



**Bluebonnet
Learning**
K-5 Math
EDITION 1

ENGLISH

Grade 5

Course Guide

TEACHER EDITION

Course Guide

K–5 Math Grade 5

Acknowledgment

Thank you to all the Texas educators and stakeholders who supported the review process and provided feedback. These materials are the result of the work of numerous individuals, and we are deeply grateful for their contributions.

Notice

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Introduction

Welcome to the Grade 5 Course Guide. This guide is designed to give Grade 5 teachers specific knowledge about the structure of the instructional materials to help them effectively transition into the program. Included in this guide is information about standards, assessment tools, the focus of each module, and ways for families to support students at home. This guide also provides information about how to tailor the culture of learning to the developmental needs of students, including a background on developmental advances that affect how students learn in Grade 5 and practical strategies for troubleshooting misconceptions collaboratively with students.

Profile of a Grade 5 Math Learner

Grade 5 is a year of change. Students are maturing physically, and their cognitive reasoning abilities are increasing profoundly. These changes make young people more prepared to complete advanced and demanding math, but these changes also make them more fearful of failure, confusion, and frustration as they do so. Against this backdrop, Grade 5 math teachers face the daunting challenge of not only teaching more advanced content, but also managing students' motivation and engagement. One of the most important tasks for a teacher is to encourage students to engage in productive struggle. This means that students are prepared to boldly and confidently confront mistakes, turn them into learning opportunities, and deepen their mathematical reasoning throughout the year. When students engage in productive struggle in Grade 5, they are able to carry their learning with them into the more challenging middle school math years, rather than forgetting what they learned soon after an assessment. As a result, more students are prepared to take and pass math courses that keep them on track for advanced math by the end of high school. This is why Grade 5 math teachers are an important influence on a young person's math career and overall academic trajectory.

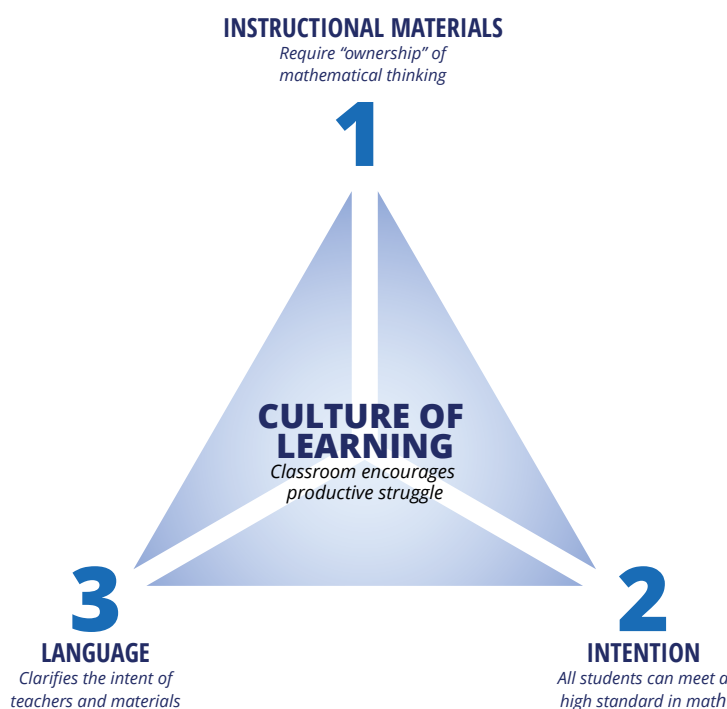
The modules in the *Bluebonnet Learning K–5 Math* instructional materials are designed to effectively help teachers analyze students' work and provide the instructional support that best meets students' needs. The activities invite students to reason mathematically. Less emphasis is placed on simply memorizing algorithms or relying on “math tricks” that might fail to yield correct results when the details of the problems change. This approach allows students to think independently, problem solve, and overcome misconceptions. Therefore, the *Bluebonnet Learning K–5 Math* instructional materials encourage layers of activities—fluency practice, application problems, concept development, and debriefing—to help students build their understanding. Because students will see concepts multiple times and from multiple angles, any challenge they face along the way will not define their math identities. Instead, it is another step on the journey to understanding.

For students to benefit from the *Bluebonnet Learning K–5 Math* instructional materials approach, they need to be provided with opportunities to engage in productive struggle. This helps pull students out of the all-or-nothing world of “good at math” versus “bad at math” and into a world of “we are all learning to become better at math,” which can go a long way toward preparing Grade 5 math learners for the important journey ahead. By creating a culture of learning and encouraging students to view challenges as an expected and even desirable part of the learning process, teachers can help students avoid a fear of math that could undermine the mathematical future of many students. Instead, students can start enjoying and feeling confident in math even if their answers do not always come quickly.

Culture of Learning in Grade 5

As noted in the Program and Implementation Guide, the way to engage math learners and help them embrace the productive struggle that's needed to learn deeply is to create a culture of learning.¹ As shown in the figure below, a culture of learning rests on a foundation of (1) high-quality instructional materials, (2) a teacher's intentions, and (3) the language that communicates the intent of teachers and materials.

A culture of learning can be created beginning on the first day of Module 1. A teacher can use language that communicates their intent for all students to be supported as they are held to a high standard for learning.² A culture of learning can also be maintained throughout the year since teachers will continue to support math learners as they embrace challenge. For example, teachers can use language that clarifies their intent of assigning the rigorous challenges students will face in the instructional materials.



A challenge for teachers is that it can take longer to use language that supports a culture of learning. However, using language that communicates a culture of learning supports students' developmental needs and learning. In contrast, language that communicates a culture of compliance can undermine students' motivation and engagement because it doesn't fit with their developmentally appropriate desire for autonomy and understanding.³

¹ Yeager. *10 to 25*, 2024.

² Cohen, Steele, and Ross, "The Mentor's Dilemma," 1999.

³ Ruck, Abramovitch, and Keating, "Children's and Adolescents' Understanding of Rights," 1998.



Teacher Behavior	Language that Communicates a Culture of Compliance	Language that Communicates a Culture of Learning
Introduce the next activity in the lesson plan.	Do this next. You'll get a bad grade if you don't.	This next activity will help you understand the material better because _____.
Give students a set of problems that they aren't supposed to finish perfectly in the allotted time (e.g. Sprint).	Just do your best.	Most of you won't answer all these problems and you might not get them all correct. That's okay. I'm trying to challenge you so that I can learn what you're prepared to do and what I need to teach you next.
Ask students to explain their thinking on a problem answered incorrectly.	Tell me why you got this wrong.	I'd like you to explain your thinking about this answer. It will help me know how to explain the concept in a way that will be more helpful to you. There is a good chance that somebody else made the same mistake, so your thinking can help the whole class learn.

The language in the second column promotes a culture of compliance. Students in grades 2 through 5 are likely to perceive this as disrespecting their need for autonomy and independent thinking.

The language in the third column promotes a culture of learning because it supports students' autonomy. It implies that students can own their thinking and that they deserve valid explanations. This approach can help students feel respected and cause them to be more motivated and engaged.

Collaboratively Troubleshooting Student Misconceptions

It is common for students to make mistakes as they build their understanding of new or difficult concepts. From a student perspective, mistakes can logically occur whenever students try to apply previous learning to new problems that require a different approach. To help students correct their thinking and develop a better understanding, teachers can identify the knowledge that students are building on when they make a mistake.

The *Bluebonnet Learning K–5 Math* instructional materials list common student mistakes for each module. Teachers can use this information to troubleshoot mistakes collaboratively with students.

As noted in the Program and Implementation Guide, *collaborative troubleshooting* is a routine to help teachers address students' misconceptions. The three steps to collaborative troubleshooting are

- (1) surface student thinking;
- (2) validate what the student did right; and
- (3) bridge to a better understanding.

In Step 1, it's helpful to ask questions to better understand what the student was thinking when they made a decision. For example, the teacher can ask, "Can you tell me more about your thinking on this problem?" or "I noticed you wrote _____. What were some of your reasons for doing that?"

In Step 2, it's helpful to point out the parts of the problem that the student understood or did correctly. That way, the student maintains their successful thinking as they retry a problem. For example, teachers can say "I noticed you did _____ and wrote _____, and that's great because that means you understood _____."

Last, in Step 3, the teacher can build on the student's assets and bridge to a better understanding. It can help to ask guided questions that invite the student to build a stronger understanding. For example, the teacher can ask the following questions:

- If you keep _____ [correct thinking] and changed _____ [misconception] to _____ [alternative], then what do you think might happen?"
- "What would happen if you did _____ instead of _____?"
- "If _____ [correct thinking] is true, then how does that thinking affect _____ [misconception]?"

In practice, this routine may look and sound like the following teacher–student dialogue, which is based on a misconception for Grade 5 Module 1 Topic B that is listed in the Module Overview.

Note: Teachers can adapt this sample dialogue to other misconceptions listed in the Module Overview.



Scenario: A student makes an error when comparing decimal numbers using units that have different values. The student believes that 0.125 is greater than 0.3. The teacher has a one-on-one discussion with the student.

Step 1: Surface student thinking.

T: How did you decide that 125 thousandths is greater than 3 tenths?

S: I know that 125 is greater than 3. 125 has more digits.

Step 2: Validate what the student did right.

T: You are right. 125 ones is greater than 3 ones. When numbers are in the same unit, we can compare them. Say these decimal numbers in unit form.

S: 125 thousandths. 3 tenths.

Step 3: Bridge to a better understanding.

T: What do you notice about the units? Are they the same or different?

S: They are different.

T: Let's use a place value chart to help us name the decimal numbers in the same unit. Write 3 tenths in standard form on your place value chart. Then write 125 thousandths in standard form under 3 tenths.

S: (Write.)

T: Let's look at 3 tenths in the place value chart. I notice a 3 in the tenths place. How many hundredths are in the hundredths place?

S: Zero.

T: Write zero in the hundredths place. How many thousandths are in the thousandths place?

S: Zero.

T: Write zero in the thousandths place. (Point to 300 thousandths in the chart.) Now say this decimal number in unit form.

S: 300 thousandths.

T: Yes, if we rename 3 tenths as thousandths, we would have 300 thousandths. Now say both decimal numbers in the chart in unit form.

S: 125 thousandths. 300 thousandths.

T: Now the decimal numbers are written in the same unit. Let's compare them. Which decimal number is greater?

S: 300 thousandths. 125 thousandths is less than 300 thousandths.

T: Is it true that 125 thousandths is greater than 3 tenths?

S: No, it's not true.

T: So, what should we do before we compare decimal numbers?

S: We should name them in the same units before we compare them.

Assessment Reflection Tool

An assessment reflection can be powerful in helping to surface student thinking and in helping students to monitor and track their own growth. It can also help students anticipate and process any thoughts they may have about completing an assessment.

The Assessment Reflection Tool can help teachers guide discussions both prior to and after an assessment. These discussions help the teacher promote a culture of productive struggle as students go into testing. These discussions also support students' needs after testing and give students the opportunity to reflect on their progress and learn from their mistakes after an assessment.

Grades 2–5				
		Teacher Says or Does	Students Say or Do	Teacher Says or Does
Pre-assessment	Opening Discussion	Hand out the Assessment Reflection. Say, “As we prepare to complete this assessment, take a moment to reflect on your learning and what you are thinking in anticipation of the assessment.” Encourage quiet reflection during this time. Ask, “What are you thinking? Write down your thoughts in the top box of your Assessment Reflection.”	Read their responses aloud to a partner to help them be comfortable sharing out in a larger group.	Say, “I have heard a lot of your responses. Whatever you may be thinking, I want you to remember that this assessment is just one part of your learning journey.” Say, “Remember, an assessment is just a way for me to see where you are in your learning so that I can better support you.”
	Item and Content Analysis	Direct students to complete the assessment. Say, “Before you answer the assessment questions, look at each one and write a plus sign next to any questions you think you will get right. Write a minus sign next to any questions you feel unsure about. Say, “After you answer each question, feel free to go back and change any plus or minus signs. You may be unsure of a question at first glance but then find that you have the tools to solve it. Also, you may believe a question will be simple but then face difficulties when solving it.”	Complete their item analysis as they take their assessment. This will be used for the post-assessment analysis.	Monitor student responses as students complete the assessment. After the assessment, review each student’s Assessment Reflection to keep track of student confidence level trends.



Grades 2–5

Grades 2–5				
		Teacher Says or Does	Students Say or Do	Teacher Says or Does
Post-assessment	Reflection	Hand back each student’s assessment. Say, “I see a lot of things for you to be proud of, like all the work you did. Remember, this assessment is just a tool that we can use to help you know where you are along your learning journey.” Say, “I am going to give you 1 minute to write down everything you’re thinking now that you’ve taken the assessment. You will not share these reflections with other students. I will be the only one who reads them.” Consider providing a list of words to help students identify their reflections.	Take time to complete the reflection freewrite. Complete the “After the assessment” questions in the Assessment Reflection. [Note: Some students may have very clear responses, and some may need support with identifying their thoughts.]	Walk around and monitor student responses. Take the opportunity to have one-on-one conversations with any students who need support with identifying their reflections. Say, “I can see you wrote ____ about your assessment. Why?” Listen to and acknowledge student responses. Say, “We are going to work together to help you understand where the mistakes came from. Mistakes are important because they help us grow.”
	Honoring Mistakes	Say, “Let’s dive into our mistakes together. Work with your group to complete the table on your Assessment Reflection.” Invite students to select 1 or 2 questions from their Assessment Reflection. For each question, direct them to fill out a row in the table.	Write down their question choice(s) and work with their groups to complete their item analysis.	Collect Assessment Reflections and discuss specific questions with groups or individual students. Say, “I saw a lot of things to be proud of. I saw all the work and the thinking that you put into this assessment. It is also okay for you to be confused or unsure about some items on the assessment. We will work together to help you keep improving your knowledge and understanding.” Use collaborative troubleshooting to help guide students through their assessment and clear up any misconceptions.





Student Name: _____ **Date:** _____

As we prepare to complete this assessment, what are you thinking?				
Question	What were your reflections on this question during the assessment?	If the question you answered incorrectly was confusing, why was it confusing?	What did you know or what were you able to do?	What will you remember for next time?
		• I didn't know where to start. • I wasn't sure what the question was asking. • The visual (picture, chart, map, etc.) confused me. • I forgot the content. • There were words I didn't know.		
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		• I didn't know where to start. • I wasn't sure what the question was asking. • The visual (picture, chart, map, etc.) confused me. • I forgot the content. • There were words I didn't know.		
Now that you are done with the assessment, what are you thinking?		What are some things you can do differently to prepare for the next assessment?		

