

Topic 1

Topic Overview

Rational Number Operations

Lesson	Let's Investigate 1-1 Understand Rational Numbers 2 days	Let's Model in 3 Acts 1-2 First to 100 1 day	Let's Build 1-3 Add and Subtract Rational Numbers 2 days
Essential Understanding	Rational numbers expressed as fractions can be written as decimals by dividing the numerator by the denominator.	Many real-world problem situations can be represented with a mathematical model, but that model may not represent a real-world situation exactly.	Adding and subtracting integers is related to adding and subtracting other rational numbers.
Mathematics Objectives	Identify rational numbers. Convert rational numbers expressed as fractions to terminating or repeating decimals.	Use mathematical modeling to represent a problem situation and to propose a solution. Test and verify the appropriateness of math models. Explain why the results my not align exactly with the problem situation.	Add and subtract positive and negative rational numbers. Use number lines to model addition and subtraction as a movement or distance between rational numbers.
Language Objective	Describe how to recognize rational numbers, and explain, orally and in writing, how to write them in decimal form.	Explain, orally and in writing, how to apply a mathematical model to solve a real-world problem involving adding and subtracting rational numbers.	Explain, orally and writing, how to add and subtract rational numbers.
Vocabulary	Reinforce Vocabulary rational number	Reinforce Vocabulary model	Reinforce Vocabulary rational number
Materials	- tokens for game play - calculators	none	number lines
TEKS & ELPS	TEKS 7.2A, 7.3A Mathematical Process Standards 7.1A, 7.1B, 7.1D, 7.1E, 7.1F, 7.1G ELPS Reading 3C	TEKS 7.2A, 7.3A Mathematical Process Standards 7.1B, 7.1C, 7.1E, 7.1F, 7.1G	TEKS 7.3A, 7.3B* Mathematical Process Standards 7.1B, 7.1D, 7.1E, 7.1F ELPS Speaking 2D

Topic Assessment Options in Assessment Sourcebook and Online

- Topic Readiness Test
- Mid-Topic Assessment
- Topic Assessment
- Topic Performance Task

Use after Lesson 1-3.

Lesson	Let's Build 1-4 Multiply Rational Numbers 1 day	Let's Build 1-5 Divide Rational Numbers 1 day	Let's Build 1-6 Solve Problems with Rational Numbers 1 day
Essential Understanding	Integers and rational numbers are part of the real number system. Thus, the same properties used to multiply integers also apply when multiplying rational numbers.	Integers and rational numbers are part of the real number system. Thus, the same properties used to divide integers also apply when dividing rational numbers.	Problems involving rational numbers can be solved in different ways. Proficiency for solving problems with rational numbers can be best accomplished by first making sense of the quantities in a problem and understanding their relationships to each other.
Mathematics Objectives	Multiply with rational numbers. Apply operations with rational numbers to real-world contexts.	Divide with rational numbers. Apply operations with rational numbers to real-world contexts.	Decide which operations to use to solve problems with rational numbers.
Language Objective	Explain, orally and in writing, how to multiply rational numbers.	Explain, orally and in writing, how to divide rational numbers.	Describe, orally and in writing, ways to solve problems with rational numbers.
Vocabulary	Reinforce Vocabulary • rational number	Reinforce Vocabulary • complex fraction • multiplicative inverses	Reinforce Vocabulary • rational number
Materials	• number lines	• number lines	none
TEKS & ELPS	TEKS 7.3A, 7.3B* Mathematical Process Standards 7.1A, 7.1D, 7.1E, 7.1F ELPS Listening 1D	TEKS 7.3A, 7.3B* Mathematical Process Standards 7.1B, 7.1D, 7.1F, 7.1G ELPS Speaking 2B	TEKS 7.3A, 7.3B* Mathematical Process Standards 7.1B, 7.1C, 7.1D, 7.1E ELPS Reading 3G

Math Background: Focus

Rational Number Operations

Operations with Rational Numbers

- **Understand Rational Numbers** In Lesson 1-1, students will identify rational numbers and learn to write them in equivalent fraction and decimal forms. While converting rational numbers to decimals, students will learn that some decimals are terminating decimals and some are repeating decimals. Students will determine if the decimal form of a rational number is terminating or repeating by dividing the numerator by the denominator.
- **Add and Subtract Rational Numbers** In Lesson 1-3, students will extend their knowledge of integer operations to solve problems involving adding and subtracting rational numbers with different signs.

