimals	• What are some ways you can read, write, and represent decimals through thousandths?
•	The student compares and orders decimal numbers.	• How can you use place value to compare and order decimals?
•	The student develops and uses strategies and methods with the four computations in order to solve problems with efficiency and accuracy. ELPS: The students will develop their receptive and expressive skills. (reading, writing, speaking, and listening)	 How can you use place value to round decimals to a given place number? How can you multiply whole numbers and decimal numbers? How can you divide whole numbers? What are the steps to solve for the quotients of decimals when dividing up to a four-digit dividend by a two-digit divisor? Think of different strategies to solve computation problems, which would be the best? Explain.
	Deel World/Cross C	

<u>Real World/Cross-Curricular Connections</u>:

- Literature: Dewey and His Decimals Students read about the Dewey Decimal system used to order books in the library
- Provide opportunity for students to create numbers that come before or after the decimal number provided (e.g. 7.53). Have students then compare and show a relationship among the numbers (e.g. 7.53 > 7.2)

Subunit 1 of 2 (10 Days): Place Value Subunit Description:

- apply mathematical process standards to represent and round decimal numbers
- demonstrate an understanding on how to compare and order decimal numbers

	Before		Now		After	
•	represent the value of the digit in whole numbers through 1,000,000,000 and decimals to the hundredths using expanded notation and numerals (4.2B)	•	represent the value of the digit in decimals through the thousandths using expanded notation and numerals (5.2A) round decimals to tenths or	•	n/a	
•	interpret the value of each place- value position as 10 times the position to the right and as one- tenth of the value of the place to its left (4.2A)		hundredths (5.2C)			
•	represent decimals, including tenths and hundredths, using concrete and visual models and money (4.2E)					
•	round whole numbers to a given place value through the hundred thousands place (4.2D)					
		N	<u> /aterials/Texts/Resources:</u>			
			(* available in Spanish)			
•	Go Math*					
•	Imagine Math*					
•	Reflex Math*					
•	Math Study Guide					
•	Education Galaxy					
•	TEKSas Target Board					
•	Curriculum Server					
•	Fast Focus (suggested resou	irce	e)			
•	Countdown to STAAR/Gau	ıntl	et (suggested resources)			
•	STAAR Master (suggested	res	ource)			
•	Think Up**					
Μ	anipulatives					

- Base ten blocks
- Cuisenaire rods
- Dice
- Place value chart mats
- Number lines
- Task cards

If available on campus**

Module 1 of 2 (5 Days):
Represent and Round Decimals
5.2A represent the value of the digit in decimals through the thousandths using
expanded notation and numerals (S)
5.2C round decimals to tenths or hundredths (S)
English Language Proficiency Standards
The student uses mathematical processes to acquire and demonstrate mathematical understanding.
Process Standards: 5.1A, 5.1D, 5.1E, 5.1F
The Learner Will (TLW):
 investigate and represent the value of the digits in decimals through the thousandths using expanded notation and numerals. round decimals to tenths or hundredths. read, write, and verbally describe decimals through the thousandths using the decimal place value chart. describe strategies used to round decimals to tenths or hundredths. Student linguistic accommodations should reflect listening, speaking, reading, and writing. Learning Intentions for Emergent Bilinguals
 Misidentifying the thousandths place value with thousands or with hundredths Misidentifying the language of place value and/or fractional values with symbolic representations Misrepresenting the value of a number when a zero value is not represented in expanded notation [e.g. (4 x 10) + (6 x 0.1) = 4.6 instead of 40.6] Solving a problem first and then estimating the results Always rounding to the nearest whole number instead of the respective place value Rounding to the incorrect place value*

	• Focusing on the value of each digit in decimal representations is critical for students to be able to compare and order decimal values through the thousandths
	 Students to be able to compare and order decimal values through the thousandins. Students must represent whole number and decimal values using expanded
S	notation but the operations for expanded notation are not the instructional piece
ion	 The focus is on the expanded number sentence to communicate the value of each
nect	digit.
oni	• As students are asked to solve problems using all four operations, it is important
nt C	to estimate solutions prior to solving. Rounding is one way to estimate values in
nteı	order to evaluate solutions for reasonableness.
C01	• Instruction should begin with skip counting by tenths and hundredths for students
	to understand consecutive multiples.
	• Students may represent these benchmark values through the use of an open
	number line.
	• thousandth*
	decimal number
	decimal point
ary	• digit
.bul	• expanded form
OCA de lev	• expanded notation
c V to gra	• hundredth
emi * _{new}	• place value
cad	standard form
A	• tenth
	• approximate
	• estimate
	• round

Anchor charts

•





- Math Warm-up: TEKSas Target Board Set 1 Week 1
- LFCISD Problem Solving Method and Problem Solving Bookmarks



- Math Study Guide
- Videos

Math Antics – Decimal Place Value Khan Academy – Decimal Place Value Rounding Decimals Song Rounding Decimals: To the Nearest Tenth

• Interactive Notebook 5th Grade

i can the three of the number \$7.063. = <u>3TANDARD FORM</u>	
= <u>WORD FORM</u>	click images for link
Explain how you decided to handle the "missing" digit in the tenths place.	Round Na esta

- Whole Group Activity- The teacher and students play "I'm Thinking of a Number" as a group. The teacher uses a variety of statements to prompt students to find an unknown decimal number. One example would be...
 - I'm thinking of a number.
 - The number has three digits to the right of the decimal point.
 - The number is greater than 4.6 and less than 4.7.
 - \circ The number contains a 4 with a value equal to 4 X 1/100.
 - The number has a 9 in the thousandths place.
 - \circ What is the number? (4.649) Students provide the unknown numbers.
- Whole Group Activity- Students use money or play money as models of decimal place values. When rounding to the nearest dime, students find the boundary amounts and the middle point. For example, when rounding \$3.26 to the nearest dime, the boundaries are \$3.20 and \$3.30. The middle point is \$3.25. Since \$3.26 is greater than \$3.25, students round to \$3.30.
- <u>Workstation Folders</u>
- **Go Math-** Module <u>1.2-1.3</u> Module <u>1.5</u>
- Vocabulary Activity: <u>Think Up TE pg. 14</u> Vocabulary Activity: <u>Think Up TE pg. 40</u>



• Literature Connection- The books may be used as part of an introductory activity, an instructional activity, or a reflection/closure activity to enhance or extend unit concepts. Books may be placed in the classroom library or in a math center for student access.



Think Up if available on campus

Checking for Understanding (with sentence starters)

- An example of tenths place value is...
- An example of hundredths place value is...
- An example of thousandths place value is...
- District Units and Subunits Assessments
- Round numbers to the nearest tenth or hundredth?
- Round 19.55 to the nearest tenth.
- Round 3.702 to the nearest hundredth.
- Describe a situation in everyday life in which you use rounding to estimate.

Learning Intentions for Emergent Bilinguals

Sample Assessment Items 5.2A

A temperature in degrees Fahrenheit is shown in expanded notation.

 $(9 \times 10) + (4 \times 0.1)$

How is this temperature in degrees Fahrenheit written as a numeral?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

5.2C

What is 0.64 rounded to the tenths place?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

	Module 2 of 2 (5 Days):
	Compare and Order Decimals
cess	5.2B compare and order two decimals to thousandths and represent comparisons
) Pro	using the symbols $>$, $<$, or $=$ (R)
.KS upporting, (P	English Language Proficiency Standards
TH Idiness, (S) Si	The student uses mathematical processes to acquire and demonstrate mathematical understanding.
(R) Re	Process Standards: 5.1A, 5.1E
Ň	The Learner Will (TLW):
live	
und ject	• explain to a partner how to compare and order two decimals to the thousandths
nt a Ob	place using comparison symbols.
ntej ige	• represent the decimal comparisons using the >, <, or = symbols.
Co) Langua	• Student linguistic accommodations should reflect listening, speaking, reading, and writing. Learning Intentions for Emergent Bilinguals
	• Relying on a trick to determine directionality (e.g., the alligator's mouth eats the bigger number) and may not be able to read comparison symbols correctly
-	• Comparing the number of digits instead of applying their understanding of place value to determine the value of desimals (e.g., 0.451 is greater than 0.98 because
tions	it has more digits)
cept	• Not understanding that 0.7 is equivalent to 0.70
isconc	 Not viewing that the comparison statement 5.246 < 5.43 is the same as 5.43 > 5.246
Mi	• Not understanding the context of problems to order decimals correctly (e.g., when ordering time from fastest to slowest, ordering from greatest to least)
	 Being unable to apply comparison symbols when ordering multiple values (e.g.
	3,342 < 3,349 < 3,358 < 3,409

Content Connections	 It is important for students to recognize inverse comparison statements and symbol representation (e.g., 2.7 is greater than 2.42 and 2.7 > 2.42). Students must also order decimals from least to greatest or greatest to least. The use of number lines allows students to order more efficiently. Students should also be able to compare decimal numbers in pairs when given a set of decimals.
Academic Vocabulary *new to grade level	 < (less than) = (equal to) > (greater than) compare decimal number decimal point digit equivalent greatest to least inequality least to greatest place value thousandths*

Anchor charts

•



- Math Warm-up: TEKSas Target Board Set 1 Week 2
- LFCISD Problem Solving Method and Problem Solving Bookmarks



- Math Study Guide
- Videos

Comparing, Ordering, and Rounding Decimals Khan Academy: Ordering Decimals

• Interactive Notebook 5th Grade

nitions on the	decimal	
iace values w	h	
greates	t plane value. jou final a	
., dgit. re using thai	digits	
		J
_		
7	1<1	2.977
	ribers on the loce values w I _greatiest ightunit digit unity I re using those	neer on the _decimal ocer values with

- Whole Group Activity- The teacher draws a large greater than/less than sign on a sheet of sturdy paper. Each student writes a decimal number on a sheet of paper or a dry erase board. The teacher randomly selects two students to stand and display their numbers. Each seated student records a number sentence on paper to compare the two numbers. The teacher selects one seated student to hold the greater than/less than sign while standing between the students holding the decimal numbers. This student turns the sign so that the symbol is facing the correct direction to complete the number sentence. A fourth student reads the correct number sentence for the class. The activity is repeated with other numbers.
- Workstation Folders
- Go Math- Module 1.4

• Vocabulary Activity: Dry Erase Race (Think Up TE)

The teacher distributes dry erase boards and markers to students. The teacher reads the definition for one vocabulary term. Each student writes the matching math term on their dry erase board and holds the board for the teacher to see. The first student to raise their dry erase board with the correct math term wins a point. As a variation, a timer may be used. Points are awarded to all students who, within the given time limit, raise their boards showing the correct vocabulary term.