Progression of Mathematical Concepts

	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	1st QUARTER	2nd QUARTER	3rd QUARTER	4th QUARTER
	M1: Numbers to 10 (41 days)	M1: Sums and Differences to 10 (43 days)	M1: Sums and Differences to 100 (9 days) M2: Subtraction of Length Units (11 days)	M1: Properties of Multiplication and Division and Solving Problems with Units of 2–5 and 10 (22 days)	M1: Place Value, Rounding, and Algorithms for Addition and Subtraction (23 days)	M1: Place Value and Decimals (19 days)				
	M2: Two-Dimensional and Three-Dimensional Shapes (10 days)	M2: Introduction to Place Value Through Addition and Subtraction Within 20 (33 days)	M3: Place Value, Counting, and Comparison of Numbers to 1,200 (22 days)	M2: Place Value and Problem Solving with Units of Measure (31 days)	M2: Unit Conversions and Problem Solving with Metric Measurement (10 days)	M2: Multi-Digit Whole Number and Decimal Operations (37 days)				
	M3: Comparison of Length, Weight, Capacity, and Numbers to 10 (33 days)	M3: Ordering and Comparing Length Measurements as Numbers (13 days)	M4: Addition and Subtraction Within 200 with Word Problems to 100 (30 days)	M3: Multiplication and Division with Units of 0, 1, 6–9, and Multiples of 10 (26 days)	M3: Multi-Digit Multiplication and Division (38 days)	M3: Addition and Subtraction of Fractions (18 days)				
	M4: Number Pairs, Addition and Subtraction to 10 (44 days)	M4: Place Value, Comparison, Addition and Subtraction to 40 (23 days)	M5: Addition and Subtraction Within 1,000 with Word Problems Within 1,000 (23 days)	M4: Multiplication and Area (10 days)	M4: Angle Measure and Plane Figures (20 days)	M4: Multiplication and Division of Fractions (30 days)				
	M5: Numbers 10–20, Counting to 100, and Understanding Work (31 days)	M5: Identifying, Composing, and Partitioning Shapes (18 days)	M6: Foundations of Multiplication, Division, and Area (22 days)	M5: Fractions as Numbers on the Number Line (36 days)	M5: Fraction Equivalence, Ordering, and Operations (35 days)	M5: Addition and Multiplication with Volume and Area (23 days)				
	M6: Analyzing, Comparing, and Composing Shapes (6 days)	M6: Place Value, Comparison, Understanding Income with Addition and Subtraction to 100 (35 days)	M7: Problem Solving with Length, Money, and Data (29 days)	M6: Financial Literacy and Data (17 days)	M6: Introduction to Decimals and Financial Literacy (22 days)	M6: Problem Solving with the Coordinate Plane and Data (38 days)				
			M8: Time, Shapes, and Fractions as Equal Parts of Shapes (19 days)	M7: Geometry and Measurement Word Problems (23 days)	M7: Exploring Measurement with Multiplication and Data (17 days)					

Key:

Number	Geometry	Number and Geometry, Measurement	Fractions
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Sequence of Grade 5 Modules Aligned with the TEKS

Module 1: Place Value and Decimals

Module 2: Multi-Digit Whole Number and Decimal Operations

Module 3: Addition and Subtraction of Fractions

Module 4: Multiplication and Division of Fractions

Module 5: Addition and Multiplication with Volume and Area

Module 6: Problem Solving with the Coordinate Plane and Data

Summary of Year

Grade 5 mathematics is about (1) developing fluency with addition and subtraction of fractions, and developing an understanding of multiplication of a whole number and a fraction and of division with fractions in limited cases which include unit fractions divided by whole numbers and whole numbers divided by unit fractions; (2) extending division to two-digit divisors, integrating decimals into the place value system, developing an understanding of operations with decimals to the hundredths, and developing fluency with whole-number and decimal operations; and (3) developing an understanding of volume.

Rationale for Module Sequence in Grade 5

Students' experiences with algorithms as ways to manipulate place value units in Grades 2–4 begin to pay dividends in Grade 5. In Module 1, whole-number patterns with number disks on the place value chart are easily generalized to decimal numbers. As students solve word problems with measurements in the metric system, where the same patterns occur, they begin to appreciate the value and the meaning of decimals. Students apply their work with place value to adding, subtracting, multiplying, and dividing decimal numbers with tenths and hundredths.

Module 2 begins by using place value patterns along with the distributive and associative properties to multiply multi-digit numbers by multiples of 10, which leads to fluency with multi-digit, whole-number multiplication. For multiplication, students must grapple with and fully understand the distributive property (one of the key reasons for teaching the multi-digit algorithm). While the multi-digit multiplication algorithm is a straightforward generalization of the one-digit multiplication algorithm, the division algorithm for two-digit divisors requires far more care to teach because students have to also learn estimation strategies, error correction strategies, and the idea of successive approximation (all of which are central concepts in math, science, and engineering).

Work with place value units paves the path toward fraction arithmetic in Module 3 as the emphasis on place value in elementary math shifts to the larger set of fractional units for algebra. Like units are added to and subtracted from like units:

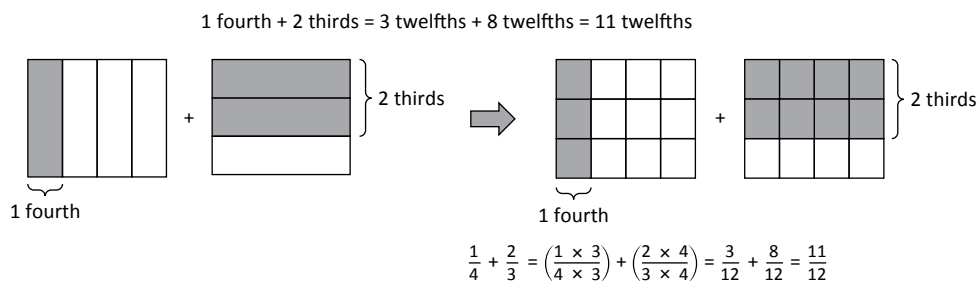
$$1.5 + 0.8 = 1\frac{5}{10} + \frac{8}{10} = 15 \text{ tenths} + 8 \text{ tenths} = 23 \text{ tenths} = 2 \text{ and } 3 \text{ tenths} = 2\frac{3}{10} = 2.3$$

$$1\frac{5}{9} + \frac{8}{9} = 14 \text{ ninths} + 8 \text{ ninths} = 22 \text{ ninths} = 2 \text{ and } 4 \text{ ninths} = 2\frac{4}{9}$$

A new complexity is introduced: When units are not equivalent, they must be changed to smaller equal units so they can be added or subtracted. One of the best models for showing this is the rectangular fraction model

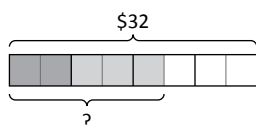


given below. The equivalence is then represented symbolically as students engage in active meaning-making rather than following the perhaps unclear rule to “multiply the top and bottom by the same number.”



Relating different fractional units to one another requires extensive work with area models and number lines whereas strip diagrams are used often in word problems. Strip diagrams, which students began using in early grades and which become increasingly useful as students apply them to a greater variety of word problems, hit their full strength as a model when applied to word problems that involve fractions. At the heart of a strip diagram is the now-familiar idea of forming like units. In fact, forming units to solve word problems is one of the most powerful examples of the unit theme and is particularly helpful for understanding fraction arithmetic, as in the following example.

Jill had \$32. She gave $\frac{1}{4}$ of her money to charity and $\frac{3}{8}$ of her money to her brother. How much did she give altogether?



Solution with units:

8 units = \$32
1 unit = \$4
5 units = \$20

Solution with arithmetic:

$$\frac{1}{4} + \frac{3}{8} = \frac{2}{8} + \frac{3}{8} = \frac{5}{8}$$

$$\frac{5}{8} \times 32 = 20$$

Jill gave \$20 altogether.

In Module 4, students learn to multiply a whole number by a fraction and begin the work of division with fractions. Students decompose non-unit fractions and represent the decompositions as repeated addition sentences. They will apply this understanding of decomposition and multiplication along with the associative property to multiply a whole number by a fraction. Then, students extend this understanding to multiply a whole number by a mixed number. Continuing in Module 4, they learn to evaluate expressions, such as *3 times the difference between $\frac{2}{3}$ and $\frac{1}{5}$ or two-thirds the sum of 7 and 9.*

Toward the end of Module 4, students begin the work of division with fractions using strip diagrams and number lines to reason about division of a whole number by a unit fraction and a unit fraction by a whole number. Through real-world scenarios, students also understand how to balance a simple budget. They apply fraction and decimal multiplication to personal financial literacy.

Students' work with fractions is applied to area and volume in Module 5. Now, questions can be asked about the area of a rectangle with side lengths that are a whole number and a fraction or a whole number and a mixed number. Measuring volume once again highlights the unit theme, as a unit cube is chosen to represent a volume unit and used to measure the volume of simple figures composed of rectangular prisms.

In the final module of *A Story of Units*, students connect plane geometry with numerical work to investigate relationships. They construct the coordinate plane, plot points, and draw lines. For points on a given line, students discover a common relationship between the x- and y-coordinates, which foreshadows the proportional reasoning of Grade 6, and in later grades, the slope of a line.



Grade 5 Year-at-a-Glance

Module 1	Module 2	Module 3	Module 4	Module 5	Module 6
Place Value and Decimals	Multi-Digit Whole Number and Decimal Operations	Addition and Subtraction of Fractions	Multiplication and Division of Fractions	Addition and Multiplication with Volume and Area	Problem Solving with the Coordinate Plane and Data
19 days	37 days	18 days	30 days	23 days	38 days
5.2A	5.2A	5.3A	5.3A	5.3I	5.2B
5.2B	5.3A	5.3H	5.3E	5.4G	5.3D
5.2C	5.3B	5.3K	5.3I	5.4H	5.3E
5.3A	5.3C		5.3J	5.5A	5.3F
5.3D	5.3D		5.3K	5.6A	5.3G
5.3E	5.3E		5.3L	5.6B	5.3H
5.3F	5.3F		5.4E		5.3I
5.3G	5.3G		5.4F		5.3J
5.3K	5.4A		5.7A		5.3K
5.7A	5.4B		5.9A		5.3L
	5.4E		5.9C		5.4C
	5.4F		5.10A		5.4D
	5.7A		5.10B		5.4E
			5.10C		5.4F
			5.10D		5.4G
			5.10E		5.4H
			5.10F		5.5A
					5.7A
					5.8A
					5.8B
					5.8C
					5.9A
					5.9B
					5.9C

Boldface = Focus Standard





Grade 5 Scope and Sequence

Bluebonnet Learning K–5 Math Instructional Materials: Grade 5 Scope and Sequence			
Module	Topics and Instructional Days	Knowledge and Skills	Standards (Bold = focus standard)
Module 1: Place Value and Decimals	A: Multiplicative Patterns on the Place Value Chart	Students develop place value understanding of decimals to the thousandths place and apply that understanding to round, compare, and order decimals and perform decimal operations. Students will: - Develop knowledge of the thousandths place by using the <i>divide by ten</i> pattern on the place value chart. - Convert metric units from the base unit meters, grams and liters through millimeters, milligrams and milliliters. - Read decimals to the thousandths place and represent them in standard form, unit form, word form, and expanded notation. - Compare decimals using greater than (>), less than (<), and equal to (=) and order decimals from greatest to least and least to greatest. - Round decimals through the thousandths place using the vertical number line. - Add, subtract, multiply and divide decimals.	TEKS MIPS
	B: Decimals and Place Value Patterns		5.1A
	C: Place Value and Rounding Decimals		5.1B
	D: Adding and Subtracting Decimals		5.1E
			5.1F
			5.1G
	Mid-Module Assessment Task		TEKS
	E: Multiplying Decimals		5.2A
	F: Dividing Decimals		5.2B
	End-of-Module Assessment Task		5.2C
			5.3A
	Assessments: 2		5.3D
	Lessons days: 15		5.3E
	Assessment days: 4		5.3F
	Total instructional days: 19		5.3G
			5.3K
			5.7A
			ELPS
			1.A
			1.B
			1.E
			1.F
			2.C
			2.D
			2.E
			3.C
			3.D
			3.E
			3.F
			3.H
			4.D
			4.G
			5.F
			5.G

Grade 5 Scope and Sequence (Continued)

Module	Topics and Instructional Days	Knowledge and Skills	Standards (Bold = focus standard)
Module 2: Multi-Digit Whole Number and Decimal Operations	A: Prime and Composite Numbers B: Mental Strategies for Multi-Digit Whole Number Multiplication C: The Standard Algorithm for Multi-Digit Whole Number Multiplication D: Decimal Multi-Digit Multiplication E: Measurement Word Problems with Whole Number and Decimal Multiplication Mid-Module Assessment Task F: Mental Strategies for Multi-Digit Whole Number Division G: Partial Quotients and Multi-Digit Whole Number Division H: Partial Quotients and Multi-Digit Decimal Division I: Measurement Word Problems with Multi-Digit Division End-of-Module Assessment Task Assessments: 2 Lessons days: 33 Assessment days: 4 Total instructional days: 37	Students apply the patterns of the base-ten system to mental strategies and evaluate using the multiplication and division algorithms. Students will: - Identify factors that make up a number less than 100, and identify multiples, prime numbers, and composite numbers. - Estimate multi-digit whole number and decimal products by rounding the factors to decide whether the product is reasonable. - Multiply multi-digit whole numbers and decimal numbers using place value understanding, a visual model, and the standard algorithm. - Divide whole numbers with up to four-digit dividends and two-digit divisors and interpret the remainders. - Divide decimal numbers with up to four-digit dividends and two-digit divisors and reason about the placement of the decimal point. - Use a strip diagram to represent a division word problem with an unknown group size or an unknown number of groups.	<u>TEKS</u> <u>MPS</u> 5.1A 5.1B 5.1D 5.1F <u>TEKS</u> 5.3A 5.3B 5.3C 5.3D 5.3E 5.3F 5.3G 5.4A 5.4B 5.4E 5.4F 5.7A 5.2A <u>ELPS</u> 1.A 1.E 2.C 2.E 3.C 3.D 3.E 3.F 3.G 3.H 4.G 5.G



Module	Topics and Instructional Days	Knowledge and Skills	Standards (Bold = focus standard)
Module 3: Addition and Subtraction of Fractions	A: Making Like Units Pictorially Mid-Module Assessment Task B: Making Like Units Numerically C: Further Applications End-of-Module Assessment Task Assessments: 2 Lessons days: 14 Assessment days: 4 Total instructional days: 18	Students extend earlier work with fraction equivalence and decimals to develop student understanding of addition and subtraction of fractions. Students will: - Add and subtract fractions with unlike denominators by making like units through a progression of material from concrete to representational to abstract. - Use benchmark fractions to assess reasonableness of addition and subtraction equations. - Solve multi-step word problems and assess the reasonableness of the answers.	<u>TEKS MIPS</u> 5.1A 5.1B 5.1C 5.1G <u>TEKS</u> 5.3A 5.3H 5.3K <u>ELPS</u> 1.C 1.E 1.H 2.E 2.I 3.C 3.E 3.F 3.G 3.H 4.A 4.B 4.C 4.G 4.H 4.K 5.G



Grade 5 Scope and Sequence (Continued)

