

Connecticut Mathematics Model Curricula Alignment

Resource Name: [REVEAL MATH GRADE 8](#)

Alignment Grade 8				
Model Unit Name	Model Unit Standards	Resource Unit(s) Number	Resources Lessons	Pacing
<i>This is the title of the unit in the model curricula</i>	<i>These are the standards addressed in the unit</i>	<i>This is the unit(s) that aligns with the model unit from the resource</i>	<i>These are the lessons from the identified units that align to the standards within the model unit</i>	<i>This is the expected number of days for instruction</i>
Real Numbers	8.NS.A.1, 8.NS.A.2, 8.EE.A.1, 8.EE.A.2, 8.EE.A.3, 8.EE.A.4	Module 1: Exponents and Scientific Notation Module 2: Real Numbers Module 7: Triangles and the Pythagorean Theorem Module 10: Volume	Lesson 1-2: Multiply and Divide Monomials Lesson 1-3: Powers of Monomials Lesson 1-4: Zero and Negative Exponents Lesson 1-5: Scientific Notation Lesson 1-6: Compute with Scientific Notation Lesson 2-1: Terminating and Repeating Decimals Lesson 2-2: Roots Lesson 2-3: Real Numbers Lesson 2-4: Estimate Irrational Numbers	24 days

			Lesson 2-5: Compare and Order Real Numbers Lesson 7-3: The Pythagorean Theorem Lesson 10-4: Find Missing Dimensions	
Pythagorean Theorem	8.EE.A.2, 8.G.B.6, 8.G.B.7, 8.G.B.8	Module 1: Exponents and Scientific Notation Module 7: Triangles and the Pythagorean Theorem	Lesson 1-5: Scientific Notation Lesson 1-6: Compute with Scientific Notation Lesson 7-3: The Pythagorean Theorem Lesson 7-4: Converse of the Pythagorean Theorem Lesson 7-5: Distance on the Coordinate Plane	10 days
Congruence and Similarity	8.G.A.1, 8.G.A.2, 8.G.A.3, 8.G.A.4, 8.G.A.5	Module 7: Triangles and the Pythagorean Theorem Module 8: Transformations Module 9: Congruence and Similarity	Lesson 7-1: Angle Relationships and Parallel Lines Lesson 7-2: Angle Relationships and Triangles Lesson 8-1: Translations Lesson 8-2: Reflections Lesson 8-3: Rotations	24 days

			Lesson 9-1: Congruence and Transformations Lesson 9-2: Congruence and Corresponding Parts Lesson 9-3: Similarity and Transformations Lesson 9-4: Similarity and Corresponding Parts Lesson 9-5: Indirect Measurement	
Linear Relationships	8.EE.B.7, 8.EE.B.6, 8.EE.C.7, 8.F.A.1, 8.F.A.2, 8.F.A.3, 8.F.B.4, 8.F.B.5	Module 3: Solve Equations with Variables on Each Side Module 4: Linear Relationships with Slope Module 5: Functions Module 11: Scatter Plots and Two-Way Tables	Lesson 3-1: Solve Equations with Variables on Each Side Lesson 3-2: Write and Solve Equations with Variables on Each Side Lesson 3-3: Solve Multi-Step Equations Lesson 3-4: Write and Solve Multi-Step Equations Lesson 3-5: Determine the Number of Solutions Lesson 4-3: Similar Triangles and Slope Lesson 4-4: Direct Variation Lesson 4-5: Slope-Intercept Form	28 days