Literature Connection-

The History of Zero: Exploring Our Place-Value Number System – Tika Downey *Piece = Part = Portion: Fractions = Decimals = Percents* – Scott Gifford

• Activities

<u>Concept Development Activities</u> Think Up SE Unit 2 pg. 20-22 Think Up SE Unit 2 Assessment pg. 25-26

- Differentiated Instruction
 - **EB's:** Go Math TE pg.23

Linguistic Accommodations

- **GT Extensions:** Students investigate the history of earthquakes. Students compare the magnitudes of earthquakes as shown by the Richter scale. Students work as a group to create a large number line labeled with the magnitudes and locations of some of the earthquakes they discover. (from Think Up Extending Thinking)
- Intervention: The teacher gives each student a card printed with a decimal number. Students work in groups of four. Each student writes comparisons using >, <, or = between their decimal number and each decimal number in the group. The teacher reviews student comparisons in order to plan further interventions if needed.
- Exit Ticket- students will record the batting averages of two baseball players. Have students use the symbols >, <, or = to compare the averages.

Think Up if available on campus

Checking for Understanding (with sentence starters)

- An example of the greatest to least is...
- An example of least to greatest is...
- What are some numbers greater than 34.05 that students could make?
- What are some numbers less than 0.47 that students could make?
- District Units and Subunits Assessment

Learning Intentions for Emergent Bilinguals

Sample Assessment Items

Four students are traveling to a math contest. The table shows the weights of the four students' suitcases.

Weights of Suitcases			
Student	Weight of Suitcase (pounds)		
Juan	21.605		
Tiana	24.8		
Kimberly	21.48		
Emanuel	24.75		

In what position would Juan's suitcase be if the weights of the suitcases in pounds were ordered from greatest to least?

- F First
- G Second
- H Third
- J Fourth

Subunit 2 of 2 (50 Days): Computations Subunit Description:

- **apply** mathematical process standards to develop and use strategies and methods for positive rational number computations in order to solve problems with efficiency and accuracy.
- add and subtract decimal and fractions
- make estimations as they add and subtract
- demonstrate an understanding of prime and composite numbers

		• represent division and divide a		
		unit fraction by a whole		
		number and the division of a		
		whole by a unit fraction such		
		as $1/3 \div 7$ and $7 \div 1/3$ using		
		objects and pictorial models,		
		including area models and		
		divide (5.3J/5.3L)		
		Materials/Texts/Resources:		
		(* available in Spanish)		
•	Go Math*			
•	Imagine Math*			
•	Reflex Math*			
٠	Math Study Guide			
•	Education Galaxy			
•	TEKSas Target Board			
•	Curriculum Server			
•	• Fast Focus (suggested resource)			
•	 Countdown to STAAR/Gauntlet (suggested resources) 			
•	STAAR Master (suggested resource)			
•	Think Up**			
If .	If available on campus **			

Module 1 of 9 (5 Days):		
	Add and Subtract Decimals and Estimation	
s	5.3A estimate to determine solutions to mathematical and real-world problems	
Proce	involving addition, subtraction, multiplication, or division (S)	
; (P)	5.3K add and subtract positive rational numbers fluently (R)	
orting	5.2C round decimals to tenths or hundredths (S)	
TEK ess, (S) Supp	English Language Proficiency Standards	
(R) Readin	The student uses mathematical processes to acquire and demonstrate mathematical understanding.	
	Process Standards: 5.1A, 5.1B, 5.1C, 5.1D, 5.1E, 5.1F, 5.1G	
Content and Language Objectives	 <i>The Learner Will (TLW):</i> find solutions to math and real-world problems by estimating numbers when working with the four operations add and subtract decimal numbers Student linguistic accommodations should reflect listening, speaking, reading, and writing. Learning Intentions for Emergent Bilinguals 	
Misconceptions	 Solving a problem first and then estimating the results. Applying the use of "key words" to select addition or subtraction instead of understanding the context of the problem* Lining up the decimal point incorrectly (or not at all) when adding or subtracting decimal numbers Representing values of money incorrectly (e.g., 5 cents = 0.50) Having difficulty applying fraction/decimal equivalencies when asked to add a fraction and a decimal* 	
	* Used on STAAR	

Content Connections	 As students are asked to solve problems using all four operations involving whole numbers, fractions, and decimals, it is important for them to estimate solutions prior to solving. The use of rounding and/or compatible numbers also allows students to evaluate the reasonableness of solutions. Instruction should model the use of estimations to all operational problems prior to solving for the exact answer. Students should add and subtract decimal values through the thousandths. Instruction should vary the context (e.g., joining, separating, comparing) and number of steps needed to solve the problem.
Academic Vocabulary *new to grade level	 compatible number decimal number decimal point difference estimate estimation language (about, a little more/less than, close to, approximately) reasonable round sum thousandth

Anchor charts

•





- Math Warm-up: TEKSas Target Board Set 2 Week 3
- <u>LFCISD Problem Solving Method</u> and <u>Problem Solving Bookmarks</u>



- Math Study Guide
- Videos
 - Math Antics Decimal Addition and Subtraction
 - Khan Academy: Adding Decimals
 - Math on the Spot Lesson 1.6 (Think Central)
 - Khan Academy: Estimating When Adding Multi-digit Numbers
- Interactive Journal 5th Grade
 - <u>5.3A Interactive Notebook</u>

Instruction and Student Engagement

E51	MATE TO DETERMINE SOLUTION	то
Jesse He r costr poci to p	went to the store with a sso bill, nat purchase a gallon of milit that \$2.28, a turkey for \$34.20, a 12- of soda for \$4.97. Will be have ensugh money by for the Rems? Justify your assuer.	A
Thini oil th	what is the best estimate to find the total cor i items.	t for
	134.20 → 1 4.97 → 2.26 → Total cubrs	rtion

- Think Up SE (Unit 14) pg. 138-139 (can be added to students' interactive notebook)
- Whole Group Activity- The teacher provides a slip of paper and a word problem involving addition or subtraction of decimal numbers to thousandths to each student pair. Each pair records an estimated answer on the slip of paper and sets the paper aside. Each pair then solves the problem. Afterward, each pair compares the estimate with the actual answer to determine whether the answer is reasonable. If the answer is not reasonable, students determine the source of the error and amend their work.
- **Group Activity** The teacher divides the class into three teams and displays a word problem that does not lend itself to mental computation. The teacher gives an answer (sometimes correct, sometimes incorrect) to the problem and says. Is it reasonable? Teams select a method of estimation and determine the reasonableness of the answer. Then students use calculators to determine the actual answer. The process is repeated with other problems.
- Workstation Folders
- Go Math: Module 1.7 and Module 1.6
- Vocabulary Activity: <u>Think Up TE pg. 172</u> and <u>Think Up TE pg. 52</u>
- Literature Connection:
 - Alexander, Who Used to Be Rich Last Sunday Judith Viorst
 - *How the Second Grade Got \$8,205.50 to Visit the Statue of Liberty* Nathan Zimelman
 - Sluggers' Car Wash: Dollars and Cents Stuart J. Murphy
 - The \$1.00 Word Riddle Book Marilyn Burns
- Think Up: Think Up TE pg. 171 Think Up SE Unit 14 pg. 138-142 Think Up Unit 1 pg. 145-146

Think UP SE Unit 4 pg. 38-42 Think Up Game SE pg. 43
Differentiated Instruction
• EB's: GO Math TE pg.41 and Go Math TE pg.35
Linguistic Accommodations
 GT Extensions: <u>Extending Student Thinking</u> Think Up TE pg. 56
• Intervention: Intervention Activities
• Exit Ticket: Think Up SE pg. 144 and Think Up SE pg. 44 (Reflection/Closure Activity)
Think Up if available on campus

Checking for Understanding (with sentence starters)

- I can record addition and subtraction of decimals through thousandths by.....
- The steps to add and subtract decimals through thousandths are...
- Some of the real-life situations in which I might need to add or subtract decimals are...
- I can estimate sums and differences by...
- Estimation is important because...
- My answer is reasonable because...
- I can determine which estimation strategy to use by...
- Some of the key points to remember about estimation strategies are...

Learning Intentions for Emergent Bilinguals

Sample Assessment Items

Mr. Wilfred used a full 2-liter bottle of liquid soap to fill two soap containers.

- He put 0.475 liter of soap in the first container.
- He put 0.35 liter of soap in the second container.