Module	Topics and Instructional Days	Knowledge and Skills	Standards (Bold = focus standard)
Module 4: Multiplication and Division of Fractions	A: Repeated Addition of Fractions as Multiplication B: Multiplication of a Whole Number by a Fraction C: Fraction Expressions and Word Problems Mid-Module Assessment Task D: Division of Fractions E: Applying Fraction and Decimal Multiplication to Personal Financial Literacy F: Interpretation of Numerical Expressions	Students understand how to multiply whole numbers by fractions and how to begin dividing fractions. These operations are applied to create and solve word problems and interpret and evaluate numerical expressions. Multiplication involving a fraction is used when interpreting dot plots, converting measurements, and understanding personal financial literacy. Students will: • Multiply a whole number by a fraction or by a mixed number using strip diagrams, the associative property, and the distributive property. • Solve and create fraction word problems involving addition, subtraction, and multiplication. • Convert mixed unit measurements for customary and metric units. • Divide a whole number by a unit fraction and a unit fraction by a whole number. • Apply fraction and decimal multiplication to personal financial literacy to understand a simple budget, gross income, net income, income tax, payroll tax, sales tax, and property tax. • Interpret, compare, and evaluate numerical expressions.	<u>TEKS MPS</u> 5.1C 5.1D 5.1F <u>TEKS</u> 5.3I 5.3J 5.3K 5.3L 5.4E 5.4F 5.7A 5.9A 5.9C 5.10A 5.10B 5.10C 5.10D 5.10E 5.10F 5.3A 5.3E <u>ELPS</u> 1.C 1.E 1.H 2.B 2.C 2.E 2.G 2.I 3.B 3.C 3.D 3.E 3.G 3.H 4.B 4.E 4.F 4.G 4.J 4.K 5.C 5.G
	End-of-Module Assessment Task Assessments: 2 Lessons days: 26 Assessment days: 4 Total instructional days: 30		



Module	Topics and Instructional Days	Knowledge and Skills	Standards (Bold = focus standard)
Module 5: Addition and Multiplication with Volume and Area	A: Concepts of Volume B: Volume and the Operations of Multiplication and Addition Mid-Module Assessment Task C: Area of Rectangular Figures with Fractional Side Lengths D: Drawing, Analysis, and Classification of Two-Dimensional Shapes End-of-Module Assessment Task Assessments: 2 Lessons days: 19 Assessment days: 4 Total instructional days: 23	Students explore various two- and three-dimensional figures while understanding concepts of volume and area. Students will: - Find the volume of a solid by building and counting unit cubes, packing with unit cubes, and composing and decomposing rectangular prisms using layers. - Find the volume of rectangular prisms using the following volume formulas. $V = l \times w \times h$ $V = Bh$ - Find the total volume of solid figures composed of two non-overlapping rectangular prisms. - Find the area of rectangles with whole-by-mixed and whole-by-fractional number side lengths by tiling, drawing, relating to the distributive property, and using the area model. - Classify triangles by side lengths (equilateral, isosceles, scalene) and by angle measurements (acute, right, obtuse). - Draw and classify quadrilaterals such as trapezoid, parallelogram, rhombus, rectangle, and square. - Classify two-dimensional figures in a hierarchy based on their properties.	TEKS <u>MIPS</u> 5.1A 5.1B 5.1D 5.1E 5.1F 5.1G TEKS 5.3I 5.4G 5.4H 5.5A 5.6A 5.6B <u>ELPS</u> 1.C 1.E 1.F 1.H 2.C 2.D 2.H 2.I 3.C 3.D 3.E 3.F 3.G 3.H 3.J 4.B 4.G 4.I 5.A 5.E 5.G



Grade 5 Scope and Sequence (Continued)

Module	Topics and Instructional Days	Knowledge and Skills	Standards (Bold = focus standard)
Module 6: Problem Solving with the Coordinate Plane and Data	A: Coordinate Systems B: Patterns in the Coordinate Plane and Graphing Number Patterns from Rules Mid-Module Assessment Task C: Data Representation and Analysis End-of-Module Assessment Task D: Multi-Step Word Problems E: The Year in Review: A Reflection Assessments: 2 Lessons days: 34 Assessment days: 4 Total instructional days: 38	Students develop a coordinate system for the first quadrant of the coordinate plane and use it to solve problems. This learning extended to collect, organize, display, and interpret data. Students will: - Construct a coordinate system in the first quadrant of the coordinate plane, name points using coordinate pairs, and use the coordinate pairs to plot points. - Use points to draw lines in the coordinate plane and describe patterns within the coordinate pairs. - Generate number patterns from a given addition rule and a multiplication rule and compare the lines generated by each. - Collect and represent data using dot plots, stem-and-leaf plots, scatterplots, bar graphs, and double bar graphs. - Solve multi-step problems to apply concepts and skills mastered throughout Grade 5.	<u>TEKS</u> <u>MPS</u> 5.1A 5.1B 5.1C 5.1D 5.1E 5.1F 5.1G <u>TEKS</u> 5.3D 5.3E 5.3F 5.3G 5.3I 5.3K 5.3L 5.4C 5.4D 5.4H 5.8A 5.8B 5.8C 5.9A 5.9B 5.9C 5.2B 5.3H 5.3J



Module	Topics and Instructional Days	Knowledge and Skills	Standards (Bold = focus standard)
			5.4E 5.4F 5.4G 5.5A 5.7A ELPS 1.A 1.C 1.D 1.E 1.G 1.H 2.A 2.C 2.E 2.F 2.I 3.A 3.C 3.E 3.F 3.G 3.H 3.I 3.J 4.I 5.B 5.G
	Total instructional days: 165		



Grade 5 Standards by Lesson

Grade 5 Mathematical Process Standards by Lesson per Module

Standard	M1 Lessons	M2 Lessons	M3 Lessons	M4 Lessons	M5 Lessons	M6 Lessons
5.1A		3–6, 9–12, 14, 16, 23, 27–29, 31–33	2, 5, 8, 12–14	3, 9, 10, 14, 15, 17, 19, 20, 22, 25	7, 9, 11, 12	13–16, 18–20, 22, 25, 32, 33
5.1B		9, 10, 32, 33	5, 12, 14	14, 15, 19	7, 11, 12	18–20, 22, 33
5.1C	12	3, 5	1–4, 10, 13, 14	2, 3, 5, 9, 14, 15	14	
5.1D		5–9, 12, 14, 17, 18		2, 3, 6, 7, 12, 14, 15, 18, 20, 21	1, 3	
5.1E	6–9, 12, 13		1	13, 15, 25	5, 9, 12–17	3, 4, 6–8, 13–15, 17, 21, 23, 28, 29, 30, 33, 34
5.1F	1, 3–5, 10–15	1–4, 7, 8, 10, 12, 13, 15–30	1, 3, 7, 9, 10, 12	1–4, 8–12, 15–19, 22–24, 26	2, 4, 6, 8, 13, 14, 16–19	2, 4, 5, 7–11, 13–17, 24–26, 31
5.1G	2	30, 31	2, 4–6, 8, 9, 11, 12	5, 9, 10, 11, 13, 18, 20–22	6, 10, 18, 19	1, 5, 6, 11, 12, 21, 23–25, 27



Grade 5 TEKS Standards by Lesson per Module

Standard	M1 Lessons	M2 Lessons	M3 Lessons	M4 Lessons	M5 Lessons	M6 Lessons
5.2A	1–5, 9, 10, 13	20–22, 28–31				
5.2B	5, 6, 12					
5.2C	6–8, 13			22		
5.3A	10, 11	3–18, 20–22, 31	11	18–21		
5.3B		3–11, 17, 18				
5.3C		20–27, 32, 33				
5.3D	10, 11	12–19				19–23
5.3E	10–12	12–19		22–25		19–23
5.3F	12–15	28–33				19–23
5.3G	12–15	28–33				19–23
5.3H			1–14			19–23
5.3I				1–17	8–12	19–23
5.3J				18–21		19–23
5.3K	8–12		1–14	1–17, 22–25		19–23
5.3L				18–21		19–23
5.4A		1, 2				
5.4B		5–16, 23–33			22	19
5.4C						7–13
5.4D						7–13
5.4E		3, 5–16		1–7, 12–17, 26		7–13
5.4F		5–16		1–7, 12–17, 26		
5.4G					1–7	
5.4H					4–12	19–23
5.5A					13–19	
5.6A					1–7	
5.6B					1–7	
5.7A	3	17–19		8–17		
5.8A						1–13
5.8B						1–13
5.8C						7–13, 16
5.9A				1–7		14–18
5.9B						14–18
5.9C				1–7		14–18
5.10A				22–25		14–18
5.10B				22–25		14–18
5.10C				22–25		14–18
5.10D				22–25		
5.10E				22–25		
5.10F				22–25		



Grade 5 English Language Proficiency Standards by Lesson per Module

Standard	M1 Lessons	M2 Lessons	M3 Lessons	M4 Lessons	M5 Lessons	M6 Lessons
1.A	1–3	1, 2, 23–27				2, 5, 14–18, 24–34
1.B	1–3					
1.D						7–13
1.E	1–3	1, 2	1–5	1–7, 18–21	4–7	4, 7–18, 24–34
1.F	1–3				1–3	
2.C	1–7, 10, 11	1, 2, 3–11, 17–19		22–25	1–19	14–18
2.D	1–7				13–19	
2.E	1–15	1, 2, 5–11, 17–19, 23–33	1–10	1–26	1–19	1–23
2.F						19–23
3.B				22–25	12–14, 17	
3.C	12–15	3, 4	11–14	8–11	13–19	19–34
3.D	1–5, 10–15	3, 4		12–17	13–19	
3.E	4–15	1, 2, 5–11, 17–27, 32, 33	1–14	1–26	4–19	1–34
3.F	6–9	12–16	1–10		4–12	19–23
3.G		14, 19–27, 32, 33	1–10	1–7, 22–25	8–12	7–34
3.H	12–15	5–11, 19–26, 33	11–14	1–21	13–19	1–6, 14–18, 27, 32, 34
3.J					1–3, 8–12	19–34
4.C			6–10			
4.D	10, 11					
4.E				1–7		
4.F				12–17	18, 19	
4.G	10–15	1, 2, 5–11	1–10	1–11, 18–21	13–19	
5.B					11–14	7–13
5.F	8–11					
5.G	8, 9	1–33	1–14	1–26	1–7, 13–19	1–23, 25–34



Grade 5 Development of Fluency

Overview

Fluency activities are designed to promote automaticity and flexibility by engaging students in ways that build fluency from conceptual understanding. The fluency activities in each lesson provide students with strategic learning opportunities to develop their proficiency with specific TEKS. While all TEKS are included in the instructional materials, some TEKS may not be practiced in a fluency activity.

Fluency Year-at-a-Glance

For specific TEKS descriptions and student expectations, refer to the relevant Fluency Close-Up tables.

GRADE 5	Module						
TEKS	1	2	3	4	5	6	ADSY
5.2A	•	•			•	•	•
5.2B	•						
5.2C	•			•		•	
5.3A		•				•	•
5.3B		•				•	•
5.3C		•				•	•
5.3D		•		•			
5.3E	•	•		•	•	•	•
5.3F		•			•		•
5.3G	•	•		•	•	•	•
5.3H			•	•		•	•
5.3I				•	•	•	
5.3J				•		•	
5.3K	•		•	•		•	•
5.3L				•	•		
5.4A		•			•		
5.4B		•					•
5.4C						•	
5.4D							•
5.4E							•

GRADE 5	Module						
TEKS	1	2	3	4	5	6	ADSY
5.4F		•		•		•	•
5.4G							
5.4H				•	•	•	
5.5A					•		
5.6A					•		
5.6B					•		•
5.7A	•	•		•		•	•
5.8A						•	
5.8B						•	
5.8C							
5.9A							
5.9B							
5.9C							
5.10A							
5.10B							
5.10C							
5.10D							
5.10E							
5.10F							



Fluency Close-Up

Numbers and Operations

The student applies mathematical process standards to represent, compare, and order positive rational numbers and understand relationships as related to place value. The student is expected to:

TEKS	Module	Lessons
5.2A	1	3–7, 9–10, 13
	2	3, 5, 7–9, 11–12, 14, 17, 27–30
	5	16–19
	6	6–8, 15
	ADSY	8, 11–12, 16, 18, 23, 25
5.2B	1	6, 12
5.2C	1	5–8, 13
	4	22–25
	6	9–11

The student applies mathematical process standards to develop and use strategies and methods for positive rational number computations in order to solve problems with efficiency and accuracy. The student is expected to:

TEKS	Module	Lessons
5.3A	1	5–7, 11, 21–27, 30
	6	32
	ADSY	14–15, 17
5.3B	2	4, 7–11
	6	4–5, 14–15, 20, 23, 27, 29–30, 32, 34
	ADSY	9
5.3C	2	19, 21–28
	6	31–32, 34
	ADSY	14–16, 18
5.3D	2	17
	4	23–25



TEKS	Module	Lessons
5.3E	1	11–12
	2	13, 16
	4	16–17, 22, 24
	5	8
	6	16, 18, 26–27, 29
	ADSY	11
5.3F	2	26–33
	5	17
	ADSY	17
5.3G	1	13–15
	2	27–33
	4	24
	5	17
	6	16, 18
	ADSY	17
5.3H	3	1, 10–12, 14
	4	2–4, 7
	6	13, 19–20, 22–23, 25
	ADSY	2
5.3I	4	4–15, 18–19, 22
	5	1–4, 6–11, 14
	6	26–27
5.3J	4	19–20, 22, 26
	6	31



TEKS	Module	Lessons
5.3K	1	9–12
	3	1–2, 4, 10–12, 14
	4	2–3, 7, 23, 25
	6	9–12, 19–20, 22–23
	ADSY	21
5.3L	4	19–21, 26
	5	12, 15–16

Algebraic Reasoning

The student applies mathematical process standards to develop concepts of expressions and equations.
The student is expected to:

TEKS	Module	Lessons
5.4A	2	2, 5, 18
	5	19
5.4B	2	8–11
	ADSY	9, 20
5.4C	6	12
5.4D	ADSY	22
5.4E	ADSY	12
5.4F	2	6
	4	14–15, 26
	6	22–23, 26
	ADSY	4–6
5.4G	N/A	N/A
5.4H	4	19
	5	18
	6	33–34



Geometry and Measurement

The student applies mathematical process standards to classify two-dimensional figures by attributes and properties. The student is expected to:

TEKS	Module	Lessons
5.5A	5	14

The student applies mathematical process standards to understand, recognize, and quantify volume. The student is expected to:

TEKS	Module	Lessons
5.6A	5	2–5, 11
5.6B	5	6–7, 9–11, 14, 18
	ADSY	13

The student applies mathematical process standards to select appropriate units, strategies, and tools to solve problems involving measurement. The student is expected to:

TEKS	Module	Lessons
5.7A	1	4
	2	14, 17–19, 31–33
	4	12, 17–18
	6	30
	ADSY	19, 23

The student applies mathematical process standards to identify locations on a coordinate plane. The student is expected to:

TEKS	Module	Lessons
5.8A	6	3–4
5.8B	6	3–4, 7–9, 16–17
5.8C	N/A	N/A



Data Analysis

The student applies mathematical process standards to solve problems by collecting, organizing, displaying, and interpreting data. The student is expected to:

TEKS	Module	Lessons
5.9A	N/A	N/A
5.9B	N/A	N/A
5.9C	N/A	N/A

Personal Financial Literacy

The student applies mathematical process standards to manage one's financial resources effectively for lifetime financial security. The student is expected to:

TEKS	Module	Lessons
5.10A	N/A	N/A
5.10B	N/A	N/A
5.10C	N/A	N/A
5.10D	N/A	N/A
5.10E	N/A	N/A
5.10F	N/A	N/A