			Lesson 5-1: Identify Functions Lesson 5-2: Function Tables Lesson 5-3: Construct Linear Functions Lesson 5-4: Compare Functions Lesson 5-6: Qualitative Graphs Lesson 11-3: Equations for Lines of Fit	
Systems of Linear Relationships	8.EE.C.7, 8.EE.C.8, 8.F.A.2, 8.F.B.4	Module 3: Solve Equations with Variables on Each Side Module 5: Functions Module 6: Systems of Linear Equations Module 11: Scatter Plots and Two-Way Tables	Lesson 3-1: Solve Equations with Variables on Each Side Lesson 3-2: Write and Solve Equations with Variables on Each Side Lesson 3-3: Solve Multi-Step Equations Lesson 3-4: Write and Solve Multi-Step Equations Lesson 3-5: Determine the Number of Solutions Lesson 5-3: Construct Linear Functions Lesson 5-4: Compare Functions Lesson 6-1: Solve Systems of Equations by Graphing	30 days

			Lesson 6-2: Determine Number of Solutions Lesson 6-3: Solve Systems of Equations by Substitution Lesson 6-4: Solve Systems of Equations by Elimination Lesson 6-5: Write and Solve Systems of Equations Lesson 11-3: Equations for Lines of Fit	
Volume	8.G.C.9	Module 10: Volume	Lesson 10-1: Volume of Cylinders Lesson 10-2: Draw Lines of Fit Lesson 10-3: Equations for Lines of Fit Lesson 10-4: Two-Way Tables Lesson 10-5: Associations in Two-Way Tables	11 days
Patterns in Data	8.SP.A.1, 8.SP.A.2, 8.SP.A.3, 8.SP.A.4,	Module 11: Scatter Plots and Two-Way Tables	Lesson 11-1: Scatter Plots 3 Lesson 11-2: Draw Lines of Fit 2 Lesson 11-3: Equations for Lines of Fit Lesson 11-4: Two-Way Tables 1 Lesson 11-5: Associations in Two-Way Tables 3	11 days

Reveal Math® was designed based on a learning progression of mathematical content and connecting concepts across all grades and within each grade. A program scope and sequence is available in the Teacher Digital Center: Program Resources. In support of effective implementation and best practices, guiding principles of the instructional design & pedagogy, professional learning videos, and other program features can be found in the Teacher Digital Center: Program Resources.

Scope and Sequence			
If a district uses this resource to implement the state model curriculum for grade 8, the following scope and sequence should be followed to ensure alignment and attention to the progressions of mathematics.			
Unit Number/Title and Lessons	Lesson Objectives	# of days (assume 1 hour of instruction)	Number of weeks
Module 1: Exponents and Scientific Notation			
Lesson 1-1: Powers and Exponents	Students will write and evaluate expressions involving powers and exponents.	2	2 Weeks 1 Day
Lesson 1-2: Multiply and Divide Monomials	Students will use Laws of Exponents to multiply and divide monomials.	2	
Lesson 1-3: Powers of Monomials	Students will use Laws of Exponents to find powers of monomials.	2	
Lesson 1-4: Zero and Negative Exponents	Students will simplify expressions that have zero and negative exponents.	2	
Lesson 1-5: Scientific Notation	Students will write numbers in scientific notation.	2	
Lesson 1-6: Compute with Scientific Notation	Students will compute with numbers written in scientific notation.	1	
Module 2: Real Numbers			
Lesson 2-1: Terminating and Repeating Decimals	Students will convert rational numbers between decimal and fraction forms.	2	2 Weeks

Lesson 2-2: Roots	Students will find square and cube roots.	2	
Lesson 2-3: Real Numbers	Students will identify and describe sets of numbers in the real number system.	2	
Lesson 2-4: Estimate Irrational Numbers	Students will estimate irrational numbers.	2	
Lesson 2-5: Compare and Order Real Numbers	Students will compare and order numbers in the real number system.	2	
Module 3: Solve Equations with Variables on Each Side			
Lesson 3-1: Solve Equations with Variables on Each Side	Students will solve equations with variables on each side.	2	2 Weeks
Lesson 3-2: Write and Solve Equations with Variables on Each Side	Students will write and solve equations with variables on each side.	2	
Lesson 3-3: Solve Multi-Step Equations	Students will solve multi-step equations with variables on each side.	2	
Lesson 3-4: Write and Solve Multi-Step Equations	Students will write and solve multi-step equations with variables on each side.	2	
Lesson 3-5: Determine the Number of Solutions	Students will determine the number of solutions to an equation.	2	
Module 4: Linear Relationships and Slope			
Lesson 4-1: Proportional Relationships and Slope	Students will graph and compare proportional relationships, interpreting the unit rate as the slope of the line.	2	2 Weeks 3 Days
Lesson 4-2: Slope of a Line	Students will find the slope of a line from a graph, table, and using the formula.	3	
Lesson 4-3: Similar Triangles and Slope	Students will relate the slope of a line to similar triangles.	1	