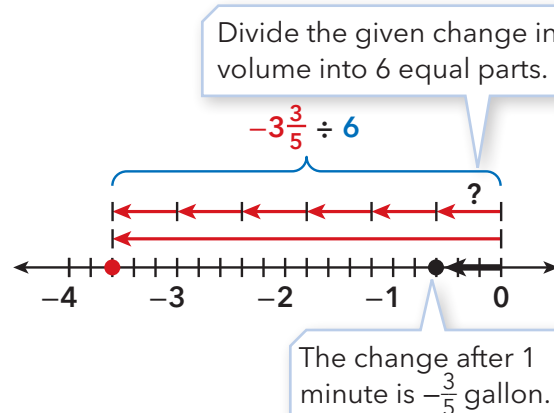
- **Multiply Rational Numbers** In Lesson 1-4, students will extend their understanding of integer multiplication rules to multiplication of positive and negative rational numbers. Students use the rules for multiplying rational numbers to find Petra's change in elevation.

$$3.5 \cdot (-1.2) = -4.2$$

Write an expression to represent the situation.

Petra's change in elevation is -4.2 meters.

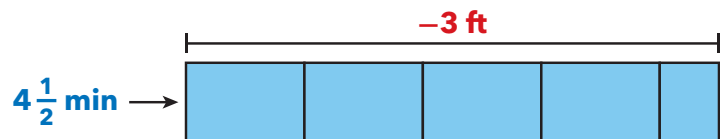
- **Divide Rational Numbers** In Lesson 1-5, students will extend their understanding of how the relationship between multiplication and division of integers extends to division of positive and negative rational numbers. Students use a number line to represent the change in the volume of water in a rain barrel.



Solve Problems with Rational Numbers

- **Choose the Appropriate Operation** In Lesson 1-6, students will analyze problems to determine which operations should be used. Students will solve the problem by extending their knowledge of writing and solving expressions for a given scenario.
- **Be Precise** In Lesson 1-6, students will use visual representations to establish which operation to use in order to find a solution.

Students solve problems with rational numbers using a bar diagram to represent the time it takes a boat to lower in a lock.



- **Teacher Support Videos** Topic Overview Videos also present additional important information about the content.

Advanced Concepts for the Teacher

- **Subtracting Negative Numbers** Additive inverses can be used to rewrite expressions involving subtraction with addition.

The additive inverse of y is $-y$, such that
 $y + (-y) = 0$.

Then $-(-y)$ is the number such that when you add it to $-y$ you get 0.

$$-y + (-(-y)) = 0.$$

Since additive inverses are unique,

$$-(-y) = y.$$

You can write the difference of x and $(-y)$ as a sum, based on the definition of subtraction.

$$\text{If } x - (-y) = z, \text{ then } z + (-y) = x.$$

Solve the second equation by using the Addition Property of Equality to add y to each side of the equation.

$$z + (-y) = x$$

$$z + (-y) + y = x + y$$

$$z + 0 = x + y$$

$$z = x + y$$

Additive inverses

$$\text{So } x - (-y) = x + y.$$

- **Multiplying Negative Numbers** You can apply the properties of real numbers to find the product $(-1)(-1)$.

$$0 = (-1)(0)$$

$$= (-1)(-1 + 1) \quad \text{Additive inverses}$$

$$= (-1)(-1) + (-1)(1) \quad \text{Distributive Property}$$

$$= (-1)(-1) + (-1) \quad \text{Multiplicative identity}$$

Since $0 = (-1)(-1) + (-1)$ and additive inverses are unique, the product $(-1)(-1)$ must be the additive inverse of -1 .