Manipulatives and Supplies Lists

GRADE 5 MANIPULATIVES LIST		
Qty.	Item(s)	Description
7	Base-ten blocks	<i>sets (1 per group of 4 students, 1 per teacher)</i>
7	Centimeter cubes	<i>sets (1 per group of 4 students, 1 per teacher)</i>
1	Decimal place value cards	
6	Decimal place value disks	<i>sets (1 per group of 4 students)</i>
12	Graduated cylinders	100 mL with 1-mL intervals (1 per student pair)
1,200	Inch tiles	<i>(100 per student pair)</i>
1	Patty paper	<i>box of 5.5 in × 5.5 in sheets (40 sheets per student)</i>
24	Protractors	<i>4 in, 180-degree</i>
24	Protractors	<i>6 in, 180-degree</i>
24	Rulers	inch and metric
24	Set squares	<i>or right angle template described in Grade 4, Module 4 Lesson 2</i>
12	Tape measures	<i>1 per student pair</i>
600	Two-color counters	<i>(25 counters per student)</i>
1	Whole number place value cards	
6	Whole number place value disks	<i>Set 2, up to millions place</i>



GRADE 5 SUPPLIES LIST

Qty.	Item(s)	Description
—	Calculator	<i>basic, 4-function (1 per student or pair)</i>
1	Chart paper	<i>tablet</i>
48	Colored pencils	<i>(2 different colors per student)</i>
8	Containers	<i>water-tight, hollow rectangular prisms of various sizes to pack in centimeter cubes</i>
24	Crayons	<i>Sets of crayons</i>
1	Document camera	
24	Dry erase markers	
24	Envelopes	<i>letter size</i>
24	Flowers	
—	Forms of payment	<i>Real-world examples of various forms of payment</i>
50	Grid paper	<i>Sheets of grid paper, centimeter; optional template in Module 5 Lesson 2</i>
72	Markers	<i>(3 different colored markers per student)</i>
1	Meter stick	
300	Paper	<i>Sheets of blank paper</i>
48	Paper	<i>Sheets of lined paper</i>
—	Paper rectangle	<i>labeled A, 16.5 in × 11 in (1 per group, 1 per teacher)</i>
—	Paper rectangle	<i>labeled B, 16.5 in × 13.75 in (1 per group)</i>
—	Paper rectangle	<i>labeled C, 8.25 in × 27.5 in (1 per group)</i>
—	Paper rectangle	<i>labeled D, 11 in × 9.625 in (1 per group)</i>
—	Paper rectangle	<i>labeled E, 4.125 in × 27.5 in (1 per group)</i>
240	Paper squares	<i>3 in × 3 in</i>
100	Paper squares	<i>4.5 in × 4.5 in</i>
100	Paper strips	<i>0.25 in × 1 in</i>
275	Paper strips	<i>4 in × 2 in</i>



GRADE 5 SUPPLIES LIST

Qty.	Item(s)	Description
24	Paper strips	8.5 in × 1 in
72	Paper strips	cardstock, 27 cm × 21 cm
24	Personal white boards	Build from 1 white cardstock, 1 red cardstock, and 1 sheet protector per student
8	Pitchers	small
24	Pocket folders	
24	Scissors	
144	Straws	
48	Sticky notes	
48	Tag board strips	1 in × 4.5 in
4	Tape	Rolls of tape, transparent
1	Timer	
1	Yarn or string	Ball of yarn or string

ADSY ITEMS

Qty.	Item(s)	Description
1	Bags	Box of bags, plastic, gallon- and quart-size, zip-top
24	Base-ten blocks	(1 set per student)
24	Fraction bar manipulatives	wholes, halves, fourths, eighths (1 set per student)
1	Liter container	
1	Meter stick	



Grade 5 Module 1

Tips for Families

Key Concepts Overview

Focus TEKS: **5.2A, 5.2B, 5.2C, 5.3A, 5.3D, 5.3E, 5.3F, 5.3G, 5.3K, 5.7A**

The focus of Module 1 is developing place value understanding of decimals to the thousandths place and applying that understanding to round, compare, and order decimals and perform decimal operations. Your student will:

- ☐ Develop knowledge of the **thousandths** place by using the *divide by ten* pattern on the place value chart.
- ☐ Convert metric units from the base unit meters, grams and liters through **millimeters, milligrams and milliliters**.
- ☐ Read decimals to the **thousandths** place and represent them in standard form, unit form, word form, and expanded notation.
- ☐ Compare decimals using **greater than** ($>$), **less than** ($<$), and **equal to** ($=$) and order decimals from greatest to least and least to greatest.
- ☐ Round decimals through the **thousandths** place using the vertical number line.
- ☐ Add, subtract, multiply and divide decimals.

You can use the checklist above to help monitor your student's progress of the knowledge and skills in this module. Daily sample problems with solutions and thought bubbles are found in the Homework Helper pages of the Succeed Student Edition to help you support your student as they work at home.

Additional Ways to Help at Home

- Practice metric conversions with the student in the kitchen. For example, measure amounts of water, juice, or milk in liters and milliliters ($1\text{ L} = 1,000\text{ mL}$). Measure the weights of rice, beans, oatmeal, or sugar in kilograms and grams ($1\text{ kg} = 1,000\text{ g}$). Measure the lengths of the kitchen counter, refrigerator, or walls in meters, centimeters, and millimeters ($1\text{ m} = 100\text{ cm}$ and $1\text{ m} = 1,000\text{ mm}$).
- Write a challenging number with three digits to the right of the decimal, such as 1,769,432.158. Ask the student to say the number in unit form. "Say the number using place value units starting from the millions to the thousandths place." (Answer: 1 million, 7 hundred thousands, 6 ten thousands, 9 thousands, 4 hundreds, 3 tens, 2 ones, 1 tenth, 5 hundredths, 8 thousandths).
- Talk to the student about times that you use rounding, such as estimating how many grocery items you can buy with a \$50 bill or how many errands you can get done in one hour. Explain your thinking with him. Have a discussion about times when it makes sense to use rounding and times when it is important to find an exact answer.



- Play the “Addition and Subtraction” card game with the student. Use playing cards and take out the jacks, queens, kings, and jokers. Put the stack of remaining cards face down.
 1. You and the student will each flip a certain number of cards to build a decimal number.
 2. Ask her to practice adding and/or subtracting with those two numbers. When writing a subtraction sentence, the larger number should be written first.
 3. Flip two cards to practice adding and subtracting tenths.
 4. Flip three cards to practice adding and subtracting hundredths.
 5. Flip four cards to practice adding and subtracting thousandths.

For example, you flip an 8 and a 5; they represent 8.5. The student flips a 6 and a 2; they represent 6.2. Then add and subtract the numbers; $8.5 + 6.2 = 14.7$ and $8.5 - 6.2 = 2.3$.

If playing cards are not available, the game can also be played by writing the digits 1–9 on small pieces of paper or index cards.

Terms

Greater than: >

Less than: <

Equal to: =

Expanded notation: a number expressed as the sum of the value of each digit when each digit is multiplied by its place value

$$(1 \times 10) + (3 \times 1) + (8 \times \frac{1}{10}) + (6 \times \frac{1}{100})$$

Millimeter (*Milímetro*): a metric unit of length equal to one-thousandth of a meter.

ones	•	tenths	hundredths	thousandths
1 meter	•	$\frac{1}{10}$ meter (decimeter)	$\frac{1}{100}$ meter (centimeter)	$\frac{1}{1000}$ meter (millimeter)
0	•	0	0	1

Place value (*Valor de posición*): the numerical value that a digit has by virtue of its position in a number

$$(5 \times 10) + (4 \times 1) + (3 \times 0.1) + (3 \times 0.01) + (2 \times 0.001) = 54.332$$

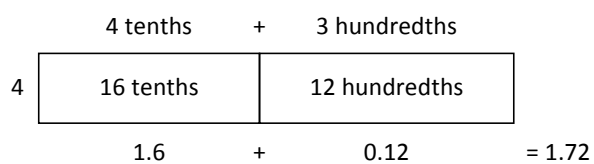


Thousandths: thousandths are a place value unit. 1 can be decomposed into 1,000 thousandths.

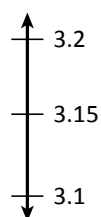
ones	•	tenths	hundredths	thousandths
1	.	0	0	0

Models

Area Model



Vertical Number Line



Place Value Chart

1,000,000	100,000	10,000	1,000	100	10	1	•	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$
Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	•	Tenths	Hundredths	Thousandths
							•			
							•			
							•			



Grado 5 Módulo 1

Consejos para las familias

Descripción general de los conceptos clave

TEKS de enfoque: **5.2A, 5.2B, 5.2C, 5.3A, 5.3D, 5.3E, 5.3F, 5.3G, 5.3K, 5.7A**

El enfoque del Módulo 1 es desarrollar la comprensión del valor de posición de decimales hasta los milésimos y aplicar ese entendimiento para redondear, comparar y ordenar decimales y realizar operaciones decimales. Se espera que su estudiante:

- ☐ Desarrolle el conocimiento de la posición de los milésimos usando el patrón de dividir entre diez en la tabla de valor de posición.
- ☐ Convierta las unidades métricas de la unidad base metros, gramos y litros a milímetros, miligramos y mililitros.
- ☐ Lea decimales hasta los **milésimos** y los represente en forma estandarizada, forma unitaria, forma escrita y notación desarrollada.
- ☐ Compare decimales usando **mayor que** ($>$), **menor que** ($<$) e **igual a** ($=$) y ordene los decimales de mayor a menor y de menor a mayor.
- ☐ Redondee los decimales hasta los **milésimos** usando la recta numérica vertical.
- ☐ Sume, reste, multiplique y divida decimales.

Puede usar la lista de verificación anterior para ayudar a monitorear el progreso de su estudiante con los conocimientos y destrezas de este módulo. Ejemplos diarios de problemas con soluciones y burbujas de pensamiento se encuentran en las páginas de Ayuda para la tarea en los materiales del estudiante de Triunfar para ayudarlo a apoyar a su estudiante mientras trabaja en casa.

Formas adicionales de ayudar en casa

- Practique las conversiones métricas con su estudiante en la cocina. Por ejemplo, mida las cantidades de agua, jugo o leche en litros y mililitros ($1\text{ L} = 1,000\text{ mL}$). Mida el peso del arroz, los frijoles, la avena o el azúcar en kilogramos y gramos ($1\text{ kg} = 1,000\text{ g}$). Mida las longitudes de la encimera de la cocina, el refrigerador o las paredes en metros, centímetros y milímetros ($1\text{ m} = 100\text{ cm}$ y $1\text{ m} = 1,000\text{ mm}$).
- Escriba un número difícil con tres dígitos a la derecha del decimal, como 1,769,432.158. Pida a su estudiante que diga el número en forma unitaria. “Digamos el número usando unidades de valor de posición desde los millones hasta los milésimos”. (Respuesta: 1 millón, 7 centenas de millar, 6 decenas de millar, 9 unidades de millar, 4 centenas, 3 decenas, 2 unidades, 1 décimo, 5 centésimos, 8 milésimos).



- Hable con su estudiante sobre las veces que usa el redondeo, como calcular cuántos artículos de comestibles puede comprar con un billete de \$50 o cuántos mandados puede hacer en una hora. Comparta su pensamiento con el estudiante. Hablen sobre las ocasiones en las que tiene sentido usar el redondeo y las ocasiones en las que es importante encontrar una respuesta exacta.
- Juegue el juego de cartas “Suma y resta” con su estudiante. Use las cartas y saque las jotas, reinas, reyes y comodines. Ponga el montón de cartas restantes boca abajo.
 1. Usted y su estudiante voltearán cada uno un cierto número de cartas para formar un número decimal.
 2. Pídale que practique sumar y/o restar con esos dos números. Al escribir una oración de resta, el número más grande debe escribirse primero.
 3. Voltee dos cartas para practicar la suma y la resta de décimos.
 4. Voltee tres cartas para practicar la suma y resta de centésimos.
 5. Voltee cuatro cartas para practicar la suma y la resta de milésimos.

Por ejemplo, voltea un 8 y un 5; representan el 8.5. El estudiante saca un 6 y un 2; representan 6.2. Luego suma y resta los números; $8.5 + 6.2 = 14.7$ y $8.5 - 6.2 = 2.3$.

Si no hay cartas disponibles, el juego también se puede jugar escribiendo los dígitos del 1 al 9 en pequeños pedazos de papel o tarjetas de índice.

Términos

Igual a: =

Mayor que: >

Menor que: <

Milésimos: los milésimos son una unidad de valor de posición. 1 se puede descomponer en 1,000 milésimos.

Unidades	•	Décimos	Centésimos	Milésimos
1	•	0	0	0

Milímetro (Millimeter): unidad métrica de longitud igual a una milésima parte de un metro.

Unidades	•	Décimos	Centésimos	Milésimos
1 metro	•	$\frac{1}{10}$ metro (décímetros)	$\frac{1}{100}$ metro (centímetros)	$\frac{1}{1000}$ metro (milímetros)
0	•	0	0	1



Notación desarrollada: un número expresado como la suma del valor de cada dígito cuando cada dígito se multiplica por su valor de posición

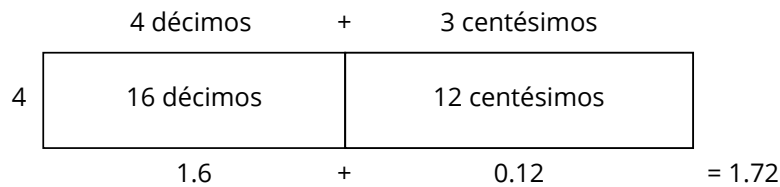
$$(1 \times 10) + (3 \times 1) + (8 \times \frac{1}{10}) + (6 \times \frac{1}{100})$$

Valor de posición (Place value): el valor numérico que tiene un dígito en virtud de su posición en un número.

$$(5 \times 10) + (4 \times 1) + (3 \times 0.1) + (3 \times 0.01) + (2 \times 0.001) = 54.332$$

Modelos

Modelo de área



Recta numérica vertical

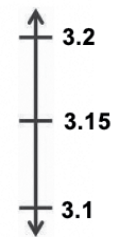


Tabla de valor de posición

1,000,000	100,000	10,000	1,000	100	10	1	.	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$
mil millones	centenas de millar	decenas de millar	unidades de millar	centenas	decenas	unidades	.	décimos	centésimos	milésimos
							.			
							.			
							.			



Grade 5 Module 2

Tips for Families

Key Concepts Overview

Focus TEKS: **5.3A, 5.3B, 5.3C, 5.3D, 5.3E, 5.3F, 5.3G, 5.4A, 5.4B, 5.4E, 5.4F, 5.7A**

The focus of Module 2 is applying the patterns of the base-ten system to mental strategies and evaluating using the multiplication and division algorithms. Your student will:

- ☐ Identify factors that make up a number less than 100, and identify multiples, **prime numbers**, and **composite numbers**.
- ☐ Estimate multi-digit whole number and decimal products by rounding the factors to decide whether the product is reasonable.
- ☐ Multiply multi-digit whole numbers and decimal numbers using place value understanding, a visual model, and the standard algorithm.
- ☐ Divide whole numbers with up to four-digit dividends and two-digit divisors and interpret the remainders.
- ☐ Divide decimal numbers with up to four-digit dividends and two-digit divisors and reason about the placement of the decimal point.
- ☐ Use a strip diagram to represent a division word problem with an unknown group size or an unknown number of groups.