How many liters of liquid soap remained in the bottle?

- **A** 0.825 L
- **B** 0.625 L
- **C** 1.175 L
- **D** 1.49 L
| Paula wants to buy 3 shirts and 2 belts. The shirts cost \$16.89 each, and the belts cost \$8.97 each. Paula has \$45. |
|--|
| Which of these amounts is the best estimate of how much more money Paula needs in order to buy the shirts and belts? |
| A \$16 |
| B \$10 |
| C \$24 |
| D \$5 |
| |

	Module 2 of 9 (10 Days): Add and Subtract Fractions				
TEKS (R) Readiness, (S) Supporting, (P) Process	Add and Subtract Fractions 5.4A identify prime and composite numbers (S) 5.3H represent and solve addition and subtraction of fractions with unequal denominators referring to the same whole using objects and pictorial models and properties of operations (S) 5.3K add and subtract positive rational numbers fluently (R) English Language Proficiency Standards The student uses mathematical processes to acquire and demonstrate mathematical understanding. Process Standards: 5.1A, 5.1C, 5.1D, 5.1E, 5.1G				
Content and Language Objectives	 <i>tell</i> which numbers are prime and which are composite <i>represent</i> addition and subtraction of fractions using objects and pictorial models and properties of operations <i>solve</i> addition and subtraction of fractions using objects and pictorial models and properties of operations <i>add</i> and <i>subtract</i> fractions fluently <i>read</i>, write, and verbally describe steps to solve addition and subtraction of fractions. Student linguistic accommodations should reflect listening, speaking, reading, and writing. Learning Intentions for Emergent Bilinguals 				
Misconceptions	 Misinterpreting 1 as prime because its factors are 1 and itself Misinterpreting 2 as a composite number because it is even Misinterpreting all odd numbers as prime Adding and/or subtracting the numerators and unequal denominators Being unable to identify the area model representation of an addition/subtraction fraction problem Not recognizing solutions in their simplified form (e.g., not recognizing a solution of 3/6 is equivalent to ¹/₂) 				

- Identifying prime and composite numbers supports students as they determine a common denominator in order to add and subtract fractions with unlike denominators and identify a common factor in order to represent sums/differences in simplified form.
- In conjunction with 6.7(A), identifying prime numbers is key for determining the prime factorization of numbers.
- The number one is neither prime nor composite.
- Instruction should model multiple representations of composite numbers as this supports future needs of finding a common denominator and/or a common factor.
- Using concrete objects and pictorial models to represent the addition and subtraction of fractions with unlike denominators supports students in developing the concrete understanding of the concept before moving to the abstract of developing a strategy and/or algorithm.
- An area model is one example of how to represent the addition/subtraction of fractions with unlike denominators.
- The use of strip diagrams and number lines are other methods for representing addition/subtraction of fractions.
- Instruction should include examples of mixed numbers and extend to the use of properties of operations.

	common denominator
	common factor
	common multiple
	• composite number
	• denominator
	• difference
	divisibility rules
	• divisible
ıry	equal parts/equal shares
ula	• equivalent fraction
:ab evel	• factor
V 00	• factor pairs
ic V v to g	• factor tree
em * _{nev}	• greatest common factor
ad	improper fraction
Ac	• least common denominator (LCD)
	• least common multiple (LCM)
	• mixed number
	• multiples
	• numerator
	• prime number
	• simplified form
	• sum
	• whole number

Anchor charts





- Math Warm-up: TEKSas Target Board Set 2 Week 4 Set 3 Week 5
- <u>LFCISD Problem Solving Method</u> and <u>Problem Solving Bookmarks</u>



- Math Study Guide
- Videos
 - Prime and Composite Numbers
 - Khan Academy: Recognizing Prime and Composite Numbers
 - Math Antics (Finding the Common Denominator)
 - Adding and Subtracting Fractions Song: LIKE and UNLIKE Denominators
 - Khan Academy: Adding Fractions with Unlike Denominators
- Interactive Notebook 5th Grade



- Workstation Folders
- **Go Math** Module 5.1-5.6
- Think Up: SE Unit 17 pg. 186-172 SE Unit 11 pg. 108-112/Unit 15 148-152 SE Unit 11&15 Assessment pg.115-116/pg. 155-156
- Vocabulary Activity: <u>Vocabulary Mastery Activities</u>

Literature Connection:
 The Ancient Formula: A Mystery with Fractions – Melinda Thielbar

 Ed Emberley's Picture Pie – Ed Emberley
 If You Hopped Like a Frog – David M. Schwartz
 Math Curse – Jon Scieszka
 Pizza Parts: Fractions! – Linda Bussell
 Working with Fractions – David A. Adler
Differentiated Instruction
• EB's: Go Math TE pg.195 and 201
Linguistic Accommodations
 GT Extensions: Student pairs use a 3-column chart to categorize numbers 1– 100 as perfect, abundant, or deficient.
✓ A perfect number is a number whose factors, other than the number itself, sum to a total equal to the number. Example: 6 is a perfect number because $1 + 2 + 3 = 6$.
✓ An abundant number is a number whose factors, other than the number itself, sum to a total greater than the number. Example: 12 is an abundant number because 1 + 2 + 3 + 4 + 6 = 16, which is greater than 12.
 ✓ A deficient number is a number whose factors, other than the number itself, sum to a total less than the number. Example: 10 is a deficient number because 1 + 2 + 5 = 8, which is less than 10. (activity taken form Think Up TE)
Extending Student Thinking (5.3H)
• Intervention: Intervention Activities
• Exit Ticket- Luisa was trying to subtract 1/8 from ³ / ₄ . Her teacher told her to use a standard inch ruler. How might the ruler help Luisa?

** If available on campus

Checking for Understanding (with sentence starters)

- Display a number. If the number is composite number, direct students to respond by giving a thumbs-up signal. If it is a prime, direct students to respond by giving a thumbs-down signal. Based on observations, provided needed explanations or interventions needed (Mentoring Minds)
- The difference between prime and composite numbers is...
- The steps to find the LCD/LCM are...
- How can you use models to add and subtract fractions with unequal denominators?
- How can you use a common denominator to add and subtract fractions with unequal denominators?

Learning Intentions for Emergent Bilinguals

Sample Assessment Items

Four students each wrote down a number between 30 and 40. The list shows the numbers they wrote.

• Elly-35

- Ulysses-39
- Maggie—37
- Palmer-33

Which student wrote down a prime number?

A Elly

- B Ulysses
- C Maggie
- **D** Palmer

Vanna used the fraction strips shown to help her determine the difference between $\frac{5}{6}$ and $\frac{1}{4},$



	Module 3 of 9 (5 Days):					
	Anchor the Learning on Fractions					
s	5.3H represent and solve addition and subtraction of fractions with unequal					
Proce	denominators referring to the same whole using objects and pictorial models and					
; (P)	properties of operations (S)					
orting	5.3K add and subtract positive rational numbers fluently (R)					
EK						
T \$\$\$, (S)	English Language Proficiency Standards					
teadine	The student uses mathematical processes to acquire and demonstrate mathematical					
(R) R	understanding.					
	Process Standards: 5.1A, 5.1B, 5.1C, 5.1D, 5.1E, 5.1F, 5.1G					
	The Learner Will (TLW):					
age	• add and subtract positive rational numbers fluently.					
ngu	• identify prime and composite numbers.					
Lai ives	• represent and solve addition and subtraction of fractions with unequal					
and ject	denominators referring to the same whole using objects and pictorial models and					
ob Ob	properties of operations.					
onte	• Student linguistic accommodations should reflect listening speaking reading and					
ŭ	writing. Learning Intentions for Emergent Bilinguals					
	• Misinterpreting 1 as prime because its factors are 1 and itself					
suc	• Misinterpreting 2 as a composite number because it is even					
ptic	 Misinterpreting all odd numbers as prime Adding and/or subtracting the sum anters and un equal denominators 					
nce	 Adding and/or subtracting the numerators and unequal denominators Being unable to identify the area model representation of an addition/subtraction 					
scol	fraction problem					
Mi	• Not recognizing solutions in their simplified form (e.g., not recognizing a solution					
	of $3/6$ is equivalent to $\frac{1}{2}$)					

- Identifying prime and composite numbers supports students as they determine a common denominator in order to add and subtract fractions with unlike denominators and identify a common factor in order to represent sums/differences in simplified form.
- In conjunction with 6.7(A), identifying prime numbers is key for determining the prime factorization of numbers.
- The number one is neither prime nor composite.
- Instruction should model multiple representations of composite numbers as this supports future needs of finding a common denominator and/or a common factor.
- Using concrete objects and pictorial models to represent the addition and subtraction of fractions with unlike denominators supports students in developing the concrete understanding of the concept before moving to the abstract of developing a strategy and/or algorithm.
- An area model is one example of how to represent the addition/subtraction of fractions with unlike denominators.
- The use of strip diagrams and number lines are other methods for representing addition/subtraction of fractions.
- Instruction should include examples of mixed numbers and extend to the use of properties of operations.