$$\text{Therefore, } (-1)(-1) = 1.$$

You can use this result to show that $(-m)(-n) = mn$ for all real numbers m and n . First show that the additive inverse of any number m is equal to the product of the additive inverse of 1 and m . That is, $-m = (-1)m$.

$$0 = 0 \times m$$

$$= (-1 + 1) \times m \quad \text{Additive inverses}$$

$$= (-1)m + (1)m \quad \text{Distributive Property}$$

$$= (-1)m + m \quad \text{Multiplicative identity}$$

Since $(-1)m + m$ is equal to zero, $(-1)m$ is the additive inverse of m , and $(-1)m = -m$.

Now you can use this fact to show that $(-m)(-n) = mn$.

$$(-m)(-n) = (-1)m(-1)n$$

$$= (-1)(-1)mn \quad \text{Commutative Property}$$

$$= (1)mn \quad (-1)(-1) = 1$$

$$= mn \quad \text{Multiplicative identity}$$

You can also prove other rules of algebra that you have learned, such as division by negative numbers, and multiplication of fractions, using similar reasoning. These rules extend to many other contexts such as simplifying complex fractions, rationalizing the denominator of a fraction with an irrational or complex denominator, and finding equivalent rational functions.

Math Background: Coherence

Rational Number Operations

Students learn best when concepts are connected throughout the curriculum. This coherence is achieved within topics, across topics, across domains, and across grade levels.

Look Back

How does Topic 1 connect to what students learned earlier?

Grade 6

- **Rational Number Operations** In Grade 6, students performed operations with decimals and fractions by following an algorithm or utilizing a number line. Students recognized that opposite signs in rational numbers indicated locations on opposite sides of zero on the number line. (6.3D)

Topic 1

How is content connected within Topic 1?

- **Rational Numbers** In Lesson 1-1, students convert fractions to decimals and learn how to classify decimals as either terminating or repeating. In Lesson 1-3, students review the different outcomes that result from adding or subtracting rational numbers with different signs. In Lesson 1-4, students solve problems by multiplying rational numbers. In Lesson 1-5, students extend their understanding of division to rational numbers. In Lesson 1-6, students use properties of operations to solve problems involving rational numbers. (7.3A, 7.3B))

Look Ahead

How does Topic 1 connect to what students will learn later?

Later in Grade 7

- **Rates and Proportions** In Topic 2, students will need to use operations with positive and negative integers and rational numbers to determine unit rates and solve proportions. (7.4B, 7.4C)
- **Expressions and Equations** In Topic 4 students will evaluate expressions and solve algebraic equations and inequalities that involve positive and negative integers and rational numbers. Students will extend their knowledge of opposites and inverse relationships in order to isolate the variable when solving equations and inequalities. (7.7A, 7.11A)

Grade 8

- **Equations** In Grade 8, students will continue to use operations with positive and negative integers and rational numbers to solve equations by using inverse relationships and operation rules. (8.8A, 8.8B, 8.8C))
- **Systems of Equations** In Grade 8, students will use operations with positive and negative integers and rational numbers to find solutions for systems of linear equations using algebraic methods. (8.9A)
- **Radicals** In Grade 8, students will begin to examine the use of square and cube roots and will discover that square roots of negative numbers cannot be found in the real number system. (8.2B)

Topic 1

Math Background: Balance Rational Number Operations

A balanced curriculum emphasizes conceptual understanding, procedural skill and fluency, and applications.

Conceptual Understanding

Rational Numbers and Decimals Students write rational numbers as fractions and decimals. Students learn about terminating and repeating decimals and understand how to recognize a decimal as its specific type.