You can use the checklist above to help monitor your student's progress of the knowledge and skills in this module. Daily sample problems with solutions and thought bubbles are found in the Homework Helper pages of the Succeed Student Edition to help you support your student as they work at home.

Additional Ways to Help at Home

- Review rounding whole numbers with your student, such as the following examples:
What is 19 rounded to the nearest ten? (20)
What is 727 rounded to the nearest hundred? (700)
What is 3,815 rounded to the nearest thousand? (4,000)
- Help your student practice multiplication facts. Have him bounce a basketball as he says the multiples of different numbers. For example, he can practice saying the multiples of 8 with each bounce: 0, 8, 16, 24, 32, 40, 48, 56, 64, 72, 80. Then he can say them backward: 80, 72, 64, 56, 48, 40, 32, 24, 16, 8, 0.



- Play the “Divide the Card” number game with your student. Use playing cards, and take out the jacks, queens, kings, and jokers. Put the stack of remaining cards face down.
 1. Flip three or four cards from the top of the deck and place them face up on the table. The three- or four-digit number shown by these cards will represent the dividend.
 2. Your student flips two cards from the top of the deck and places them face up on the table. The two-digit number shown by these cards will represent the divisor.
 3. Write the division expression using the dividend and the divisor. Then ask your student to estimate the quotient.
 4. Your student then solves the division problem using the standard algorithm.

For example, you flip three cards with the numbers 3, 1, and 2; it represents 312. Your student flips two cards with the numbers 5 and 1; it represents 51. You write $312 \div 51$ and say, “Estimate how many times 51 can go into 312.” She says, “Six,” and then solves the division problem using the standard algorithm. (The answer is 6 with a remainder of 6.) If playing cards are not available, the game can also be played by writing the digits 1–9 on small pieces of paper or index cards.

Terms

Composite number (*Número compuesto*): a positive integer having three or more whole number factors

factor pairs for 28	
1	28
2	14
4	7

composite
more than 2 factors

Dividend (*Dividendo*): the number that is divided by another number

Divisor (*Divisor*): the number by which another number is divided

$$\begin{array}{ccc} & 5.4 \div 10 & \\ \uparrow & & \uparrow \\ \text{dividend} & & \text{divisor} \end{array}$$

Prime number (*Número primo*): a positive integer greater than 1 having whole number factors of only 1 and itself

Factor Pairs for 29	
1	29

Prime
only 2 factors
just 1 and itself (29)



Product (*Product*): the result of multiplying numbers together

$$527 \times 36 = 18,972$$

↑
product

Quotient (*Cociente*): the answer of dividing one quantity by another

$$1.8 \div 6 = 0.3$$

↑
quotient

Remainder: the number left over when one integer is divided by another

$$\begin{array}{r} 2 \\ 43 \overline{) 94} \\ \underline{-86} \\ 8 \end{array}$$

↑
remainder

Models

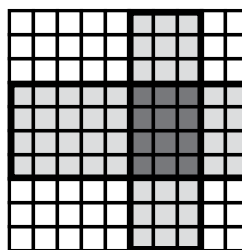
Area Model

$900 + 20 + 1$			
6	5,400	120	6
+	9,000	200	10

$$\begin{array}{r} 921 \\ \times 16 \\ \hline 5526 \\ + 9210 \\ \hline 14,736 \end{array}$$

$$921 \times 16 = 14,736$$

Hundredths Grid Area Model



$$0.6 \times 0.4 = 0.24$$



Grado 5 Módulo 2

Consejos para las familias

Descripción general de los conceptos clave

TEKS de enfoque: **5.3A, 5.3B, 5.3C, 5.3D, 5.3E, 5.3F, 5.3G, 5.4A, 5.4B, 5.4E, 5.4F, 5.7A**

El enfoque del Módulo 2 es aplicar los patrones del sistema de base diez a estrategias mentales y evaluar utilizando los algoritmos de multiplicación y división. Se espera que su estudiante:

- ☐ Identifique los factores que componen un número menor que 100 e identifique múltiplos, **números primos** y números compuestos.
- ☐ Estime productos decimales y de números enteros de varios dígitos redondeando los factores para decidir si el producto es razonable.
- ☐ Multiplique números enteros de varios dígitos y números decimales usando la comprensión del valor de posición, un modelo visual y el algoritmo normal.
- ☐ Divida números enteros con dividendos de hasta cuatro dígitos y divisores de dos dígitos e interprete los residuos.
- ☐ Divida los números decimales con dividendos de hasta cuatro dígitos y divisores de dos dígitos y razone la ubicación del punto decimal.
- ☐ Use un diagrama de tiras para representar un problema escrito de división con un tamaño de grupo desconocido o un número desconocido de grupos.

Puede usar la lista de verificación anterior para ayudar a monitorear el progreso de su estudiante con los conocimientos y destrezas de este módulo. Ejemplos diarios de problemas con soluciones y burbujas de pensamiento se encuentran en las páginas de Ayuda para la tarea en los materiales del estudiante de Triunfar para ayudarlo a apoyar a su estudiante mientras trabaja en casa.

Formas adicionales de ayudar en casa

- Repase el redondeo de números enteros con su estudiante, como los siguientes ejemplos:
¿Cuánto es 19 redondeado a la decena más cercana? (20)
¿Cuánto es 727 redondeado a la centena más cercana? (700)
¿Cuánto es 3,815 redondeado a la unidad de millar más cercana? (4,000)
- Ayude a su estudiante a practicar las operaciones de multiplicación. Pídale que haga rebotar una pelota de basquetbol mientras dice los múltiplos de diferentes números. Por ejemplo, puede practicar diciendo los múltiplos de 8 con cada rebote: 0, 8, 16, 24, 32, 40, 48, 56, 64, 72, 80. Luego puede decirlas al revés: 80, 72, 64, 56, 48, 40, 32, 24, 16, 8, 0.
- Juegue el juego de números “Divide la carta” con su estudiante. Use las cartas y saque las jotas, las reinas, los reyes y los comodines. Ponga el montón de cartas restantes boca abajo.
 1. Voltee tres o cuatro cartas de la parte de arriba del mazo y colóquelas boca arriba sobre la mesa. El número de tres o cuatro dígitos que muestran estas cartas representará el dividendo.



2. Su estudiante voltea dos cartas de la parte de arriba del mazo y las coloca boca arriba sobre la mesa. El número de dos dígitos que muestran estas tarjetas representará el divisor.
3. Escriba la expresión de división usando el dividendo y el divisor. Luego pídale a su estudiante que estime el cociente.
4. Después, su estudiante resuelve el problema de división usando el algoritmo normal.

Por ejemplo, voltea tres cartas con los números 3, 1 y 2; representa 312. Su estudiante voltea dos cartas con los números 5 y 1; representa 51. Escribe $312 \div 51$ y dice: "Calcula cuántas veces 51 puede entrar en 312". Su estudiante dice: "Seis", y luego resuelve el problema de división usando el algoritmo normal. (La respuesta es 6 con un residuo de 6). Si no hay cartas disponibles, el juego también se puede jugar escribiendo los dígitos del 1 al 9 en pequeños pedazos de papel o tarjetas de índice.

Términos

Cociente (*Quotient*): la respuesta de dividir una cantidad entre otra

$$1.8 \div 6 = 0.3$$

↑
cociente

Dividendo (*Dividend*): el número que se divide por otro número

Divisor (*Divisor*): el número por el cual se divide otro número

$$5.4 \div 10$$

↑ ↑
dividendo divisor

Número compuesto (*Composite number*): un entero positivo que tiene tres o más factores de números enteros

pares de factores para 28	
1	28
2	14
4	7

compuesto más
de 2 factores

Número primo (*Prime number*): un número entero positivo mayor que 1 que tiene factores de números enteros de solo 1 y él mismo

pares de factores para 29	
1	29

Primo
solo 2 factores
solo 1 y él mismo (29)



Producto (*Product*): el resultado de multiplicar números

$$527 \times 36 = 18,972$$

↑
producto

Residuo: el número que sobra cuando un número entero se divide entre otro

$$\begin{array}{r} 2 \\ 43 \overline{) 94} \\ \underline{- 86} \\ 8 \end{array}$$

↑
residuo

Modelos

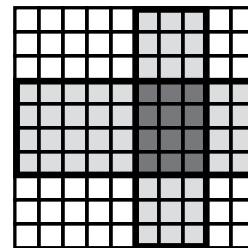
Modelo de área

$900 + 20 + 1$			
6	5,400	120	6
+	9,000	200	10

$$5,526 + 9,210 = 14,736$$

$$921 \times 16 = 14,736$$

Modelo de área de cuadrícula de centésimas



$$0.3 \times 0.4 = 0.12$$



Grade 5 Module 3

Tips for Families

Key Concepts Overview

Focus TEKS: **5.3A, 5.3H, 5.3K**

The focus of Module 3 is to extend from earlier work with fraction equivalence and decimals to develop student understanding of addition and subtraction of fractions. Your student will:

- Add and subtract fractions with **unlike denominators** by making like units through a progression of material from concrete to representational to abstract.
- Use **benchmark fractions** to assess reasonableness of addition and subtraction equations.
- Solve multi-step word problems and assess the reasonableness of the answers.

You can use the checklist above to help monitor your student's progress of the knowledge and skills in this module. Daily sample problems with solutions and thought bubbles are found in the Homework Helper pages of the Succeed Student Edition to help you support your student as they work at home.

Additional Ways to Help at Home

- Play the “Find the Smallest Multiple” dice game with your student.
 1. You and your student roll a die or use a random number generator on a phone or computer.
 2. Ask him, “What’s the smallest common multiple of these two numbers?”For example, you roll the number 6. Your student rolls the number 4. You ask, “What’s the smallest multiple of 6 and 4?” He says, “12.”
- Play the “Add or Subtract Fractions” card game with your student. Use playing cards and take out the jacks, queens, kings, aces, and jokers. Put the stack of remaining cards facedown.
 1. You and your student flip two cards.
 2. Both you and your student arrange each pair of cards as a fraction by using the smaller number as the numerator and the larger number as the denominator.
 3. Use these two fractions to write an addition or subtraction sentence and ask her to solve it. When writing a subtraction fraction sentence, the larger fraction should be written first.

For example, you flip two cards with the numbers 4 and 5. They represent the fraction $\frac{4}{5}$. Your student flips two cards with the numbers 3 and 2. They represent the fraction $\frac{2}{3}$. You write $\frac{4}{5} + \frac{2}{3}$ or $\frac{4}{5} - \frac{2}{3}$ and ask her to solve it. She writes $\frac{4}{5} + \frac{2}{3} = 1\frac{7}{15}$ or $\frac{4}{5} - \frac{2}{3} = \frac{2}{15}$.

- Play the “Comparing Fractions” dice game with your student.



1. You and your student roll two dice.
2. Arrange each pair of dice as a fraction by using the smaller number rolled as the numerator and the larger number rolled as the denominator.
3. Write the two fractions and ask him, "Which fraction is closer to 1 whole?"

For example, you roll the numbers 2 and 3. They represent the fraction $\frac{2}{3}$. Your student rolls the numbers 6 and 1. They represent the fraction $\frac{1}{6}$. You write $\frac{2}{3}$ and $\frac{1}{6}$ and ask him, "Which fraction is closer to 1 whole?" He says, " $\frac{2}{3}$."

If dice are not available, the game may be played using a random number generator on a phone or computer.

Terms

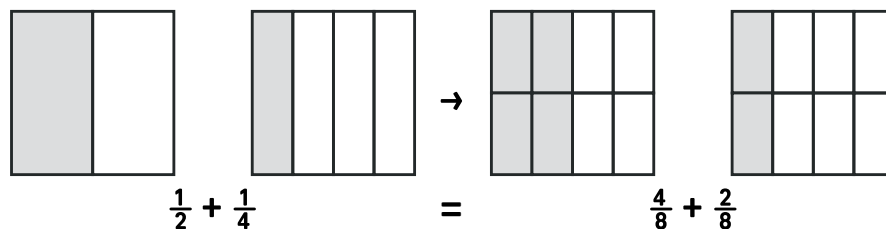
Benchmark fraction: a fraction against which another fraction can be measured or compared; is a benchmark fraction when comparing $\frac{1}{3}$ and $\frac{3}{5}$

Denominator (*Denominador*): the part of a fraction written below the fraction bar that identifies the total number of fractional units in a whole or set

$$\frac{5}{6}$$


The denominator of this fraction is 6.

Equivalent fractions (*Fracción equivalente*): fractions that name the same size or amount



Like denominators: when two or more fractions have the same denominator

$$\frac{2}{3} + \frac{1}{3}$$


The denominators are the same.



Numerator (*Numerador*): the part of a fraction written above the fraction bar that identifies the number of fractional units specified or being considered

$$\frac{5}{6}$$

← The numerator of this fraction is 5.

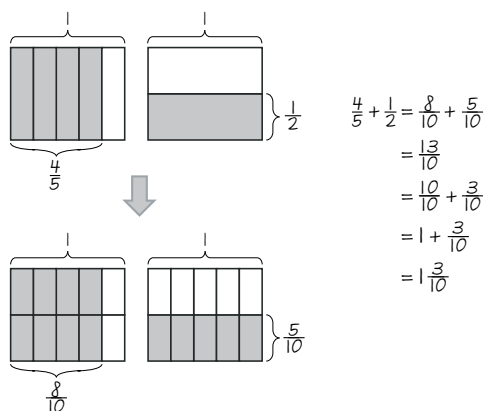
Unlike denominators: when two or more fractions have different denominators

$$\frac{1}{3} + \frac{1}{2}$$

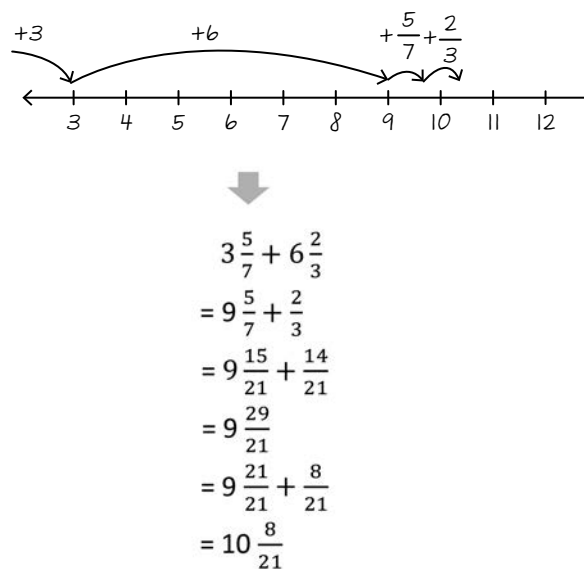
↙ ↘
The denominators are different.

Models

Rectangular Fraction Model



Number Line



Grado 5 Módulo 3

Consejos para las familias

Descripción general de los conceptos clave

TEKS de enfoque: **5.3A, 5.3H, 5.3K**

El enfoque del Módulo 3 es extender el trabajo anterior con equivalencia de fracciones y decimales para desarrollar la comprensión de los estudiantes sobre la suma y resta de fracciones. Se espera que su estudiante:

- ☐ Sume y reste fracciones con **denominadores diferentes** haciendo unidades semejantes pasando de lo concreto a lo representativo y a lo abstracto.
- ☐ Use **fracciones de referencia** para evaluar la razonabilidad de las ecuaciones de suma y resta.
- ☐ Resuelva problemas escritos de varios pasos y evalúe la razonabilidad de las respuestas.