Lesson 4-4: Direct Variation	Students will derive the equation $y = mx$ from graphs, tables, and verbal descriptions of proportional relationships.	2	
Lesson 4-5: Slope-Intercept Form	Students will write linear equations to represent relationships in the form $y = mx + b$.	3	
Lesson 4-6: Graph Linear Equations	Students will graph lines in slope-intercept form, vertical lines, and horizontal lines.	2	
Module 5: Functions			
Lesson 5-1: Identify Functions	Students will identify functions from mapping diagrams, tables, and graphs.	2	2 Weeks 2 Days
Lesson 5-2: Function Tables	Students will create function tables and graph functions.	2	
Lesson 5-3: Construct Linear Functions	Students will construct functions from graphs, tables, and verbal descriptions.	2	
Lesson 5-4: Compare Functions	Students will compare functions represented in different forms.	2	
Lesson 5-5: Nonlinear Functions	Students will identify nonlinear functions using tables, graphs, and equations.	2	
Lesson 5-6: Qualitative Graphs	Students will analyze and sketch qualitative graphs.	2	
Module 6: Systems of Linear Equations			
Lesson 6-1: Solve Systems of Equations by Graphing	Students will solve systems of linear equations by graphing.	3	2 Weeks 4 Days
Lesson 6-2: Determine Number of Solutions	Students will determine the number of solutions of a system of linear equations by analyzing the equations.	3	
Lesson 6-3: Solve Systems of Equations by Substitution	Students will solve systems of linear equations by using substitution.	3	

Lesson 6-4: Solve Systems of Equations by Elimination	Students will solve systems of linear equations by using elimination.	3	
Lesson 6-5: Write and Solve Systems of Equations	Students will write and solve systems of linear equations.	2	
Module 7: Triangles and the Pythagorean Theorem			
Lesson 7-1: Angle Relationships and Parallel Lines	Students will examine relationships of angles formed by parallel lines cut by a transversal.	3	2 Weeks 2 Days
Lesson 7-2: Angle Relationships and Triangles	Students will examine relationships among the angles in a triangle.	2	
Lesson 7-3: The Pythagorean Theorem	Students will solve problems using the Pythagorean Theorem.	3	
Lesson 7-4: Converse of the Pythagorean Theorem	Students will solve problems using the converse of the Pythagorean Theorem.	2	
Lesson 7-5: Distance on the Coordinate Plane	Students will find the distance between two points on the coordinate plane using the Pythagorean Theorem.	2	
Module 8: Transformations			
Lesson 8-1: Translations	Students will translate figures and describe translations on the coordinate plane.	3	2 Weeks 1 Day
Lesson 8-2: Reflections	Students will reflect figures and describe reflections on the coordinate plane.	2	
Lesson 8-3: Rotations	Students will rotate figures and describe rotations on the coordinate plane.	3	
Lesson 8-4: Dilations	Students will dilate figures and describe dilations on the coordinate plane.	3	
Module 9: Congruence and Similarity			
Lesson 9-1: Congruence and Transformations	Students will use a sequence of transformations to describe congruency between figures.	2	2 Weeks 1 Day