Terminating Decimal

$$\frac{3}{4}$$

$$0.75$$

$$4 \overline{)3.00}$$

Repeating Decimal

$$\frac{1}{6}$$

$$0.1\overline{6}$$

$$6 \overline{)1.00}$$

Procedural Skill and Fluency

- **Adding Decimals** In Lesson 1-3, students develop procedural skill in adding rational numbers. Students use their knowledge of working within place values to add decimals like they previously added whole numbers. In order to easily align place values, line up the decimal points.

$6.745 + 3.09$ The first addend has digits to the thousandths place. The second addend has digits to the hundredths place.

$$\begin{array}{r} 6.745 \\ + 3.09 \\ \hline \end{array}$$

Aligning the decimal points assures that the ones, tenths, and hundredths places are aligned properly. The thousandths place in the second addend contains an “invisible” zero.

$$\begin{array}{r} 1 \\ 6.745 \\ + 3.090 \\ \hline 9.835 \end{array}$$

When carrying, be sure to carry to the correct place value.

- **Multiplying Decimals** In Lesson 1-4, students use their fluency with multiplying whole numbers to align the last digit when multiplying decimals.

$$6.745 \times 3.09$$

$$\begin{array}{r} 6.745 \\ \times 3.09 \\ \hline \end{array}$$

The last digit in the first factor is 5. The last digit in the second factor is 9. These digits must align.

$$\begin{array}{r} 6.745 \\ \times 3.09 \\ \hline \end{array}$$

The first factor has 3 digits after the decimal point. The second factor has 2 digits after the decimal point. There will be 5 (3 + 2) digits after the decimal point in the product.

$$\begin{array}{r} 211 \\ 644 \\ 6.745 \\ \times 3.09 \\ \hline 60705 \\ 00000 \\ 2023500 \\ 20.84205 \end{array}$$

When carrying, be sure to carry to the correct place value.

There should be 5 digits after the decimal point in the product.

Estimating: 6.745 rounds to 7 and 3.09 rounds to 3. You can use $7 \times 3 = 21$ to estimate that the answer will be around 21.

Applications

- **Solve Problems with Rational Numbers** Throughout Topic 1, students encounter many different types of situations involving rational numbers. In Lesson 1-6, students use a product of two integers to show the point total that would appear for a game show contestant.



Topic
1

Mathematical Process Standards

Rational Number Operations

The math processes describe the behaviors and thinking habits that mathematically proficient students demonstrate when actively engaged in mathematics work. Opportunities for engagement in the processes and to develop expertise with these important behaviors and thinking habits exist throughout the topic and program. Here we focus on mathematical reasoning and explaining.

As students solve rational number operation problems, look for these behaviors to assess and identify students who demonstrate proficiency with mathematical reasoning and explaining.

Highlighted Mathematical Process Standards Within Topic 1 Lessons

The student is expected to use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution. (7.1B)	The student is expected to communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate. (7.1D)
Mathematically proficient students:	Mathematically proficient students:
• Make sense of fractions and decimals and their relationships to each other.	• Create a logical representation of problems with rational numbers.
• Decide which operations to use when solving problems with rational numbers.	• Fluently convert rational numbers between fraction and decimal form.
• Are flexible in the use of operations with rational numbers.	• Accurately apply properties of operations to rational numbers in both decimal and fraction form.
• Determine reasonableness of a rational number answer in the context of a problem.	• Use representations, such as number lines, to model rational numbers.

Help students become more proficient with mathematical reasoning and explanation.

If students do not understand how to represent situations as equations and inequalities and solve them, then use these questioning strategies to help them develop reasoning and explaining skills as they solve problems throughout the topic.

- What do the numbers used in the problem represent?
- What is the relationship between these quantities?
- How are fractions and decimals related?
- Could another operation or property be used to represent this situation? Why or why not?
- What do you notice when you subtract a negative rational number?
- What patterns do you find in the multiplication and division operations with positive and negative rational numbers?
- How do you recognize the different types of decimal numbers?
- What parts of the addition and subtraction of positive and negative rational numbers problem might you simplify first?

Build G.R.I.T.