- common denominator
- common factor
- common multiple
- composite number
- denominator
- difference
- divisibility rules
- divisible
- equal parts/equal shares
- equivalent fraction
- factor

Academic Vocabulary

*new to grade level

- factor pairs
- factor tree
- greatest common factor
- improper fraction
- least common denominator (LCD)
- least common multiple (LCM)
- mixed number
- multiples
- numerator
- prime number
- simplified form
- sum
- whole number

- Math Warm-up: TEKSas Target Board Set 3 Week 6
- <u>LFCISD Problem Solving Method</u> and Problem Solving Bookmarks



- Math Study Guide
- Videos
 - Study Jams! Add and Subtract with Unlike Denominators
 - Math on the Spot Videos: <u>Addition with Unequal Denominators</u> (L5.1)

Subtraction with Unequal Denominators (L5.2)

Add and Subtract Fractions (L5.5)

Add and Subtract Mixed Numbers (L5.6)

Subtraction with Renaming (L5.7)

- Understand Fractions in 7 min (Fast Review)
- Whole Group Activity- <u>Concept Development Activities</u>
- Workstation Folders
- **Go Math** Module 5.1-5.6
- Vocabulary Activity: <u>Sticker Stackers</u> (lead4ward strategies playlist) PURPOSE – Rehearsal and Practice: Students practice describing and sketching important vocabulary words with different partners with the goal of getting as many stickers stacked on your arm as you can (like badges).
- Literature Connection-
 - <u>Apple Fractions</u> Jerry Pallotta
 - <u>The Hershey's® Milk Chocolate Fractions Book</u> Jerry Pallotta
 - <u>Math Curse</u> Jon Scieszka
 - <u>The Wishing Club: A Story about Fractions</u> Donna Jo Napoli
 - <u>Working with Fractions</u> David A. Adler



• **EB's:** Go Math TE <u>pg.195</u> and <u>pg. 201</u>

Linguistic Accommodations

• **GT Extensions:** <u>TX Go Math pg. 226</u> (see activity below)

Each student should write five mixed number problems and solutions. Each problem should be on its own index card, and each solution should be on its own index card. Students should consider these guidelines:

- Problems can have more than two numbers. For example, a problem could be a + b + c.
- Problems can mix addition and subtraction. Problems can use both fractions and mixed numbers.

When students finish writing the problems and solutions on cards, each student may choose to trade card sets with another student to match the problems with the solutions.

$$2\frac{3}{4} + 1\frac{1}{6} + 1\frac{2}{3}$$
 $5\frac{7}{12}$

Think Up TE pg. 140/pg. 187

- Intervention: Think Up TE Unit 11 pg. 141 Unit 15 pg. 188
- Exit Ticket- Students will respond to the following reflection questions.
 - What strategies for adding and subtracting fractions do you find most helpful? Why?
 - What are two important concepts you learned about adding and subtracting fractions?

** Think Up, if available on campus

Checking for Understanding (with sentence starters)

- The difference between prime and composite numbers is...
- The steps to find the LCD/LCM are...

Evidence of Learning

- How can you use models to add and subtract fractions with unequal denominators?
- How can you use a common denominator to add and subtract fractions with unequal denominators?

Learning Intentions for Emergent Bilinguals

	Module 4 of 9 (5 Days): Multiplication of Whole Numbers						
	5.3B multiply with fluency a three-digit number by a two-digit number using the standard algorithm (S)						
P) Process	5.3A estimate to determine solutions to mathematical and real-world problems involving addition, subtraction, multiplication, or division (S)						
EKS Supporting, (1	5.4B represent and solve multi-step problems involving the four operations with whole numbers using equations with a letter standing for the unknown quantity (R)						
TI diness, (S) S	English Language Proficiency Standards						
(R) Re	The student uses mathematical processes to acquire and demonstrate mathematical understanding.						
	Process Standards: 5.1A, 5.1B, 5.1C, 5.1D, 5.1E, 5.1F, 5.1G						
ge	The Learner Will (TLW):						
angua es	• use the standard algorithm to multiply a three-digit number by a two-digit number fluently						
it and La Dbjectiv	• read, write, and verbally describe the steps on how to multiply a three-digit by two-digit number using the standard algorithm.						
Conter (• Student linguistic accommodations should reflect listening, speaking, reading, and writing. Learning Intentions for Emergent Bilinguals						
Misconceptions	 Forgetting to add a regrouped digit Forgetting the zero place holder when multiplying two multi-digit numbers Students might skip multiplying by the ones place when using the algorithm and start multiplying by the tens place Students might think of adding numbers instead of multiplying when working with word problems 						
_	1						

Content Connections	 A multiplication chart may be used for those who struggle with multiplication facts. Students need to become fluent with multi-digit multiplication as they will be asked to solve problems using all four operations and extend their understanding of multiplying whole numbers to that of decimals. Students need to become fluent with multi-digit multiplication as they will be asked to solve problems using all four operations and extend their understanding of multiplying whole numbers to that of decimals. Students need to become fluent with multi-digit multiplication as they will be asked to solve problems using all four operations and extend their understanding of multiplying whole numbers to that of decimals. Students should estimate the product of a multi-digit factor problem before solving for the exact answer. As students begin to use the standard algorithm to determine the product of multiplication is the product of multiplication.
	digit factors, it is essential that they communicate the correct place value understanding.
Academic Vocabulary *new to grade level	 algorithm factor identity property of multiplication justify multiple model partial product product whole numbers

Anchor charts

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- Math Warm-up: TEKSas Target Board Set 4 Week 7
- <u>LFCISD Problem Solving Method</u> and <u>Problem Solving Bookmarks</u>



- Math Study Guide
- Videos
 - -Math Antics
 - -Video-Khan Academy
- Interactive Journal 5th Grade (Curriculum Server) <u>Carson Dellosa Interactive</u> <u>Notebook (p.16-17)</u>

Instruction and Student Engagement



- Whole Group Activity- Students work with a partner to create a flowchart or other graphic organizer that outlines the steps used in the standard algorithm to solve multi-digit multiplication problems. Students explain their flowcharts to the class, and the charts are posted on the wall for student reference.
- Workstation Folders
- Go Math- Module 2.2
- Vocabulary Activity: Think Up!** TE pg. 62
- Literature Connection- *Think Up*!** TE pg. 62
- Activities (Formative Assessment)-Think Up!** TE pg. 62
- *Think Up!*** SE Unit 5 pg. 48-52
- Think Up!** SE Unit 5 Assessment pg. 55-56
- Differentiated Instruction

 EB's: GO Math TE pg.61 (English Language Support)
 <u>Linguistic Accommodations</u>

• **GT Extensions:** *Think Up*!** TE pg. 67

- Intervention: *Think Up*!** TE pg. 66
- Exit Ticket- Think Up! SE pg. 54 (Reflection/Closure Activity)

	** If available on campus						
Evidence of Learning	 Checking for Understanding (with sentence starters) I multiply by a 2-digit number by The product is reasonable because I can check my work for accuracy by What would be another way to solve multiplying whole numbers? Learning Intentions for Emergent Bilinguals Sample Assessment Items 12 Aspen added 14 to the product of 224 and 16. What is this sum? F 3,478 G 3,598 H 3,808 J 3,584 18 Last month a flower shop employee ordered 48 cases of roses. There were 144 roses in each case. 						
	In each case. How many roses did this employee order?						
	F 5,482						
	G 1,728						
	H 6,912						
	J 4,044						

Module 5 of 9 (5 Days): Multiplication of Decimals

	5.3E solve for products of decimals to the hundredths, including situations involving				
g, (P) Process	money, using strategies based on place-value understanding, properties of operations,				
	and the relationship to the multiplication of whole numbers (R)				
	5.3D represent multiplication of decimals with products to the hundredths using				
ortin	objects and pictorial models including area models (S)				
EK					
T s, (S)	English Language Proficiency Standards				
dines					
) Rea	The student uses mathematical processes to acquire and demonstrate mathematical				
E)	understanding.				
	Process Standards: 5.1A, 5.1B, 5.1C, 5.1D, 5.1E, 5.1F, 5.1G				
	The Learner Will (TLW):				
age	• be able to multiply decimals to the hundredths using the standard algorithm.				
gug	• demonstrate how to use pictorial models to represent multiplication of decimals.				
an ves	• read, write, and verbally describe where to place the decimal point in the product				
d I ctiv	when multiplying decimals.				
an bje	• create examples and non-examples to justify statements about products of				
ent	decimals.				
ont	• Student linguistic accommodations should reflect listening speaking reading and				
Ŭ	writing. Learning Intentions for Emergent Bilinguals				
ons	• Thinking that multiplying two numbers always yields a larger product				
ptic	• When applying the standard algorithm, aligning place values in the same way as				
JCe	• A making the use of "least words" to select addition on subtraction instead of				
C01	• Applying the use of key words to select addition of subtraction instead of understanding the context of the problem				
Mis	understanding the context of the problem				
	• Using concrete objects and nictorial models to represent the multiplication of				
t ons	decimals supports students in developing the concrete understanding of the				
ten ⁻ ctic	concept before moving to the abstract of developing a strategy and/or algorithm.				
ont					
COL					

- area model
- factor
- identity property of multiplication
- justify
- multiple
- model*

Academic Vocabulary *new to grade level

- partial product
- product
- decimal numbers
- decimal point





- Math Warm-up: TEKSas Target Board Set 4 Week 8
 - <u>LFCISD Problem Solving Method</u> and <u>Problem Solving Bookmarks</u>



- Math Study Guide
- Video-Math Antics <u>https://www.youtube.com/watch?v=kwh4SD1ToFc</u>
- Video-Khan Academy <u>https://www.khanacademy.org/math/algebra-basics/basic-alg-foundations/alg-basics-operations-with-decimals/v/multiplying-decimals</u>
- 5th Grade Interactive Journal (Curriculum Server)



- <u>Workstation Folders</u>
- Go Math-Module 3 Multiply Decimals/Go Math-Literacy and Mathematics-p.108
- Vocabulary Activity: Think Up!** T.E. pg. 98
- Formative Assessment- *Think Up!*** T.E. pg. 98

- Literature Connection-*Think Up*!** T.E. pg. 98
- Differentiated Instruction
 - **EB's:** GO Math TE pg. 141 (English Language Support) <u>Linguistic Accommodations</u>
 - **GT Extensions:** *Think Up!*** TE pg. 92
 - Intervention: *Think Up!*** TE pg. 91
- Exit Ticket-*Think Up*!** SE pg. 54 (Reflection/Closure Activity)

Think Up ilf available on campus

Checking for Understanding (with sentence starters)

- I can tell if the product of two decimal values are reasonable because...
- The process for multiplying two decimal values are different from multiplying two whole numbers because...
- The process of multiplying decimal numbers is...
- What would be another strategy to solve multiplication of decimals?
- How can you create your own model to solve multiplying decimals?