Lesson 9-2: Congruence and Corresponding Parts	Students will write congruence statements and find missing measures for congruent figures.	2	
Lesson 9-3: Similarity and Transformations	Students will use a sequence of transformations to describe similarity between figures.	2	
Lesson 9-4: Similarity and Corresponding Parts	Students will write similarity statements and find missing measures for similar figures.	3	
Lesson 9-5: Indirect Measurement	Students will solve problems involving similar triangles.	2	
Module 10: Volume			
Lesson 10-1: Volume of Cylinders	Students will find the volume of cylinders.	3	2 Weeks 2 Days
Lesson 10-2: Volume of Cones	Students will find the volume of cones.	3	
Lesson 10-3: Volume of Spheres	Students will find the volume of spheres and hemispheres.	2	
Lesson 10-4: Find Missing Dimensions	Students will use volume formulas to find missing dimensions in cylinders, cones, and spheres.	2	
Lesson 10-5: Volume of Composite Solids	Students will find the volume of composite solids.	2	
Module 11: Scatter Plots and Two-Way Tables			
Lesson 11-1: Scatter Plots	Students will construct and interpret scatter plots.	3	2 Weeks 1 Day
Lesson 11-2: Draw Lines of Fit	Students will informally draw lines that fit a set of data and use them to make conjectures.	2	
Lesson 11-3: Equations for Lines of Fit	Students will write the equations for lines that fit a set of data and use them to make conjectures.	2	
Lesson 11-4: Two-Way Tables	Students will construct two-way tables and find and interpret their relative frequencies.	1	

Lesson 11-5: Associations in Two-Way Tables	Students will determine if an association exists between categories in two-way tables.	3	
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Supports of Diversity, Equity and Inclusion

Please provide any information relative to supporting culturally responsive instruction, multi-language learners, and students with disabilities

Culturally Responsive Instruction | Reveal Math

Drawing from research, McGraw Hill understands there are a number of factors that support classroom equity and echo the tenets of culturally responsive practices: high academic expectations for all students; a socially and emotionally positive classroom; a safe school climate; authentic and rigorous tasks; inclusive, relevant, and meaningful content; open and accepting communication; drawing from students' strengths, knowledge, culture, and competence; critically and socially aware inquiry practices; and strong teaching and teacher professional support for equity and inclusion.

McGraw Hill is committed to publishing pedagogically sound, high-quality, instructional materials that are fair, unbiased, and that recognize the unique contributions of people of all races and cultures. *Reveal Math* prides itself on exceeding the requirements for equal opportunity and representation in its program. We believe that all children should be able to see themselves as doers of mathematics and that means showing students from a range of genders, ethnicities, cultural backgrounds, and with different disabilities. McGraw Hill is also committed to producing materials that are free from cultural, ethnic or gender bias. Utmost care was taken to ensure an antiracist, anti-biased, nonsexist, and nonstereotyping presentation in the production of this resource.

The program displays males and females from various ethnic backgrounds in all types of environments, avoiding stereotypes. It provides every student with access and opportunities to learn. Throughout *Reveal Math*, all types of students are portrayed in all types of environments, so students of all backgrounds will be able to relate to the text.

The focus on Social Emotional Learning also provides multiple opportunities for students and teachers to recognize and value differences between home cultures of students and the classroom. Each lesson has an SEL focus in the Math in Mindset that is seen as part of the Be Curious Moment and reflection at the end of the lesson. These were designed using the CASEL Core Competencies in SEL.

Reveal Math grades 6-12 displays males and females from various ethnic backgrounds in all types of environments, avoiding stereotypes. It provides every student with access and opportunities to learn. Throughout *Reveal Math*, all types of students are portrayed in all types of environments, so students of all backgrounds will be able to relate to the text.

Each module open with an **Ignite! Activity** designed to spark all students' interest and curiosity. The Ignite activity is one example of an activity that provides students with opportunities to discuss individual interests and experiences. Lesson images and word problems portray a variety of demographics and cultural background. Mindset Matters tips provide students with opportunities to understand beliefs and how those beliefs impact student behavior and learning. The Multilingual eGlossary provides mathematics vocabulary translated into 13 common world languages.