Rational Number Operations

Have students use an organized approach to problem-solving while they work on rational number operations. Make sure students are reinforcing past skills to achieve success with these important concepts. If students get frustrated while solving application problems, emphasize their small victories in less rigorous tasks to build their confidence in applying what they have learned.

Grow Confidence

While working with rational numbers and their operations, students will be reinforcing past arithmetic properties. Make sure to connect how their past skills are valuable when building a good foundation for learning new concepts.

Resilience

Remind students that resilience means pushing through frustration and not giving up. Use aids like the following to help students better understand positive and negative integers:

- Ground level and sea level
- Temperatures
- Bank account balances

Self-Efficacy

Help students believe in their ability to solve problems step by step. When exploring rational numbers, have students use their knowledge of number lines to investigate rational values and deepen their conceptual understanding.

Time Management

Have students break down tasks into smaller steps and track their progress. Describe mistakes as opportunities to refine their approach. Encourage students to plan enough time at the end to reflect on their solutions and adjust models or equations as they solve.

Sample Classroom Conversation

Lorah: Can you help me with this problem? Each day I add the change from my lunch money to a jar on my desk. The change is \$0.65. How many weeks would it take me to save at least \$20?

Teacher: Of course I can help you, Lorah. Break it down into small steps, how much money do you have saved after one and two days?

Lorah: The first day is just 65 cents, but the second day it will be twice that, or \$1.30, right?

Teacher: That is right! Since the amount is a decimal, how does this change your approach to solving?

Lorah: I must be careful where I put the decimal point, but it is mostly the same. I'm adding 0.65 for each day to my total, and I will continue to add until I reach \$20.

Teacher: Exactly! By breaking down steps to represent the problem, you are finding your own way to make sense of it. You're building your confidence!

Connect to Real-Life Experiences

Connect this topic to real-life experiences by:

- adding and subtracting decimals to determine the balance in a bank account after deposits and withdrawals.
- multiplying and dividing to determine unit prices for food.
- using rational operations like division to determine portions for a party.

Linguistic Accommodations

Rational Number Operations

Language Accommodations and Oral/Written Discourse

There are many opportunities to interact with the topic’s vocabulary words: in Lessons, by using the Vocabulary Review (of previously learned words and new topic words), and review of Vocabulary learned in the topic.

Activities in this topic offer diverse and engaging experiences with math vocabulary to build confidence and support for all, but particularly for Emerging Bilingual (EB) students in developing both their academic and language skills.

Topic Vocabulary Support

Topic Vocabulary	Complex Fraction	Multiplicative Inverses	
Prior Terms	Credit Card Debit Card Overdraft Fee Credit History	Positive Credit History Credit Bureau Credit Report Foreclosure	Grant Scholarship Student Loan Work-Study
Upcoming Terms	Proportional Relationship	Proportion	Constant of Proportionality

Vocabulary in Context

Word	Math Meaning	Other Meaning(s)
Rational	A number that can be written as a fraction, where both the top and bottom are whole numbers, and the bottom is not zero	Thinking or acting in a way that makes sense and is based on reason
Operation	A process used to solve a problem with numbers, like adding, subtracting, multiplying, or dividing	A medical procedure where doctors fix or remove something inside the body by cutting it open
Solution	The answer to a math problem	A liquid mixture where something is dissolved

Context Setting Vocabulary Students will encounter the following terms in this topic, be sure they understand their meaning to make sense of the problem situation.

- Lesson 1** digit, digital scale, terminate, terminating decimal, repeating decimal, Venn diagram

Lesson 2 points, earn, lose, gain

Lesson 3 magma reservoir, rational, mixed, mixed number, gravity, thrust, below, above
- Lesson 4** descend, summit, elevation, rational number

Lesson 5 volume, rain barrel, drip hose, constant, complex fraction, multiplicative inverses

Lesson 6 income, expenses, account balance

Metalinguistic Transfer to Spanish

Transferrable Skills Both English and Spanish use prepositions to describe the relationship between two objects in space. What is the distance between the top of the fishing pole and the fish?/¿Cuál es la distancia entre la parte superior de la caña de pescar y el pez?