Learning Intentions for Emergent Bilinguals

Sample Assessment Items

Kelsi spends \$6.75 every Saturday for breakfast. What is the total amount of money Kelsi spends on breakfast for 14 Saturdays?

- **A** \$94.50
- **B** \$20.75
- **C** \$92.30
- **D** \$33.75

This model is shaded to represent 1 whole.

1									
-	_	_	_	_	_	_	_	_	_

Which model represents $0.9 \times 0.4 = 0.36$?



	Module 6 of 9 (5 Days):
	Multiplication of Fractions
(J)	5.3I represent and solve multiplication of a whole number and a fraction that refers
ting, (to the same whole using objects and pictorial models, including area models (S)
S uppor	
EK (S) St rocess	English Language Proficiency Standards
T iness, P	
Readi	The student uses mathematical processes to acquire and demonstrate mathematical understanding
(R)	Process Standards: 51A 51B 51C 51D 51E 51F 51G
	The Learner Will (TLW):
age	
ngı	• solve multiplication of a whole number and a unit fraction using the standard
Lar ives	algorithm and pictorial models.
nd] ecti	• read, write, and verbally describe the relationship between multiplication
t al Dbj	models, equations, and word problems.
iten (• Student linguistic accommodations should reflect listening speaking reading and
Con	writing. Learning Intentions for Emergent Bilinguals
•	
Suc	• Confusing multiplication of fractions (repeated addition of different wholes) with
ptic	addition/subtraction of fractions (joining/separating of the same whole)
ləər	• Having difficulty identifying fractional amounts for a given set of objects
1005	
Mis	
	• Using concrete objects and nictorial models to represent and solve the
ons	multiplication of fractions and whole numbers supports students in developing the
ecti	concrete understanding of the concept before moving to the abstract of developing
nne	a strategy and/or algorithm.
Co	• Understanding the use of the area model for multiplication of fractions supports its
ent	use in the division of fractions as well.
ont	
Ŭ	

- area model
- denominator
- factor
- fraction
- improper fraction
- mixed number
- multiply
- numerator
- product

Academic Vocabulary *new to grade level







- Math Warm-up: TEKSas Target Board Set 5 Week 9
- LFCISD Problem Solving Method and Problem Solving Bookmarks



- Math Study Guide
- Video <u>Multiplying Fractions with Whole Numbers</u> Song by NUMBEROCK
- Video Khan Academy
- Interactive 5th Grade Journal Notebook (curriculum server)

Multiply Fractions and Whole Numbers Find the product. ² / ₈ × 4 Step 1 Draw 4 rectangles to represent the factor 4. Image 1 Draw 4 rectangles to represent the factor 4. Image 2 The denominator of the factor ² / ₈ is 8. 5n, divide the 4 rectangles into 8 equal parts. Image 2 The denominator of the factor ² / ₈ is 1. 5n, thirde the 4 rectangles into 8 equal parts. Image 2 The denominator of the factor ² / ₈ is 1. 5n, thirde the parts. Image 2 The denominator of the factor ² / ₈ is 1. 5n, shade 3 of the parts. Image 3 The numerator of the factor ² / ₈ is 1. 5n, shade 3 of the parts. Image 4 The 4 rectangles have 3 shaded parts. Each rectangle is divided	5.31 I can use a to find the product of fractions and whole numbers. Look for the model that correctly represent the two equations below. $\boxed{\begin{array}{c}1\\\hline\frac{1}{\frac{1}{2}\frac{1}$
• <u>Carson Dellosa Interactive Notebook</u> $ \frac{\left \begin{array}{c} \mathbf{Multiplying Fraction}\\ \mathbf{F}_{action}\\ F$	$(p.32-33)$ $\frac{1}{4} = \frac{3}{32}$ $\frac{2}{3} = \frac{6}{30}$
 Whole Group Activity: Students wormodel, fraction circles, or area models represented by the model provided. St created by other student pairs. A jar of pounds do 4 jars of peanut butter weight. 	The with partners. Each pair has a number line s. Students create word problems that can be sudents trade and solve word problems of peanut butter weighs $\frac{5}{8}$ pound. How many gh?
 <u>Workstation Folders</u> Go Math-Module 6.1-6.3 Literature Connection- Think Up!** 	⁻ -T.E. p.146

- Vocabulary Activity: *Think Up!*** T.E. pg. 146
- Voc. Formative Assessment-*Think Up*!** T.E. pg.146

0	EB's: GO Math TE pg. 245, 251, 257 (English Language Support Linguistic Accommodations
0 0	GT Extensions: <i>Think Up</i> !** TE pg. 152 Intervention: <i>Think Up</i> !** TE pg. 151
• E	xit Ticket - <i>Think Up</i> !** SE pg. 124 (Reflection/Closure Activity)

Checking for Understanding

- I can model to show the product of a fraction and a whole number by...
- I can find the product of a fraction and a whole number without using a model by...
- What would be another way to solve multiplication of fractions?

Learning Intentions for Emergent Bilinguals

Sample Assessment Items

Evidence of Learning



Module 7 of 9 (5 Days):					
	Division of Whole Numbers				
ing, (P)	5.3C solve with proficiency for quotients of up to a four-digit dividend by a two-digit divisor using strategies and the standard algorithm (S)				
EKS (S) Support ocess	English Language Proficiency Standards				
TH Readiness, (Pr	The student uses mathematical processes to acquire and demonstrate mathematical understanding.				
(R)]	Process Standards: 5.1A, 5.1B, 5.1C, 5.1D, 5.1E, 5.1F, 5.1G				
anguage 'es	The Learner Will (TLW):				
	• solve and represent long division with quotients of up to a four-digit divided by a two-digit divisor using the standard algorithm.				
and L bjectiv	• read, write, and verbally describe the steps to solve for the quotients when dividing up to a 4-digit dividend by a 2-digit divisor.				
Content O	• Student linguistic accommodations should reflect listening, speaking, reading, and writing. Learning Intentions for Emergent Bilinguals				
ions	• Applying "key words" to select the appropriate operation instead of understanding the context of the problem*				
Misconcept	 Misunderstanding the context of a remainder in a real-world division problem* Not recognizing the need to preserve place value in the quotient, especially when the dividend includes a zero 				
nnections	• Students need to become fluent with multi-digit division as they will be asked to solve problems using all four operations and extend their understanding of division of whole numbers to division of decimals.				
Content Co					

• • •	dividend divisible* divisor quotient
• •	factors multiply subtract
	• • •

Anchor charts

•



- Math Warm-up: TEKSas Target Board Set 5 Week 10
 - LFCISD Problem Solving Method and Problem Solving Bookmarks



- Math Study Guide
- Video-Math Antics-https://www.youtube.com/watch?v=HdU_rf7eMTI
- Video-Khan Academy-<u>https://www.khanacademy.org/math/arithmetic-home/multiply-divide/division-intro/v/division-1</u>
- Interactive 5th Grade Journal Notebook (curriculum server)

Divide the factor by the divisor and place factor above last digit used.	42 19707 Think: Can I use rounding? 97+40 = 2		Divisor
Multiply the factor by the divisor and place below portion of dividend used.	42 9707	The	Quotient
Subtract the product from the portion of the childend used.	42[9707 <u>\$4</u>	uotient and divis	Dividend + D
Bring down the next unused digit in the dividend.	42 9707	or are factors of t	ivisor = Quosen
Repeat steps above unit all digts of dividend are used.	42 970 -126	he dividend.	e Divider Diviso
Remainder Place as numerator above dhisor as dividend and simplify if necessary.	$\begin{array}{c} 231\\ 42 \ 9707\\ \underline{-126}\\ \underline{-126}\\ 47\\ \underline{-42}\\ \underline{-42}\\ \end{array}$		= Quotien

Instruction and Student Engagement

• Carson Dellosa Interactive Notebook (p.18-19)



- Whole Group Activity- The teacher provides students with division word problems (up to 4-digit dividends and 2-digit divisors) that have been solved using a variety of methods or procedures (area model, standard algorithm, distributive property, etc.). Students work in small groups to determine if the division problems are solved correctly. If not, students explain the mistakes and complete the computations correctly.
- Workstation Folders
- **Go Math-**Module 2 (2.3-2.8)
- Literature Connection- Think Up!**-T.E. pg. 74
- Vocabulary Activity: *Think Up*!** T.E. pg.74
- Voc. Formative Assessment-Think Up! T.E. pg.74
- Differentiated Instruction
 - **EB's:** GO Math TE pg. 67, 73, 85, 91, 97 (English Language Support) <u>Linguistic Accommodations</u>
 - **GT Extensions:** *Think Up!*** TE pg.79
 - Intervention: *Think Up!* 88 TE pg. 78
- Exit Ticket-*Think Up*!** SE pg. 64 (Reflection/Closure Activity)

**If available on campus

Checking for Understanding (with sentence starters)

- I can divide whole numbers by.....
- The steps for solving quotients are...
- I can check my answer in division by
- The strategies that I have learned and can use to help me solve are...