Puede usar la lista de verificación anterior para ayudar a monitorear el progreso de su estudiante con los conocimientos y destrezas de este módulo. Ejemplos diarios de problemas con soluciones y burbujas de pensamiento se encuentran en las páginas de Ayuda para la tarea en los materiales del estudiante de Triunfar para ayudarlo a apoyar a su estudiante mientras trabaja en casa.

Formas adicionales de ayudar en casa

- Juegue el juego de dados “Encuentra el múltiplo más pequeño” con su estudiante.
 1. Usted y su estudiante lanzan un dado o usan un generador de números aleatorios en un teléfono o computadora.
 2. Pregúntele: “¿Cuál es el menor múltiplo común de estos dos números?”.

Por ejemplo, saca el número 6. Su estudiante saca el número 4. Pregunte: “¿Cuál es el múltiplo más pequeño de 6 y 4?”. Su estudiante dice: “12”.

- Juegue el juego de cartas “Suma o resta fracciones” con su estudiante. Use las cartas y saque las jotas, reinas, reyes, ases y comodines. Ponga boca abajo el montón de cartas restantes.
 1. Usted y su estudiante voltean dos cartas.
 2. Tanto usted como su estudiante organizan cada par de cartas como una fracción usando el número más pequeño como numerador y el número más grande como denominador.
 3. Use estas dos fracciones para escribir una oración de suma o resta y pídale que la resuelva. Al escribir una oración fraccionaria de resta, la fracción más grande debe escribirse primero.

Por ejemplo, voltee dos cartas con los números 4 y 5. Representan la fracción $\frac{4}{5}$. Su estudiante voltear

dos cartas con los números 3 y 2. Representan la fracción $\frac{2}{3}$. Usted escribe $\frac{4}{5} + \frac{2}{3}$ o $\frac{4}{5} - \frac{2}{3}$ y le pide que

lo resuelva. Su estudiante escribe $\frac{4}{5} - \frac{2}{3} = 1\frac{7}{15}$ o $\frac{4}{5} - \frac{2}{3} = \frac{2}{15}$.



- Juegue el juego de dados “Comparando fracciones” con su estudiante.
 1. Usted y su estudiante lanzan dos dados.
 2. Organice cada par de dados como una fracción usando el número más pequeño lanzado como numerador y el número más grande lanzado como denominador.
 3. Escriba las dos fracciones y pregúntele: “¿Qué fracción está más cerca de 1 entero?”.

Por ejemplo, saca los números 2 y 3. Representan la fracción $\frac{2}{3}$. Su estudiante lanza los números 6 y 1. Representan la fracción $\frac{1}{6}$. Usted escribe $\frac{2}{3}$ y $\frac{1}{6}$ y le pregunta: “¿Qué fracción está más cerca?” a 1 entero?” Él dice: “ $\frac{2}{3}$ ”.

Si los dados no están disponibles, el juego se puede jugar usando un generador de números aleatorios en un teléfono o computadora.

Términos

Denominador (*Denominator*): la parte de una fracción escrita debajo de la barra de fracción que identifica el número total de unidades fraccionarias en un todo o conjunto

$$\frac{5}{6}$$

El denominador de esta fracción es 6.

Denominadores diferentes: cuando dos o más fracciones tienen denominadores diferentes

$$\frac{1}{3} + \frac{1}{2}$$

Los denominadores son diferentes.

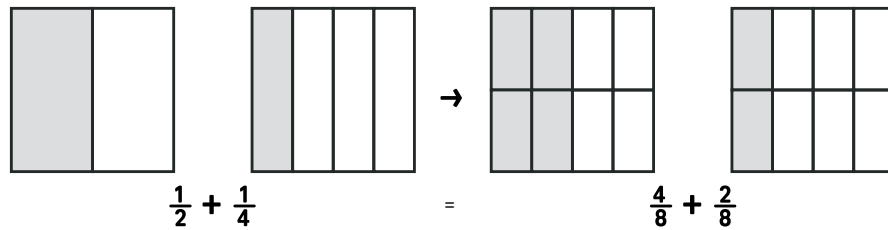
Denominadores semejantes: cuando dos o más fracciones tienen el mismo denominador

$$\frac{2}{3} + \frac{1}{3}$$

Los denominadores son iguales.



Fracción equivalente (*Equivalent fractions*): fracciones que nombran el mismo tamaño o cantidad



Fracción de referencia: fracción con la que se puede medir o comparar otra fracción; es una fracción de referencia al comparar $\frac{1}{3}$ y $\frac{3}{5}$

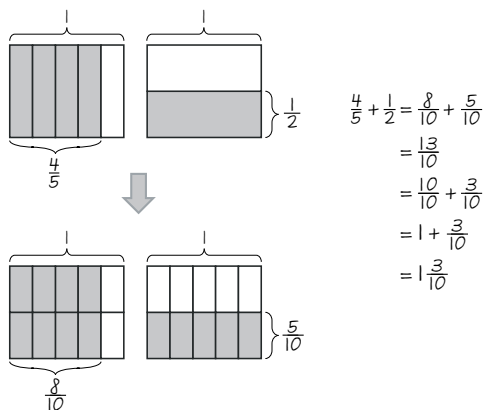
Numerador (*Numerator*): la parte de una fracción escrita arriba de la barra de fracciones que identifica el número de unidades fraccionarias especificadas o que se están considerando

El numerador de esta fracción es 5.

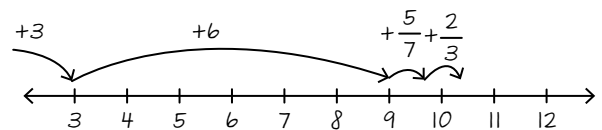
$\frac{5}{6}$

Modelos

Modelo de fracción rectangular



Recta numérica



$$\begin{aligned}&3\frac{5}{7} + 6\frac{2}{3} \\ &= 9\frac{5}{7} + \frac{2}{3} \\ &= 9\frac{15}{21} + \frac{14}{21} \\ &= 9\frac{29}{21} \\ &= 9\frac{21}{21} + \frac{8}{21} \\ &= 10\frac{8}{21}\end{aligned}$$



Grade 5 Module 4

Tips for Families

Key Concepts Overview

Focus TEKS: **5.3I, 5.3J, 5.3K, 5.3L, 5.4E, 5.4F, 5.7A, 5.9A, 5.9C, 5.10A, 5.10B, 5.10C, 5.10D, 5.10E, 5.10F**

The focus of Module 4 is understanding how to multiply whole numbers by fractions and how to begin dividing fractions. These operations are applied to create and solve word problems and interpret and evaluate numerical expressions. Multiplication involving a fraction is used when interpreting dot plots, converting measurements, and understanding personal financial literacy. Your student will:

- ☐ Multiply a whole number by a fraction or by a mixed number using strip diagrams, the associative property, and the distributive property.
- ☐ Solve and create fraction word problems involving addition, subtraction, and multiplication.
- ☐ Convert mixed unit measurements for customary and metric units.
- ☐ Divide a whole number by a unit fraction and a unit fraction by a whole number.
- ☐ Apply fraction and decimal multiplication to personal financial literacy to understand a simple **budget, gross income, net income, income tax, payroll tax, sales tax, and property tax.**
- ☐ Interpret, compare, and evaluate numerical expressions.

You can use the checklist above to help monitor your student's progress of the knowledge and skills in this module. Daily sample problems with solutions and thought bubbles are found in the Homework Helper pages of the Succeed Student Edition to help you support your student as they work at home.

Additional Ways to Help at Home

- Use fruits or vegetables to demonstrate fractions. If necessary, help your student put the fruits or vegetables into equal groups and then count them. Some examples include the following:
 - There are 25 blueberries in a box. What is $\frac{3}{5}$ of 25 blueberries? (15 blueberries)
 - There are 30 grape tomatoes in a box. What is $\frac{5}{6}$ of 30 grape tomatoes? (25 grape tomatoes)
- Play the “Take That to the Bean Bank” game. You will need several cups and some dried beans.
 1. Explain that 1 bean represents \$1, and give your student an allowance of 100 beans. Create several budgeting categories such as savings, clothing, activities, and donations. Label the cups with the name of each category.
 2. Assign the fraction $\frac{1}{10}$ to the savings category and help her determine how many beans must be assigned to the savings category based on that fraction.
 3. Have your student place the correct number of beans into the savings cup.
 4. To reinforce the concept of a balanced budget, help her determine how the remaining beans should be allocated among the other categories.



5. Have your student look online, or in other printed sources, for the prices of items they would like to purchase. Help her decide whether she has adequately budgeted for these items.
6. For each item purchased, have your student remove the correct number of beans from the cup labeled with that category. If needed, round the amount to the nearest whole number. This helps simulate paying for the purchased items. To extend this activity, help your student use a calculator to determine sales tax on any purchases.

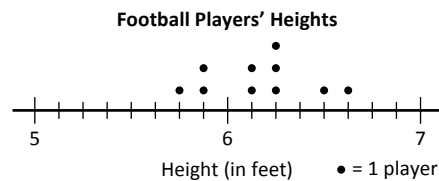
Terms

Budget: a plan for saving and spending money

Terry's Budget	
Description	Amount
Food	\$50
Clothes	\$125
Activities	\$25
Charitable donation	\$50

Balanced budget: a budget with expenses that are exactly equal to income. Terry receives \$100 per month for dog walking and \$150 per month for babysitting. The table shows Terry's budget. Terry's total monthly income is \$250. Terry's total monthly expenses are \$250. Terry has a balanced budget because the amount of his expenses are equal to the amount of his income.

Dot Plot: a plot of numerical data along a number line



Gross income: total amount of money received before taxes and other deductions are subtracted

Net income: the amount of money left after taxes and other deductions are subtracted

Income tax: money the government collects based on a person's income

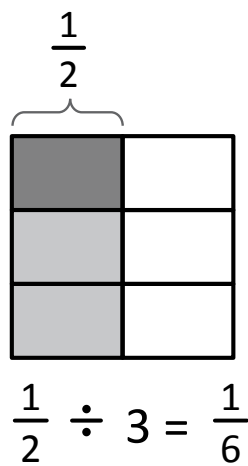
Payroll tax: money collected to help fund programs that help people when they retire

ABC Software, Inc 123 4th Ave Waco, TX 76706		Earnings Statement Period Ending: 9/1/20 Pay Date: 9/30/20 Employee: Ben Jones	
GROSS INCOME AND WAGES:		DEDUCTIONS	AMOUNT
This period: TOTAL	\$ 3,200	Income and Wages Tax	\$
DEDUCTED:	\$	Payroll Tax	\$
NET INCOME AND WAGES:		Health Insurance	\$
This period:	\$ 2,500		

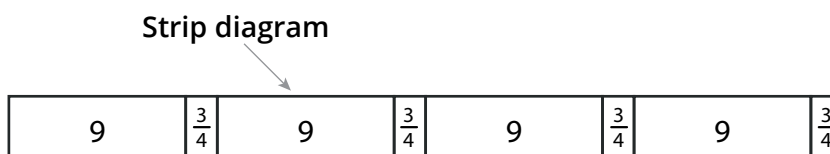


Models

Area Model

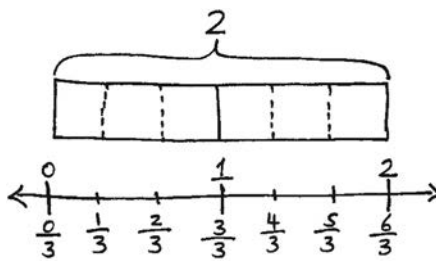


Strip Diagram



$$\begin{aligned} 4 \times 9\frac{3}{4} &= 36 + \frac{12}{4} \\ &= 36 + 3 \\ &= 39 \end{aligned}$$

Strip Diagram and Number Line



$$2 \div \frac{1}{3} = 6$$



Grado 5 Módulo 4

Consejos para las familias

Descripción general de los conceptos clave

TEKS de enfoque: 5.3I, 5.3J, 5.3K, 5.3L, 5.4E, 5.4F, 5.7A, 5.9A, 5.9C, 5.10A, 5.10B, 5.10C, 5.10D, 5.10E, 5.10F

El enfoque del Módulo 4 es entender cómo multiplicar números enteros por fracciones y cómo empezar a dividir fracciones. Estas operaciones se aplican para crear y resolver problemas escritos e interpretar y evaluar expresiones numéricas. La multiplicación que involucra una fracción se usa cuando se interpretan diagramas de puntos, se convierten medidas y se comprende las finanzas personales. Se espera que su estudiante:

- ☐ Multiplique un número entero por una fracción o por un número mixto usando diagramas de tiras, la propiedad asociativa y la propiedad distributiva.
- ☐ Resuelva y cree problemas escritos fraccionarios que involucren suma, resta y multiplicación.
- ☐ Convierta las medidas de unidades mixtas por unidades usuales y métricas.
- ☐ Divida un número entero entre una fracción unitaria y una fracción unitaria entre un número entero.
- ☐ Aplique la multiplicación de fracciones y decimales a la comprensión de finanzas personales para comprender un **presupuesto, ingreso bruto, ingreso neto, impuesto sobre los ingresos, impuesto sobre la nómina, impuesto a las ventas e impuesto a las propiedades**.
- ☐ Interprete, compare y evalúe expresiones numéricas.

Puede usar la lista de verificación anterior para ayudar a monitorear el progreso de su estudiante con los conocimientos y destrezas de este módulo. Ejemplos diarios de problemas con soluciones y burbujas de pensamiento se encuentran en las páginas de Ayuda para la tarea en los materiales del estudiante de Triunfar para ayudarlo a apoyar a su estudiante mientras trabaja en casa.

Formas adicionales de ayudar en casa

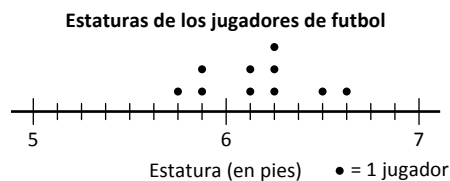
- Use frutas o verduras para demostrar fracciones. Si es necesario, ayude a su estudiante a poner las frutas o verduras en grupos iguales y luego cuéntelas. Algunos ejemplos son los siguientes:
 - Hay 25 arándanos en una caja. ¿Cuánto es $\frac{3}{5}$ de 25 arándanos? (15 arándanos)
 - Hay 30 tomates en una caja. ¿Cuánto es $\frac{5}{6}$ de 30 tomates? (25 tomates)
- Juegue al juego “Llévalo al banco de frijoles”. Necesitará varias tazas y frijoles secos.
 1. Explique que 1 frijol representa \$1 y dele a su estudiante una asignación de 100 frijoles. Cree varias categorías de presupuesto, como ahorros, ropa, actividades y donaciones. Etiquete las tazas con el nombre de cada categoría.
 2. Asigne la fracción $\frac{1}{10}$ a la categoría de ahorros y ayúdelo a determinar cuántos frijoles deben asignarse a la categoría de ahorros según esa fracción.