Non-Transferrable Skills The Spanish language has different word order and pluralization rules for adjectives. In English, adjectives generally come before the noun and remain in singular form, while in Spanish, adjectives usually follow the noun and must agree in gender and number. Understand Rational Numbers/
Comprender los números racionales

Cognates

Cognates in this Topic Distances : Distancias Rational : Racional
Circles : Círculos Relative : Relativo
Position : Posición

False Cognates

Integers Whole numbers; positive, negative, and zero. **Scuba** A system to breathe underwater using tanks of air.
Íntegro To be honest and always do what is right. **Cuba** A container used to hold liquids.

Academic Vocabulary

Recommended Terms Although the academic vocabulary can be used anytime during the year, you may emphasize the terms below in written and oral opportunities:
Explore To study, examine, or think carefully about something to understand it better.
Evaluate To assess or determine the value, quality, or effectiveness of something by considering its components and results.

English Language Proficiency Standards (ELPS)

Lesson	(1) Listening	(2) Speaking	(3) Reading	(4) Writing
Lesson 1			3C	
Lesson 2				
Lesson 3		2D		
Lesson 4	1D			
Lesson 5		2B		
Lesson 6			3G	

Topic 1

Topic Opener Rational Number Operations

Rational Number Operations

Topic 1

Topic Essential Question

How can the properties of operations be used to solve problems involving integers and rational numbers?



Math Walk

Lock by Lock

How can you calculate distances below zero when the measurements are not integers?

B



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Topic 1 1

A

Math Walk

Math Walk

Generate excitement about the topic by having students watch the Math Walk video about scoring in different games.

Question in the Video

- How are negative numbers used in scoring points?

Questions for Students

You might give students copies of these Math Walk questions or project them and have students turn and talk to a partner followed by a whole-class discussion.

- What did you notice?
- What did you wonder?
- What question in the video is the person trying to answer?
- What did you see in the video that would help you answer the question?
- What other information do you need to answer the question?
- What math do you already know that can help you answer the question?
- What math questions do you have about what you saw in the video?

Later in the Topic

Any time after Lesson 1-3, show the video again.

Ask: What math did you learn that could help you answer the question or find the answer in a different way?

C Topic Essential Question

How do operations with integers relate to the same operations with rational numbers? How can you determine the correct operation to use to solve problems?

Revisit the Topic Essential Question throughout the topic. See the Teacher's Edition for the Topic Review for notes about answering the question.

D Home-School Connection

At the start of this topic, send home the Home-School Connection letter to give families an overview of the content in the topic.

Topic 1 Review What You Know

Vocabulary

Choose the best term from the box. Write it on the blank.

- The **Commutative Property** explains why $a \times b = b \times a$ and $a + b = b + a$.
- The **absolute value** of -6 is 6, because it is 6 units from zero on the number line.
- The number $\frac{5}{3}$ is a **rational number** because 5 and 3 are integers and $3 \neq 0$.
- The set of **integers** consists of the counting numbers, their opposites, and zero.
- The sum of $(a + b) + c$ is equal to the sum of $a + (b + c)$ as explained by the **Associative Property**.
- If you evaluate $n \times (y + z)$ by writing it as $(n \times y) + (n \times z)$, you have used the **Distributive Property**.

- absolute value
- Associative Property
- Commutative Property
- Distributive Property
- integers
- rational number

Add and Subtract Fractions and Decimals

Add or subtract.

- $2\frac{1}{3} + 6\frac{3}{5}$ **$8\frac{14}{15}$**
- $9\frac{1}{10} - 4\frac{3}{4}$ **$4\frac{7}{20}$**
- $19.86 + 7.091$ **26.951**
- $57 - 10.62$ **46.38**

Multiply and Divide Fractions and Decimals

Multiply or divide.