Learning Intentions for Emergent Bilinguals

Sample Assessment Items

Nicholas put 1,012 baseball cards into boxes. He put 22 cards in each box.

How many boxes did Nicholas need for these baseball cards?

A 55

- **B** 50
- **C** 46
- **D** 47

In a school auditorium there are 33 seats in each row of seats. How many rows are needed for 528 students to each have a seat?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

Evidence of Learning
	Module 8 of 9 (5 Days):
	Divide and Represent Quotients of Decimals
TEKS ness, (S) Supporting, (P) Process	 5.3G solve for quotients of decimals to the hundredths, up to four-digit dividends and two-digit whole number divisors, using strategies and algorithms, including the standard algorithm (R) 5.3F represent quotients of decimals to the hundredths, up to four-digit dividends and two-digit whole number divisors, using objects and pictorial models, including area
	models (S) <u>English Language Proficiency Standards</u>
(R) Read	The student uses mathematical processes to acquire and demonstrate mathematical understanding. Process Standards: 51A 51C 51D 51E 51E 51G
	Trocess Standards: 5.17, 5.10, 5.10, 5.10, 5.10
uage	 solve and represent quotient of decimals using pictorial models.
ang es	• solve for quotients of decimals using the standard algorithm.
t and La Dbjective	• read, write, and verbally describe the steps to solve for the quotients of decimals when dividing up to a four-digit dividend by a two-digit divisor.
Conter	• Student linguistic accommodations should reflect listening, speaking, reading, and writing. Learning Intentions for Emergent Bilinguals
sconceptions	• When applying the standard algorithm, not articulating the correct place value understanding (e.g., $384 \div 3 = x$; "three goes into three one time" instead of "there are 100 groups of three in 300")
	 Reverting to past experience when using base ten blocks to represent whole numbers and becoming confused when using the manipulatives to represent decimal values
Μ	• Applying the use of "key words" to select addition or subtraction instead of understanding the context of the problem

Content Connections	•	Using concrete objects and pictorial models to represent the division of decimals supports students in developing the concrete understanding of the concept before moving to the abstract development of a strategy and/or algorithm. Instruction is limited to four-digit dividends and two-digit whole number divisors (e.g., $4.6 \div 2 = x$). It is essential for students to estimate (rounding and compatible numbers) quotients before solving division problems. This allows students to continue to use whole number division strategies and apply reasonableness when determining quotient of decimals.
Academic Vocabulary *new to grade level	•	dividend divisor quotient

	Anchor Chart			
	DIVI STEP 1: sel up division prob 5)2 STEP 2: divide as usual STEP 2: divide as usual STEP 2: divide as usual STEP 2: divide as usual	DING decimals em as usual 5.1 515 5 0 5 		
÷	• Math Warm-up: TEKSas Target	Board - Set 6 Week 11		
ment	LFCISD Problem Solving Method	and Problem Solving Bookmarks		
 Math Study Guide Go Math Videos Go Math-Digital-Module 4/Math on the Spots <u>4.1</u>; <u>4.2</u>; <u>4.4</u>; <u>4.5</u> Divide Decimals 				
	• Interactive 5th Grade Journal Notebook (curriculum server)			
	Divide Decimals by Whole Numbers Tina has \$2.10 and wants to share the money with two friends. If Tina divides her money by three, how much will each get? Use area model and algorithm to solve.	 I can represent of decimals to the Write an equation for the division problem modeled. Output: Output: Outpu		



- Whole Group Activity-Students use 10×10 grids of centimeter grid paper to create models for decimal division. The grid represents 1 whole, and each small square represents 1 hundredth. The teacher poses a problem such as $0.06 \div 2$. To model the solution, students cut a strip of 6 small squares from a 10×10 grid to represent the dividend. Next, students cut the strip of small squares into 2 equal sections that are 0.03 each. Students record an equation ($0.06 \div 2 = 0.03$) to show the solution. Students continue this activity with other decimal numbers and look for patterns in the equations.
- Workstation Folders
- Go Math- Module 4 (4.1--4.4)
- Literature Connection- Think Up!**-T.E. p. 123
- Vocabulary Activity: *Think Up*!** T.E. pg. 123
- Voc. Formative Assessment-Think Up!** T.E. pg. 123
- Differentiated Instruction
 - EB's: GO Math TE pg. 155, 161, 167, 173, 179 (English Language Support) <u>Linguistic Accommodations</u>
 - **GT Extensions:** *Think Up!*** TE pg. 116
 - Intervention: *Think Up*!** TE pg. 115
- Exit Ticket-*Think Up*!** SE pg.94 (Reflection/Closure Activity)

Checking for Understanding (with sentence starters)

- My quotient is reasonable because...
- The manipulatives represent the quotients of decimals by ...
- The step-by-step strategies on how to divide decimals are...

Learning Intentions for Emergent Bilinguals

Sample Assessment Items

A cafeteria worker used 8.05 kilograms of meat to make 35 lunches. Each lunch had the same amount of meat.

What was the mass in kilograms of the meat in each lunch?

- **F** 2.03 kg
- **G** 0.23 kg
- H 0.023 kg
- **J** 2.3 kg

The hundredths model is shaded to represent a division problem.



Which equation is represented by the model?

A
$$0.72 \div 9 = 9$$

C $0.72 \div 9 = 8$

D $0.72 \div 9 = 0.08$

Module 9 of 9 (5 Days): Division of Fractions			
TEKS (R) Readiness, (S) Supporting, (P) Process	 5.3L divide whole numbers by unit fractions and unit fractions by whole numbers (R) 5.3J represent division of a unit fraction by a whole number and the division of a whole by a unit fraction such as 1/3 ÷ 7 and 7 ÷ 1/3 using objects and pictorial models, including area models (S) English Language Proficiency Standards The student uses mathematical processes to acquire and demonstrate mathematical understanding. Process Standards: 5.1A, 5.1B, 5.1C, 5.1E, 5.1F 		
Content and Language Objectives	 The Learner Will (TLW): solve problems that involve dividing whole numbers by unit fractions when given a pictorial model. create pictorial models that represent various problems that divide whole numbers by unit fractions. read, write, and verbally describe problems involving division with whole numbers and unit fractions. create models to show division of a whole number by a unit fraction. Student linguistic accommodations should reflect listening, speaking, reading, and writing. Learning Intentions for Emergent Bilinguals 		
Misconceptions	 Confusing the dividend from the divisor (e.g., 4 ÷ 1/4 = x; "how many fours divide into 1/4" instead of "how many fourths divide into four wholes?")* Confusing whether to multiply and/or divide fractions when given a contextual situation* Misrepresenting whole numbers as having the same denominator as the given fraction (e.g., 4 ÷ 1/3 is the same as 4/3 ÷ 1/3) 		
Content Connections	• Using concrete objects and pictorial models to represent the division of fractions by whole numbers and whole numbers by fractions supports students in developing the concrete understanding of the concept before moving to the abstract of developing a strategy and/or algorithm.		

- (area) model*
- dividend
- division
- divisor
- Chart/Table Diagram/Image
- equal parts*
- equal shares*
- quotient
- unit fraction

Academic Vocabulary





• Whole Group Activity- Students work with partners to create models for division of a whole number by a unit fraction. The teacher provides each group

with a ruler, scissors, and index cards. For example, to model $4 \div \frac{1}{6}$, students cut

each of 4 cards into 6 equal pieces. The total number of pieces created (24 pieces) represents the quotient. Students write a word problem and an equation that can be used to represent their model.

- Workstation Folders
- Go Math-Module Module 6-Lesson 6.4 & 6.6
- Literature Connection- *Think Up*!**-T.E. p. 158 If You Hopped Like a Frog – David M. Schwartz The Multiplying Menace Divides – Pam Calvert Working with Fractions – David A. Adler
- Vocabulary Activity: *Think Up*!** T.E. pg. 158
- Voc. Formative Assessment-*Think Up*!** T.E. pg. 158 *Think Up*!** SE Unit 13 pg.128-133 *Think Up*!** SE Unit13 Assessment pg.135-136
- Differentiated Instruction
 - **EB's:** GO Math TE pg. 263 and 275 <u>Linguistic Accommodations</u>
 - **GT Extensions:** *Think Up!*** TE pg. 163
 - Intervention: *Think Up*!** TE pg.162
- Exit Ticket-Think Up!** SE pg.134 (Reflection/Closure Activity)

Checking for Understanding

- Another concrete model I might use to divide the numbers is...
- The step-by-step strategies for solving division of fractions are...
- How do you divide a whole number by a fraction and divide a fraction by a whole number?
- How would you use pictorial and area model to represent division of fractions?
- Can you think about another strategy you could use to solve division of fractions?

Learning Intentions for Emergent Bilinguals

Sample Assessment Items

Angelina used $\frac{1}{3}$ of a bag of soil to fill 6 flowerpots. She filled each flowerpot with the same amount of soil. How much soil did Angelina use to fill each flowerpot? **F** $\frac{1}{18}$ of a bag **G** 18 bags **H** $\frac{1}{2}$ of a bag **J** 2 bags Which model represents the expression $4 \div \frac{1}{8}$? **F** $\overrightarrow{|||}$



Evidence of Learning

Unit II: Algebraic Relationships (5 Weeks) Unit Description:

In Unit II, students will apply mathematical process standards to develop concepts of expressions and equations. And, apply mathematical process standards to solve problems by collecting, organizing, displaying, and interpreting data.