3. Pida a su estudiante que coloque la cantidad correcta de frijoles en la taza de ahorros.
4. Para reforzar el concepto de un presupuesto balanceado, ayúdelo a determinar cómo se deben distribuir los frijoles restantes entre las otras categorías.
5. Pida a su estudiante que busque en línea o en otras fuentes impresas, los precios de los artículos que le gustaría comprar. Ayúdelo a decidir si ha presupuestado adecuadamente estos artículos.
6. Por cada artículo comprado, pídale que saque la cantidad correcta de frijoles de la taza etiquetada con esa categoría. Si es necesario, redondee la cantidad al número entero más cercano. Esto ayuda a simular el pago de los artículos comprados. Para ampliar esta actividad, ayude a su estudiante a usar una calculadora para determinar el impuesto sobre las ventas en cualquier compra.

Términos

Diagrama de puntos: un diagrama de datos numéricos a lo largo de una recta numérica



Ingreso bruto: cantidad total de dinero recibida antes de restar impuestos y otras deducciones

Ingreso neto: la cantidad de dinero que queda después de restar los impuestos y otras deducciones

Impuesto sobre los ingresos: dinero que el gobierno recauda según los ingresos de una persona

Impuesto sobre la nómina: dinero recaudado para ayudar a financiar programas que ayudan a las personas cuando se jubilan

ABC Software, Inc 123 4th Ave Waco, TX 76706		Estado de Ganancias Periodo de finalización: 9/1/20 Fecha de pago: 9/30/20 Empleado: Ben Jones	
INGRESO BRUTO:		DEDUCCIONES	IMPORTE
Este periodo: \$ 3,200		Impuesto sobre los ingresos	\$ _____
TOTAL DEDUCIDO: \$ _____		Impuesto sobre la nómina	\$ _____
INGRESOS NETOS:		Seguro de enfermedad	\$ _____
Este periodo: \$ 2,500			

Presupuesto: un plan para ahorrar y gastar dinero

Presupuesto de Terry	
Descripción	Cantidad
Comida	\$50
Ropa	\$125
Actividades	\$25
Donación benéfica	\$50



Presupuesto balanceado: un presupuesto con gastos que son exactamente iguales a los ingresos. Terry recibe \$100 al mes por pasear al perro y \$150 al mes por cuidar niños. La tabla muestra el presupuesto de Terry. El ingreso mensual total de Terry es de \$250. Los gastos mensuales totales de Terry son de \$250. Terry tiene un presupuesto balanceado porque el monto de sus gastos es igual al monto de sus ingresos.

Modelos

Modelo de área

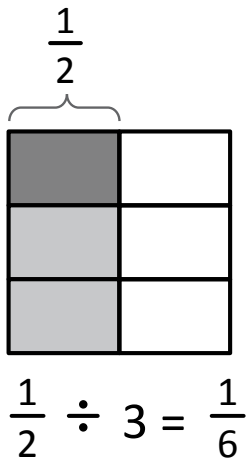
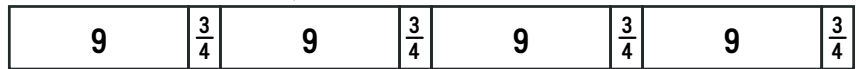


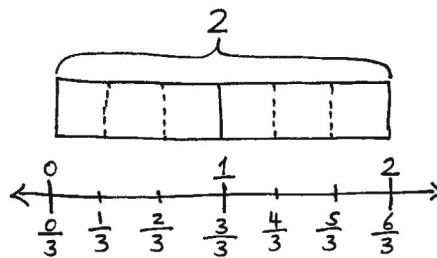
Diagrama de tiras

Diagrama de tiras



$$\begin{aligned} 4 \times 9\frac{3}{4} &= 36 + \frac{12}{4} \\ &= 36 + 3 \\ &= 39 \end{aligned}$$

Diagrama de tiras y recta numérica



$$2 \div \frac{1}{3} = 6$$



Grade 5 Module 5

Tips for Families

Key Concepts Overview

Focus TEKS: **5.3I, 5.4G, 5.4H, 5.5A, 5.6A, 5.6B**

The focus of Module 5 is exploring various two- and three-dimensional figures while understanding concepts of volume and area. Your student will:

- Find the **volume of a solid** by building and counting **unit cubes**, packing with unit cubes, and composing and decomposing rectangular prisms using layers.
- Find the volume of rectangular prisms using the following volume formulas.
 - $V = l \times w \times h$
 - $V = Bh$
- Find the total **volume** of solid figures composed of two non-overlapping rectangular prisms.
- Find the area of rectangles with whole-by-mixed and whole-by-fractional number side lengths by tiling, drawing, relating to the distributive property, and using the area model.
- Classify triangles by side lengths (**equilateral, isosceles, scalene**) and by angle measurements (acute, right, obtuse).
- Draw and classify quadrilaterals such as trapezoid, parallelogram, rhombus, rectangle, and square.
- Classify two-dimensional figures in a **hierarchy** based on their properties.

You can use the checklist above to help monitor your student's progress of the knowledge and skills in this module. Daily sample problems with solutions and thought bubbles are found in the Homework Helper pages of the Succeed Student Edition to help you support your student as they work at home.

Additional Ways to Help at Home

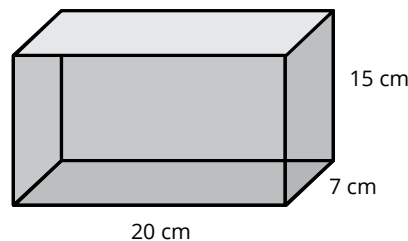
- Practice finding the volume of rectangular prisms by using rectangular prisms found around you. Use a ruler to measure the length, width, and height of each prism to the nearest centimeter or inch. Then find the volume of the prism. For example, if a cereal box measures a length of 9 inches, a width of 3 inches, and a height of 13 inches, then the volume of this cereal box is 351 cubic inches.
- During dinner or while on the go, help your student practice finding the area of a rectangle. Choose values for the dimensions of a rectangle that are based on multiplication facts he knows. For example, you say, "The length of a rectangle is 8 yards, and the width of the rectangle is 9 yards. What's the area of the rectangle?" He says, "8 yards times 9 yards equals 72 square yards."
- Review the attributes of triangles (acute, right, obtuse, equilateral, isosceles, scalene) with your student. Ask her to define the different attributes.



- Review quadrilaterals (trapezoid, parallelogram, rhombus, rectangle, and square) with your student. Ask him to define the different quadrilaterals and explain the similarities and differences of the quadrilaterals.
- Have a scavenger hunt to find objects around your neighborhood that contain shapes that are quadrilaterals or triangles. Ask your student to classify each quadrilateral or triangle that they find.

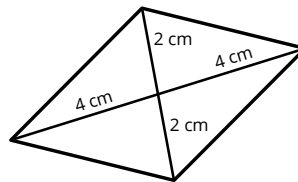
Terms

Base (*Base*): one of the faces of the prism, often thought of as the surface on which the prism rests

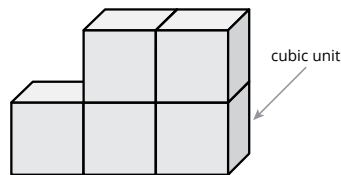


Bisect: divide into two equal parts

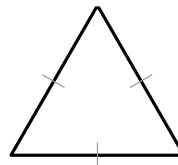
The diagonals of the parallelogram bisect each other.



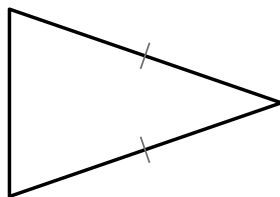
Cubic unit (*Unidad cúbica*): A unit for measuring volume. 1 cubic unit of volume is defined as the volume of a cube with side lengths of 1 unit.



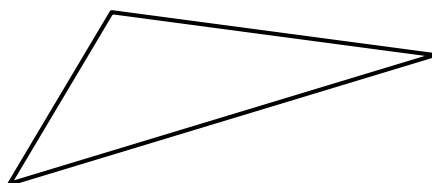
Equilateral triangle (*Triángulo equilátero*): A triangle with three congruent (equal) sides and three congruent (equal) angles. An equilateral triangle is a special type of isosceles triangle.



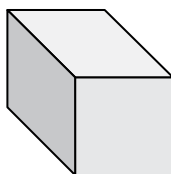
Isosceles triangle (*Triángulo isósceles*): a triangle with at least two congruent (equal) sides



Scalene triangle (*Triángulo escaleno*): a triangle with no congruent (equal) sides and no congruent angles

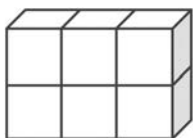


Rectangular prism (*Prisma rectangular*): a three-dimensional figure with six rectangular faces



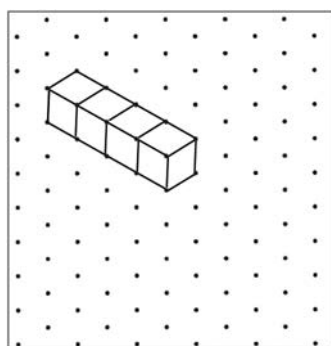
Models

Centimeter Cubes



Isometric Dot Paper

4 cubic units



Area Model

$$\begin{array}{l}
 \begin{array}{c} 1\frac{1}{3} \text{ in.} \\ 1 + \frac{1}{3} \\ \hline 3 \text{ in} \end{array} \\
 \begin{array}{l} (1 \times 3) + (\frac{1}{3} \times 3) \\ = 3 + 1 \\ = 4 \\ A = 4 \text{ square inches} \end{array}
 \end{array}$$



Grado 5 Módulo 5

Consejos para las familias

Descripción general de los conceptos clave

TEKS de enfoque: **5.3I, 5.4G, 5.4H, 5.5A, 5.6A, 5.6B**

El enfoque del Módulo 5 es explorar varias figuras de dos y de tres dimensiones mientras comprenden los conceptos de volumen y área. Se espera que su estudiante:

- ☐ Encuentre el **volumen de un sólido** construyendo y contando **cubos unitarios**, empacando con cubos unitarios y componiendo y descomponiendo prismas rectangulares usando capas.
- ☐ Encuentra el volumen de prismas rectangulares usando las siguientes fórmulas de volumen.
 - $V = l \times a \times h$
 - $V = Bh$
- ☐ Encuentre el **volumen total** de figuras sólidas compuestas por dos prismas rectangulares que no se enciman.
- ☐ Encuentre el área de los rectángulos con longitudes de lado de números enteros mixtos y enteros por fraccionarios colocando mosaicos, dibujos, relacionándolos con la propiedad distributiva y usando el modelo de área.
- ☐ Clasifique los triángulos por longitudes de lado (**equilátero, isósceles, escaleno**) y por medidas de ángulo (agudo, recto, obtuso).
- ☐ Dibuja y clasifica cuadriláteros como trapecio, paralelogramo, rombo, rectángulo y cuadrado.
- ☐ Clasifique las figuras de dos dimensiones en una jerarquía basada en sus propiedades.

Puede usar la lista de verificación anterior para ayudar a monitorear el progreso de su estudiante con los conocimientos y destrezas de este módulo. Ejemplos diarios de problemas con soluciones y burbujas de pensamiento se encuentran en las páginas de Ayuda para la tarea en los materiales del estudiante de Triunfar para ayudarlo a apoyar a su estudiante mientras trabaja en casa.

Formas adicionales de ayudar en casa

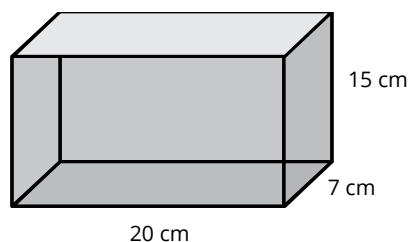
- Practique cómo encontrar el volumen de prismas rectangulares usando prismas rectangulares que se encuentran a su alrededor. Use una regla para medir la longitud, el ancho y la altura de cada prisma con una precisión de centímetro o pulgada más cercana. Luego, encuentre el volumen del prisma. Por ejemplo, si una caja de cereal tiene una longitud de 9 pulgadas, un ancho de 3 pulgadas y una altura de 13 pulgadas, entonces el volumen de esta caja de cereales es de 351 pulgadas cúbicas.
- Durante la cena o mientras viajan, ayude a su estudiante a practicar cómo encontrar el área de un rectángulo. Escoja valores para las dimensiones de un rectángulo que se basen en las operaciones de multiplicación que conoce. Por ejemplo, dice: “La longitud de un rectángulo es de 8 yardas y el ancho del rectángulo es de 9 yardas. ¿Cuál es el área del rectángulo?”. Él dice: “8 yardas por 9 yardas equivalen a 72 yardas cuadradas”.



- Revise los atributos de los triángulos (agudo, recto, obtuso, equilátero, isósceles, escaleno) con su estudiante. Pídale que defina los diferentes atributos.
- Repase los cuadriláteros (trapezio, paralelogramo, rombo, rectángulo y cuadrado) con su estudiante. Pídale que defina los diferentes cuadriláteros y explique las similitudes y diferencias de los cuadriláteros.
- Haga una búsqueda del tesoro para encontrar objetos en su vecindario que contengan figuras que sean cuadriláteros o triángulos. Pídale a su estudiante que clasifique cada cuadrilátero o triángulo que encuentre.

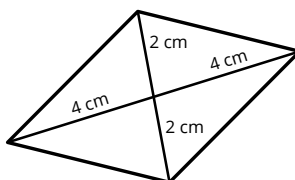
Términos

Base (Base): una de las caras del prisma, con frecuencia considerada como la superficie sobre la que descansa el prisma

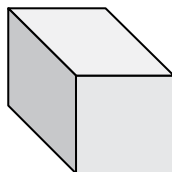


Bisecar: dividir en dos partes iguales

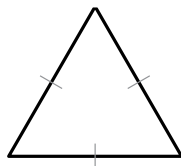
Las diagonales del paralelogramo se bisecan entre sí.



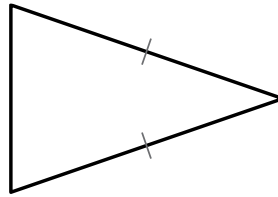
Prisma rectangular (Rectangular prism): figura de tres dimensiones con seis caras rectangulares



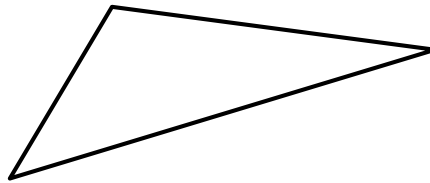
Triángulo equilátero (Equilateral triangle): un triángulo con tres lados congruentes (iguales) y tres ángulos congruentes (iguales). Un triángulo equilátero es un tipo especial de triángulo isósceles.



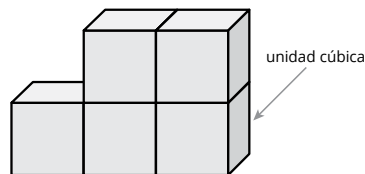
Triángulo isósceles (*Isosceles triangle*): un triángulo con por lo menos dos lados congruentes (iguales)



Triángulo escaleno (*Scalene triangle*): un triángulo sin lados congruentes (iguales) y sin ángulos congruentes

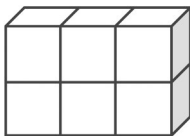


Unidad cúbica (*Cubic unit*): Una unidad para medir el volumen. 1 unidad cúbica de volumen se define como el volumen de un cubo con longitudes de lado de 1 unidad.