- 4.08×29.7 **121.176**
- $15,183.3 \div 473$ **32.1**
- $\frac{15}{16} \times \frac{9}{5}$ **$8\frac{5}{8}$**
- $4\frac{7}{9} \div 1\frac{7}{12}$ **$3\frac{1}{57}$**
- Byron has $1\frac{7}{10}$ kilograms of black pepper. He uses $\frac{7}{8}$ of the pepper and splits it between 7 pepper shakers. How much pepper will be in each shaker?
Ⓐ $\frac{119}{80}$ kg Ⓒ 1.4125 kg
Ⓑ $\frac{1}{8}$ kg Ⓓ $\frac{17}{80}$ kg

2 Topic 1

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A Review What You Know

Assign the Review What You Know to activate prior knowledge and practice the prerequisite skills needed for success in this topic. Encourage students to work independently or with a partner.

Use these questioning strategies to help them get started.

Add and Subtract Fractions and Decimals

- What must be the same when adding and subtracting fractions? [The fractions must have the same denominator.]
- Where is the decimal on a whole number? [Even though it is not written, the decimal point is at the end of a whole number.]

Multiply and Divide Fractions and Decimals

- How could Items 11 and 12 be estimated to check the reasonableness of your answers? [Item 11 could be estimated as $4 \times 30 = 120$; $120 \approx 121.176$, and Item 12 could be estimated as $15,000 \div 500 = 30$; $30 \approx 32.1$.]

B Vocabulary Review

You may choose to strengthen vocabulary with the following activity.

- Create a word search of the vocabulary terms using the vocabulary definitions as the clues. Have students work individually or in pairs to complete the word search.

C Academic Vocabulary

Use the online Academic Vocabulary Activities to introduce or revisit the words below. Then use the words during the topic.

Represent: Help students understand that they represent information by figuring out and explaining its meaning. Model how to represent change using a number line.

Simplify: Use the term repeatedly as you ask students to simplify an expression.

D Item Analysis: Review What You Know

Item	IS	DOK	TEKS
1–6	K7	1	3.4G, 6.2A, 6.2B
7, 8	L40, L41	1	5.3K
9, 10	L56, L59	1	5.3K
11, 12	L64, L69	1	6.3E
13, 14	L52, L53	1	6.3E
15	L52, L53	2	6.3E

E Topic 1 Prep Personalized by SuccessMaker®

Reviews and remediates key prerequisite TEKS for the topic's content.

Topic
1

Differentiation Library Overview

This topic has a variety of opportunities to engage students with the topic’s content in a variety of formats to allow for differentiation.

A

Pick a Project Use anytime. STEAM DL

- Project 1A** Students create a math walk.
- Project 1B** Students design a handmade item to sell.
- Project 1C** Students make a timeline.
- Project 1D** Students film an exercise video.

Project	Varied Engaging Contexts	Varied Activity Modalities	Varied Final Products
1A	Real world	Create	Math walk
1B	Crafting	Design	Budget and business proposal
1C	History	Make	Timeline
1D	Exercise	Film	Video

B

Stand Up and Think DL

- Stand Up and Think**
- Problem 1A** Roller Coaster Height
Use anytime after Lesson 1-3.
 - Problem 2B** Make a Trail Mix.
Use anytime after Lesson 1-4.

C

Amazing Contributions DL

Amazing Valerie L. Thomas used space technology to predict how much wheat was being produced for the entire world.
Use anytime.

Topic 1 Pick a Project

Project 1A

Where do you see math in the real world?

Create Your Own Math Walk



Project 1B

What is something you can make?

Design a Handmade Item to Sell



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Topic 1 | Pick a Project 3

Project 1C

How old were you when petroglyphs were being painted?