Mastery Learning Objectives:	Essential Questions:
 The student applies mathematical process standards to develop concepts of expressions and equations, and explain the meaning of grouping symbols. The student can solve multi-step problems with unknown variables. The student can represent and solve problems by analyzing and representing categorical and discrete data. ELPS: The students will develop their receptive and expressive skills. (reading, writing, speaking, and listening) 	 Can you explain how brackets/parentheses affect the outcome? What is the value of this expression? Describe the steps you would need to take to solve for the unknown. How much longer is the longest object than the shortest object on the dot plot/stem and leaf/bar graph, etc.? Would a different method help in solving this problem?

<u>Real World/Cross-Curricular Connections</u>:

- Literature: "The Story of The Order of Operations" by Kim Huffstetler
- Explain to students that a method was created, as far back as the 1500's, to avoid confusion when solving problems with multiple operations. Math won't work if you can't be sure of the answer.
- Allow students extra practice by allowing them to explore when they would use order of operations in real life. For example, when they go to a store and want to use a coupon, they must first add up the expenses, then subtract the coupon.

Subunit 1 of 3 (5 Days): Simplify Expressions

Subunit Description:

• apply mathematical process standards to develop concepts of expressions and equations.

Before	Now	After
 Students solve problems related to perimeter and area of rectangles where dimensions are whole numbers. Students applied the order of operations as they worked with equations such as P=2L+2W (4.5D) 	• Students are introduced to parentheses and brackets as grouping symbols within numerical expressions. Fifth graders also translate words into symbols and record numerical expressions that include grouping symbols. (5.4E)	• Students generate equivalent numerical expressions using order of operations, including whole number exponents and prime factorization.(6.7A)
	<u>Materials/Texts/Resources:</u>	
	(* available in Spanish)	
 Go Math* Imagine Math* Reflex Math* Math Study Guide Education Galaxy TEKSas Target Board Curriculum Server Fast Focus (suggested resource) Countdown to STAAR/Gaute STAAR Master (suggested served) Think Up** 	urce) intlet (suggested resources) resource)	
If available on campus**		
• Available in Spanish*		

Module 1 of 1 (5 Days): Numerical Expressions				
TEKS (R) Readiness, (S) Supporting, (P) Process	 5.4F simplify numerical expressions that do not involve exponents, including up to two levels of grouping (R) 5.4E describe the meaning of parentheses and brackets in a numeric expression (S) English Language Proficiency Standards The student uses mathematical processes to acquire and demonstrate mathematical understanding. Process Standards: 5.1A, 5.1B, 5.1F, 5.1G 			
Content and Language Objectives	 The Learner Will (TLW): solve math expressions using the order of operations that do not involve exponents. read, write and orally describe the steps to solve a numerical expression. discuss the meaning of parentheses and brackets in an expression. Student linguistic accommodations should reflect listening, speaking, reading, and writing. Learning Intentions for Emergent Bilinguals 			
Misconceptions	 Working problems from left to right (e.g., 5 + 10 x 4 ≠ 15 x 4 = 60) instead of applying order of operations (e.g., 5 + 10 x 4 = 5 + 40 = 45) Working addition problems first then subtraction (e.g., 15 - 6 + 3 ≠ 15 - 9 = 6) instead of which operation comes first in reading from left to right (e.g., 15 - 6 + 3 = 9 + 3 = 12) Working multiplication problems first then division (e.g., 24 ÷ 3 x 2 ≠ 24 ÷ 6 = 4) instead of which operation comes first when reading from left to right (e.g., 24 ÷ 3 x 2 ≠ 24 ÷ 6 = 4) instead of which operation comes first when reading from left to right (e.g., 24 ÷ 3 x 2 = 8 x 2 = 16) Not appropriately translating numerical expressions from word problems Misidentifying parentheses and brackets as additive [e.g., 8(9-2) = 8(7) = 15] instead of multiplicative [e.g., 8(9-2) = 8(7) = 56] Misunderstanding that the grouping symbols (e.g., parentheses and brackets) communicate the order of the operations performed 			

Content Connections	•	Allow students extra practice by allowing them to explore when they would use order of operations in real life. For example, when they go to a store and want to use a coupon, they must first add up the expenses, then subtract the coupon. Understanding the purpose of parentheses and brackets allows students to apply their use to representing multi-step problems effectively. This knowledge will then extend to the application of parentheses and brackets to the order of operations.
Academic Vocabulary *new to grade level	•	bracket equivalent* order of operations equivalent expression* expression parentheses*

• Anchor charts



What is P	EMDAS?
PEMDAS is the (order of operations
expressions with mu	it evaluating
Parantheses ()	
Exponents 23	
Multiplication ×, 5n, 5x3, 5(3)	Multiplication & Division are B.F.F.S. Whichever
Addition +	Solved first.
Subtraction -	Comes First left to right
P 3+(7x6)=3-4	list: Remember to
M (3+14) - 4	write PEMDAS in the margin & check
5 1 17	You solve.

- Math Warm-up: TEKSas Target Board Set 7 Week 13
 - <u>LFCISD Problem Solving Method</u> and <u>Problem Solving Bookmarks</u>



- Math Study Guide
- Videos: <u>PEMDAS SONG (with lesson) order of operations!</u>
- Online games: Order of Operations
- Carson Dellosa Interactive Notebook (p.40-41)



- Small Group Activity: Place students in small groups. Read a vocabulary term, and have each group write a question for which the term is the answer on a dry erase board. The question must include the definition or an example. Award a point to the group with the first correct response. Continue playing until all terms have been addressed.
- Activity: Begin to solve an expression with grouping symbols for the class, but make a deliberate error. Allow the first student who identifies the error to step forward to complete the problem correctly. Continue with other expressions.
- Workstation Folders
- Vocabulary Activity: teacher places a cards with vocab terms printed/written on them in a box. Students take turns taking a card from the box without showing the class and acts out the meaning. Each student writes down the word they think it is on a dry erase board, the first one to display the correct word is next to select and act out the term (from *Think Up*!** TE).

• Differentiated Instruction

• **EB's:** GO Math TE pg.309 (English Language Support)

Linguistic Accommodations

- **GT Extensions:** *Think Up!*** TE pg. 310
- Intervention: *Think Up!*** TE pg. 311

** If available on campus

Checking for Understanding

- After studying the expression, I notice...
- In the given expression, I should first...
- The second and third steps in the equation is...
- The last step is...
- In my own words, I will first...
- In this problem, the student made a mistake in the _____ step because...
- The order in which I should solve this expression...

Learning Intentions for Emergent Bilinguals

Sample Assessment Items

What is the value of this expression?

$$10[3 + (7 + 5) \div 3]$$

Evidence of Learning

B 34 **C** 50

A 14

D 70

Jacob wrote the expression shown.

$10 \div 5 + 4(72 - 6)$

What do these parentheses indicate in the expression?

- F Divide 10 by 5 before adding 4
- G Multiply 4 by 72 before subtracting 6
- H Add 5 and 4 together before subtracting 6 from 72
- J Subtract 6 from 72 before multiplying by 4

Subunit 2 of 3 (10 Days): Problems with Unknown Variables Subunit Description:

- **represent** multi-step problems with whole numbers **using** equations with a letter standing for unknown quantity or variable that involve the four operations
- **solve** multi-step problems with whole numbers **using** equations with a letter standing for unknown quantity or variable that involve the four operations

	Before	Now	After	
•	Students represent multi-step problems involving the four operations with whole numbers using strip diagrams and equations with a letter standing for the unknown quantity. (4.5A)	• Students represent and solve multi-step problems involving the four operations with whole numbers using equations with a letter standing for the unknown quantity. (5.4B)	• Students apply and extend previous understanding of operations to solve problems using addition, subtraction, multiplication, and division of rational numbers. (7.3B)	
		<u>Materials/Texts/Resources:</u> (* available in Spanish)		
•	Go Math*			
•	• Imagine Math*			
•	Reflex Math*			
•	Math Study Guide			
•	Education Galaxy			
•	TEKSas Target Board			
•	Curriculum Server			
•	Fast Focus (suggested resource)			
•	 Countdown to STAAR/Gauntlet (suggested resources) 			
•	STAAR Master (suggested resource)			
•	Think Up**			
If	If available on campus**			

Module 1 of 1 (10 Days): Multi-Step Problems with Unknown Variables				
TEKS (R) Readiness, (S) Supporting, (P) Process	5.4B represent and solve multi-step problems involving the four operations with whole numbers using equations with a letter standing for the unknown quantity. (R)			
	English Language Proficiency Standards			
	The student uses mathematical processes to acquire and demonstrate mathematical understanding. Process Standards: 5.1B, 5.1C, 5.1D, 5.1E, 5.1F, 5.1G			
age	The Learner Will (TLW):			
ngu	• solve multi-step problems using equations			
and La jective	 read, write and orally describe the steps to solve for the unknown quantity list the steps they took to solve for the variable 			
Content a Ob	• Student linguistic accommodations should reflect listening, speaking, reading, and writing. Learning Intentions for Emergent Bilinguals			
su	• Not recognizing equivalent equations (e.g., e.g., multiple choice answer of $84 = 12 + 26 + m$ not being selected as student's representation of $84 - 12 - 26 = k$)			
lceptio	• Using "key words" to determine the operation instead of understanding the context of the problem			
Miscon	• Not appropriately applying the use of parentheses and brackets when representing the equation of a multiple-step problem			
	• Not solving all the steps in a multi-step problem			
Content Connections	• Explain to students that a method was created, as far back as the 1500's, to avoid confusion when solving problems with multiple operations. Math won't work if you can't be sure of the answer			





• Whole Group Activity: Teacher displays a problem and allows students in groups 5 minutes to solve the problem. At the end of 5 minutes, the teacher will ask group members to display their answer on their dry erase boards. The groups with the correct answer will receive a point. ***One way to ensure that everyone is participating is to number off each student in the group, preferably 1-6, and then have everyone complete their own work. At the end of the 5 minutes, teacher will roll a die and the number it lands on, selects the student whose answer will be represented for the whole group. This usually solves the issue of one student doing all the work for the group.