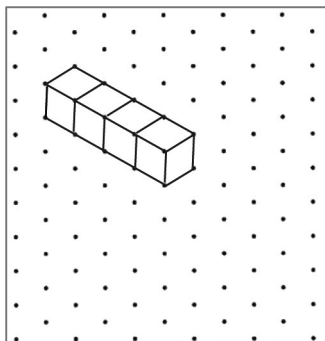
Modelos

Cubos de centímetros



Papel de puntos isométrico

4 unidades cúbicas



Modelo de área

$$\begin{array}{l}
 1\frac{1}{3} \text{ pulg} \\
 1 + \frac{1}{3} \\
 3 \text{ pulg} \quad 3 \\
 (1 \times 3) + (\frac{1}{3} \times 3) \\
 = 3 + 1 \\
 = 4 \\
 A = 4 \text{ pulgadas cuadradas}
 \end{array}$$



Grade 5 Module 6

Tips for Families

Key Concepts Overview

Focus TEKS: **5.3D, 5.3E, 5.3F, 5.3G, 5.3I, 5.3K, 5.3L, 5.4C, 5.4D, 5.4H, 5.8A, 5.8B, 5.8C, 5.9A, 5.9B, 5.9C**

The focus of Module 6 is to develop a coordinate system for the first quadrant of the coordinate plane and use it to solve problems. This learning extended to collect, organize, display, and interpret data. Your student will:

- ☐ Construct a coordinate system in the first **quadrant** of the **coordinate plane**, name points using **coordinate pairs**, and use the coordinate pairs to plot points.
- ☐ Use points to draw lines in the coordinate plane and describe patterns within the coordinate pairs.
- ☐ Generate number patterns from a given addition rule and a multiplication rule and compare the lines generated by each.
- ☐ Collect and represent data using dot plots, stem-and-leaf plots, **scatterplots**, bar graphs, and **double bar graphs**.
- ☐ Solve multi-step problems to apply concepts and skills mastered throughout Grade 5.

You can use the checklist above to help monitor your student's progress of the knowledge and skills in this module. Daily sample problems with solutions and thought bubbles are found in the Homework Helper pages of the Succeed Student Edition to help you support your student as they work at home.

Additional Ways to Help at Home

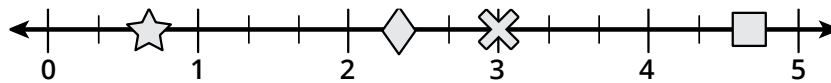
- Ask your student how she determines where to plot a point by asking her the following questions.
 - What does the first number in the coordinate pair represent? (It is the *x*-coordinate. This number represents the distance from 0 on the *x*-axis.)
 - What does the second number in the coordinate pair represent? (It is the *y*-coordinate. This number represents the distance from 0 on the *y*-axis.)
- Play the “Don’t Sink My Ship” game with your student. The directions, rules, and template are in the Lesson 4 Problem Set.
- Have your student measure several similar objects and record the measurements. Then have him display the data by using a dot plot and/or a stem-and-leaf plot. Have him create a question that can be answered by using the data. For example, if he measures the height of several pieces of furniture, a possible question could be, “What is the difference in height between the tallest piece and the shortest piece of furniture that was measured?”
- Have your student collect paired data, display it on a scatterplot, and look for a pattern. For example, she might collect data on the number of hours of screen time and the corresponding number of hours of sleep each day.



- Remind your student to use the Read–Draw–Write (RDW) process to solve problems. Have him select a few word problems from his homework, and ask him to show you the steps of the RDW process as he solves each problem. First, he should carefully read through the problem. Then, he should draw a model to make sense of the problem, or he may prefer to act out what is happening in the story to help him understand the word problem. Finally, he should write an equation and a statement to put the answer back into the context of the problem.

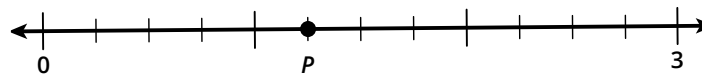
Terms

Axis: a fixed reference line for the measurement of coordinates

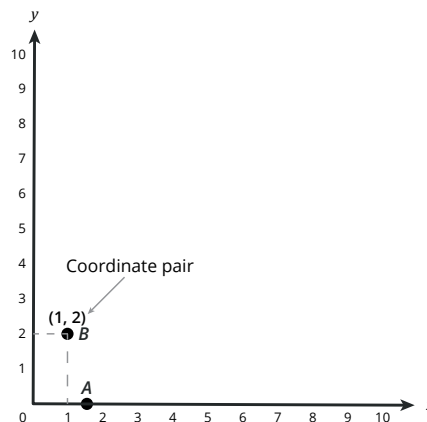


Coordinate (*Coordenada*): a number that identifies the location of a point

Point P has a coordinate of $1\frac{1}{4}$

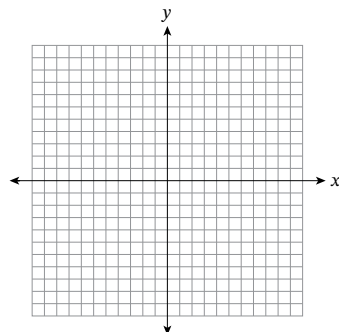


Coordinate pair (*Par de coordenadas*): two numbers that are used to identify a point on a plane and written as (x, y) where x represents a distance from 0 on the x -axis and y represents a distance from 0 on the y -axis



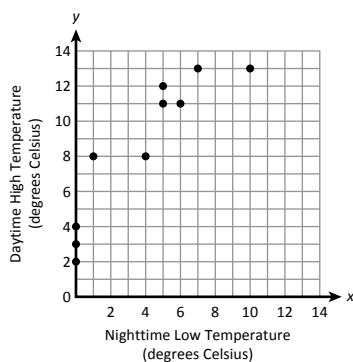
x-axis: the horizontal number line in a coordinate plane

y-axis: the vertical number line in a coordinate plane



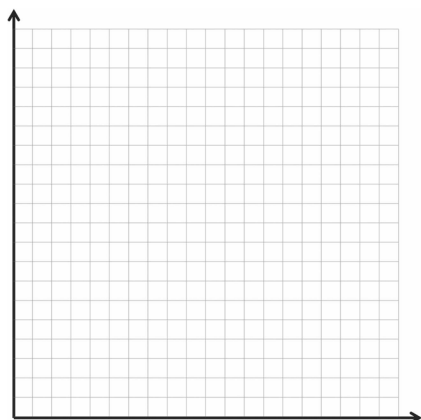
Quadrant (*Cuadrante*): one of the four regions in the coordinate plane formed by the intersection of the x-axis and the y-axis

Scatterplot: a graph consisting of points that demonstrate the relationship between the data of two variables

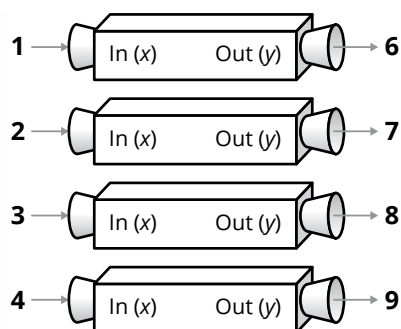


Models

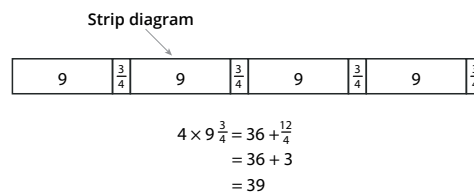
Coordinate Plane



Number Machine



Strip Diagram



Grado 5 Módulo 6

Consejos para las familias

Descripción general de los conceptos clave

TEKS de enfoque: **5.3D, 5.3E, 5.3F, 5.3G, 5.3I, 5.3K, 5.3L, 5.4C, 5.4D, 5.4H, 5.8A, 5.8B, 5.8C, 5.9A, 5.9B, 5.9C**

El enfoque del Módulo 6 es desarrollar un sistema de coordenadas para el primer cuadrante del plano de coordenadas y usarlo para resolver problemas. Este aprendizaje se extiende para recopilar, organizar, representar e interpretar datos. Se espera que su estudiante:

- ☐ Construya un sistema de coordenadas en el **cuadrante** del plano de **coordenadas**, asigne un nombre a los puntos usando **pares de coordenadas** y use los pares de coordenadas para marcar puntos.
- ☐ Use puntos para dibujar líneas en el plano de coordenadas y describir patrones dentro de los pares de coordenadas.
- ☐ Genere patrones numéricos a partir de una regla de suma y una regla de multiplicación dadas y compare las líneas generadas por cada una.
- ☐ Recopile y represente datos mediante diagramas de puntos, diagramas de tallo y hojas **diagramas de dispersión**, gráficas de barras y **gráficas de barras dobles**.
- ☐ Resuelva problemas de varios pasos para aplicar los conceptos y destrezas que domina a lo largo del Grado 5.

Puede usar la lista de verificación anterior para ayudar a monitorear el progreso de su estudiante con los conocimientos y destrezas de este módulo. Ejemplos diarios de problemas con soluciones y burbujas de pensamiento se encuentran en las páginas de Ayuda para la tarea en los materiales del estudiante de Triunfar para ayudarlo a apoyar a su estudiante mientras trabaja en casa.

Formas adicionales de ayudar en casa

- Pregúntele a su estudiante cómo determina dónde marcar un punto haciéndole las siguientes preguntas.
 - ¿Qué representa el primer número del par de coordenadas? (Es la coordenada x . Este número representa la distancia desde el 0 en el eje x).
 - ¿Qué representa el segundo número del par de coordenadas? (Es la coordenada y . Este número representa la distancia desde el 0 en el eje y).
- Juegue al juego “No hundas mi barco” con su estudiante. Las instrucciones, las reglas y la plantilla se encuentran en el Grupo de problemas de la Lección 4.
- Pida a su estudiante que mida varios objetos similares y registre las mediciones. Luego, pídale que muestre los datos usando un diagrama de puntos y/o un diagrama de tallo y hojas. Pídale que cree una pregunta que pueda contestarse usando los datos. Por ejemplo, si mide la altura de varios muebles, una posible pregunta podría ser: “¿Cuál es la diferencia entre la altura del mueble más alto y el mueble más bajo que se midió?”.

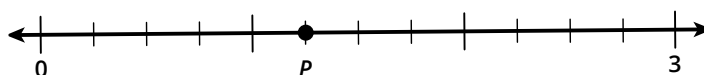


- Pida a su estudiante que recopile datos en pares, los represente en un diagrama de dispersión y busque un patrón. Por ejemplo, podría recopilar datos sobre el número de horas que pasa frente a una pantalla y el número correspondiente de horas de sueño cada día.
- Recuérdele a su estudiante que use el proceso de Lee-Dibuja-Escribe (LDE) para resolver problemas. Pídale que seleccione algunos problemas escritos de su tarea y que le muestre los pasos del proceso de LDE a medida que resuelve cada problema. Primero, debe leer cuidadosamente el problema. Luego, debe dibujar un modelo para dar sentido al problema, o puede que prefiera representar lo que está ocurriendo en el problema para ayudarlo a entender el problema. Por último, debe escribir una ecuación y una oración para poner la respuesta de nuevo en el contexto del problema.

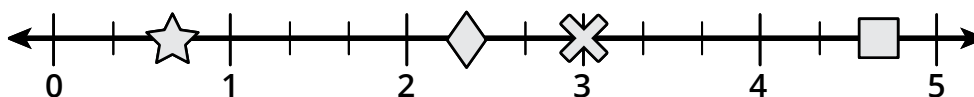
Términos

Coordenada (*Coordinate*): un número que identifica la ubicación de un punto

El punto P tiene una coordenada de $1\frac{1}{4}$

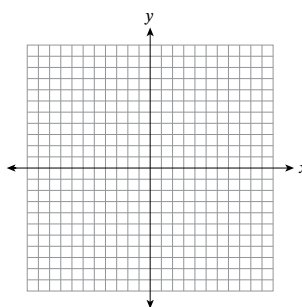


Eje: una línea de referencia fija para la medición de coordenadas

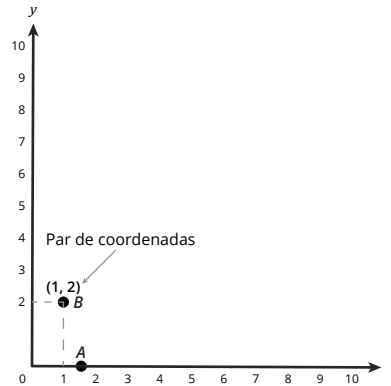


Eje x: la recta numérica horizontal en un plano de coordenadas

Eje y: la recta numérica vertical en un plano de coordenadas

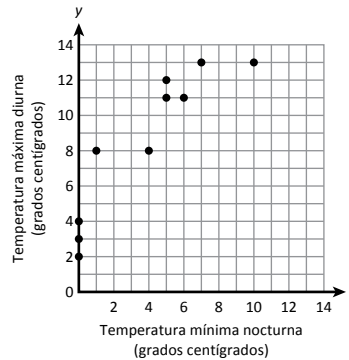


Par de coordenadas (*Coordinate pair*): dos números que se usan para identificar un punto en un plano y se escriben como (x, y) , donde x representa una distancia desde el 0 en el *eje x* y y representa la distancia desde el 0 en el *eje y*.



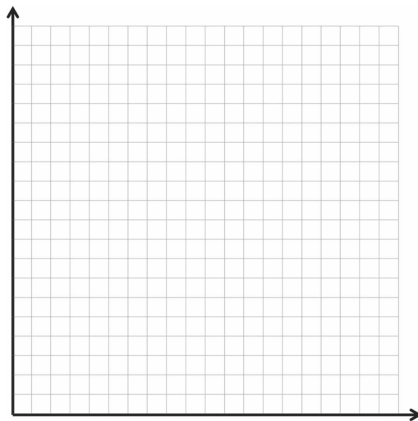
Cuadrante (*Quadrant*): una de las cuatro regiones del plano de coordenadas formada por la intersección del *eje x* y el *eje y*.

Diagrama de dispersión: una gráfica formado por puntos que demuestran la relación entre los datos de dos variables



Modelos

Plano de coordenadas



Máquina de números

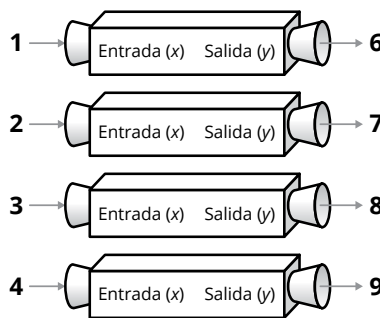
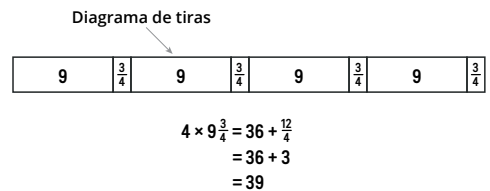


Diagrama de tiras



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ISBN 979-8-89072-363-5

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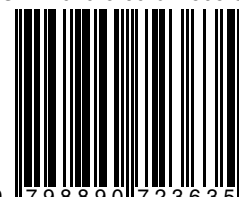
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