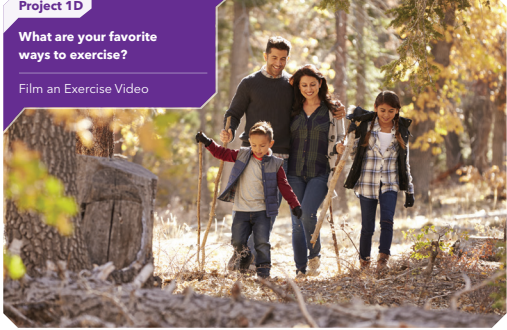
Make a Timeline



Project 1D

What are your favorite ways to exercise?

Film an Exercise Video

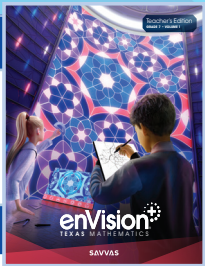


4 Topic 1 | Pick a Project

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Student Edition

Differentiation Library resources are available on Savvas Realize®. Additionally, resources with **DL** are available in print.



Build Understanding

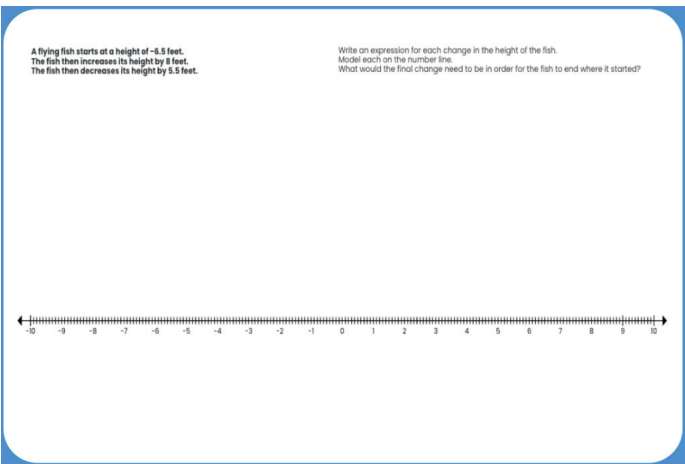
A

Digital Manipulative Activities

Available only at Savvas Realize®.

Amazing Flying Fish Students use number lines to model the changes in the height of a flying fish. They consider how to represent the starting height and how to represent the changes in height. They determine an expression that could take the fish back to its starting position and connect to adding and subtracting rational numbers. *Use anytime after Lesson 1-3.*

A Very Jumpy Frog Students model multiplication with positive and negative numbers by creating a model on a number line. Students consider what type of number is represented by the direction of the jumps (hops) and connect negative with a reflection across the origin on the number line. *Use anytime after Lesson 1-4.*



B

Lesson Resources *Use with each lesson.*

Available only at Savvas Realize®.

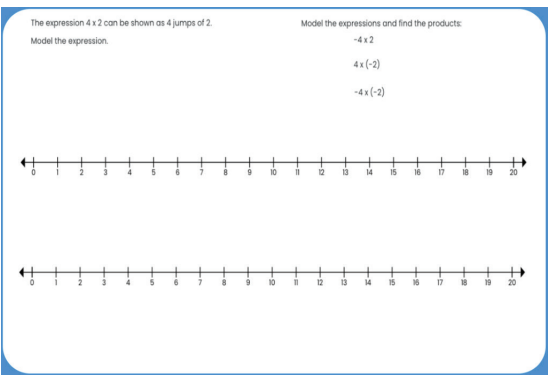
Spiral Review

Additional Vocabulary Support

Reteach to Build Understanding

Build Mathematical Literacy

Enrichment



Digital Manipulative Activity

Sustain Understanding and Fluency

Hands-On Games

C DL

Summit Strategy Students play a game to practice the skills covered throughout this topic. *Use anytime.*

Pyramid Tower Build expressions with rational numbers *Use anytime.*

Digital Games

D

Available only at Savvas Realize®.

Fluency Games Practice to achieve and maintain fluency.

Vocabulary Games Practice to acquire mathematical terminology. *Use anytime.*

Fluency

E DL

Fluency Practice Add, subtract, multiply, and divide integers.



Hands-On Game Board