<u>Workstation Folders</u>

- Vocabulary Activity: Bean Bag Toss- 1) Divide class into 2 teams. 2) Place vocabulary cards on the floor. 3) First team member tosses a bean bag on a word and defines it for a point. If they cannot define the word the other team gets a chance to define and steal the point. 4) Team 2 tosses the bean bag and repeats process.
- **TX Go Math:** Algebra Equations 8.1-8.4
- Think Up: connect to Student Edition- pgs.177-186
- Differentiated Instruction
 - **EB's:** GO Math TE pg. 341 Linguistic Accommodations
 - **GT Extensions:** *Think Up!*** TE pg. 343
 - **Intervention:** *Think Up!*** TE pg. 343

Checking for Understanding

- The problem is asking me to find... •
- In other words, I need to solve...
- This problem reminds me of... ullet
- I can break down the process into smaller parts by...
- I can use a drawing/graphic organizer to...

Learning Intentions for Emergent Bilinguals

Sample Assessment Items Three friends rode their bikes last week.

- Christine rode her bike 27 kilometers.
- Philip rode his bike 12 kilometers less than Christine.
- Nathan rode his bike 3 times as far as Philip. •

Which equation represents n, the distance in kilometers Nathan rode his bike?

A $(27 + 12) \div 3 = n$

B $(27 - 12) \times 3 = n$

C $(27 - 12) \div 3 = n$

D $(27 + 12) \times 3 = n$

An elementary school had 90 boxes of glue sticks. Each box had 36 glue sticks. Teachers put all of the glue sticks into bags to give to the students. They put 6 glue sticks into each bag.

Which equation can be used to find b, the number of bags the teachers can fill with these glue sticks?

A 90
$$\times$$
 36 \div 6 = b

B 90 \div 6 + 36 = b

C $36 \times 90 + 6 = b$

D $36 \times 6 \times 90 = b$

Subunit 3 of 3 (10 Days): Data Subunit Description:

• Solve problems by collecting, organizing, displaying and interpreting data from frequency tables, dot plots, bar graphs, stem-and-leaf plots, and scatterplots

Before	Now	After			
• students summarize a data set with multiple categories using frequency table, dot plot, pictograph, or bar graph with scaled intervals (3.8A)	• students solve one and two step problems using data from a frequency table, dot plot, bar graph, stem and leaf plot, or scatterplot (5.9C)	• students represent numeric data graphically, including dot plots, stem-and-leaf plots, histograms, and box plots (6.12A)			
	• students represent categorical data with bar graphs or frequency tables and numerical data, including data sets of measurements in fractions or decimals, with dot plots or stem and leaf plots including paired				
	data on a scatter plot (5.9AB)				
	Materials/Texts/Resources:				
	(* available in Spanisn)				
• Go Math*					
 Imagine Math* 	 Imagine Math* 				
• Reflex Math*					
<u>Math Study Guide</u>					
Education Galaxy					
• TEKSas Target Board	TEKSas Target Board				
Curriculum Server					
Fast Focus (suggested resource)					
 Countdown to STAAR/Gauntlet (suggested resources) 					
STAAR Master (suggested resource)					
• Think Up**					
If available on campus** Available in Spanish* 					

	Module 1 of 1 (10 Days):							
	Solve Problems Using Data							
	5.9C solve one and two step problems using data from a frequency table, dot plot,							
ing, (P) Process	bar graph, stem and leaf plot, or scatterplot (R)							
	5.9A represent categorical data with bar graphs or frequency tables and numerical							
	data, including data sets of measurements in fractions or decimals, with dot plots or							
	stem and leaf plots (S)							
EKS	5.9B represent discrete paired data on a scatter plot (S)							
T) (R) Readiness, (S) 9	English Language Proficiency Standards							
	The student uses mathematical processes to acquire and demonstrate mathematical understanding. Process Standards: 5.1A, 5.1C, 5.1D, 5.1E, 5.1F, 5.1G							
	The Learner Will (TLW):							
tent and Language Objectives	 solve and represent problems using data from a frequency table, dot plot, bar graph, stem and leaf plot, or scatterplot. represent categorical data with bar graphs or frequency tables and numerical 							
	data.							
	• read, write and describe data from different plots and graphs.							
	• list, organize, and display data from different plots and graphs.							
Con	• Student linguistic accommodations should reflect listening, speaking, reading, and writing. Learning Intentions for Emergent Bilinguals							

- When using the stem-and-leaf plot, having difficulty determining which values represent the stem and the leaf
- When using data on different types of graphs, interpreting the data as different because of the difference in the visual representations
- When using data on different frequency tables and/or bar graphs, interpreting the data as different because of the difference in the visual representations
- When using dot plots where dots represent multiple counts, assigning single counts or incorrect counts to the given dots
- Including a 0 as a leaf in a stem-and-leaf plot when there are no values for the respective stem; not including a 0 as a leaf in a stem-and-leaf plot when there are values for the respective stem
- Misrepresenting data on a scaled bar graph/dot plot where in-between intervals may not be labeled
- Thinking that the coordinate should form a straight line or follow a pattern on the grid
- Confusing the x- and y-axes
- Not understanding how a coordinate communicates information
- Given graphs of intervals other than one, including coordinates with fractions, not locating coordinates correctly
- Thinking the order in plotting a coordinate point is not important [e.g., thinking (1,3) is the same location as (3,1)]
- When using the stem-and-leaf plot, having difficulty determining what values represent the stem and the leaf
- When using data on different types of graphs, interpreting the data as different because of the difference in the visual representations
- When analyzing dot plots, bar graphs, and scatterplots, having difficulty interpreting data with intervals other than one and/or in-between intervals may not be labeled
- When using dot plots where dots represent multiple counts, assigning single counts or incorrect counts to the given dots
- Having difficulty understanding the context of data interpretation (e.g., number of students who have a grade higher than a "C" vs. number of students who have a "C" or higher)

Misconceptions

	• Interpreting data as fractional parts of a whole (e.g., what fraction of the surveyed chose pizza as their favorite lunch option)					
	•	Not being able to determine missing values of data or a given graph (e.g., 100 students were surveyed about their favorite sport; all data is given except for football; students must work backwards to determine the missing value for the number of students who choose football)				
Content Connections	•	This standard provides an opportunity for students to collect, organize, display, and interpret data using a scatterplot. This concrete experience allows students to better understand the data represented in order to solve one- and two-step problems.				
	•	Look for data such as from the census, consumption of a product, popularity of a landmark, etc. and have students study the data.				
	•	Have students conduct a survey. Students will then organize and display data on a graph. Students can write questions about the data in their graphs.				
Academic Vocabulary *new to grade level	•	bar graph* comparative language (more than*/less than/equal to, sum*/ difference*, least*/most*, greatest*)				
	•	joining/separating/comparing				
	•	data*				
	•	dot plot* frequency table line plot*				
	•	scatterplot				
	•	scaled intervals scatterplot* stem-and-leaf plot*				
		P				



- Math Study Guide
- Videos:

<u>Frequency tables and dot plots | Data and statistics</u> <u>5th Grade Math Scatterplots</u> Dot Plots – Line Plots – Data and Graphing

• Carson Dellosa Interactive Notebook (p.55-57)





- Whole Group Activity: The teacher places coins in a bag (at least 3 per student). Each student draws 3 coins from the bag. Students record a tally mark for each coin value and then completes a class frequency table. Based on the data, the class creates a class bar graph on chart paper.
- <u>Workstation Folders</u>
- Vocabulary Activity: Math Rap- divide class into groups and give each group a set of words that go together. Have each group create a rap song using the terms. The verse should show that students understand the meaning of the terms.
- Differentiated Instruction
 - **EB's:** GO Math TE pg.563 (English Language Support) <u>Linguistic Accommodations</u>
 - GT Extensions: Think Up!** TE pg. 564
 - Intervention: *Think Up!*** TE pg. 565

Checking for Understanding

- After studying the dot plot, I am noticing...
- The problem is asking me to...
- This stem-and-leaf plot is...
- A bar graph is/isn't a good choice because...
- This scatterplot does/doesn't represent the data because...
- The frequency table demonstrates...

Learning Intentions for Emergent Bilinguals

Sample Assessment Items

30 The table shows the heights of 10 seedlings.

	Heights of Seedlings												
Seedling	А	в	С	D	Е	F	G	н	I	J			
Height (in.)	$1\frac{1}{4}$	2	$1\frac{1}{4}$	$1\frac{1}{2}$	$\frac{3}{4}$	$2\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{1}{2}$	1	2			

Which dot plot represents these data?



Evidence of Learning