Cultural Connections

Module activities highlight various cultural contributions to mathematics and require students to use a source to do additional research on the culture or topic.

Cultural Connections

Prime Numbers

Prime numbers are counting numbers greater than 1 that have no divisors other than 1 and themselves. It is thought that the ancient Egyptians had some knowledge of the prime numbers. However, the earliest surviving records of the study of prime numbers come from the ancient Greeks in about 300 BCE. Mathematics have found that you may be able to use functions like $f(k) = k^2 - 79k + 1501$, where $k = 1, 2, 3, \dots$, to find prime numbers.

Use a Source Research to find out more about the history of prime numbers.

Prime	Composite
2	
3	
4	2 2
5	
6	2 3
7	
8	2 2 2
9	3 3
10	2 5
11	
12	2 2 2 2

To provide students with diverse perspectives, **Math History Minutes** highlight multicultural, global mathematics influencers, past and present, and describe how they impacted the world with their work and how different cultures provided a variety of contributions to the work.



Math History Minute

Graciano Ricalde Gamboa (1873–1942) was a Mexican mathematician who in 1910, achieved recognition for calculating the orbit of Halley's Comet. His precise calculations proved that the comet would not hit Earth, which was of great concern at the time. Halley's Comet follows a highly elliptical path and can be seen from Earth every 74–79 years.

Math History Minute

One of the oldest known forms of division is used by the Egyptians. For example, to divide 22 by 8, write multiplication sentences in which 8 is a factor. Find the numbers that create a sum of 22, the dividend. Because $16 + 4 + 2 = 22$, find the sum of the corresponding factors, $2 + \frac{1}{2} + \frac{1}{4}$, or $2\frac{3}{4}$. So, $22 \div 8 = 2\frac{3}{4}$.

1	8	$1 \times 8 = 8$
2	16	$2 \times 8 = 16$
$\frac{1}{2}$	4	$\frac{1}{2} \times 8 = 4$
$\frac{1}{4}$	2	$\frac{1}{4} \times 8 = 2$
$\frac{1}{8}$	1	$\frac{1}{8} \times 8 = 1$

Math History Minute

Early notations for negative numbers were used by the Chinese and Hindu mathematicians. The Chinese drew a diagonal stroke through the right-most non-zero digit to indicate a negative number and used red and black computing rods to indicate positive and negative values, respectively. The Hindu mathematicians placed a small circle above each negative value. Thus, 4 indicated -4 .



Math History Minute

Mathematician and astronomer **Muhammad al-Khwarizmi (around 780–850)** wrote the first known text in elementary algebra. The word *algebra* is derived from the word *al-jabr*, part of the title of this text. It means *reunion of broken parts* in Arabic. His texts were influential in bringing algebraic knowledge to Europe and were the first Arabic mathematics texts translated into Latin.

Additionally, the **Language Development Handbook**, Teacher Edition, includes Multicultural Teacher Tips throughout the handbook.

Please refer to the following link for further information on Equity and Cultural Responsiveness in *Reveal Math* 6-12:

[NA Reveal Math 6-12 Equity and Cultural Responsiveness](#)

Password: RevealCulturalResponsiveness

Multi-language learners and students with disabilities

Reveal Math addresses the needs for all students and a variety of tiered instructional resources are provided for remediation or enrichment. Each lesson includes a list of suggested **Differentiated** resources that is based on assessment data from the **Checks** after each **Example**. Remediation resources (**Review** resources) target prerequisite skill knowledge. Leveled **Questions for Mathematical Discourse** are also included for every Example in the Teacher Edition. The supplemental materials differ in K-5 and 6-12 based on the different nature of these classrooms and age appropriateness for students.

Reveal Math 6-12

Resources range from Remediation (**Review** resources) that target prerequisite skill knowledge to Enrichment (**Extension** resources) that extend student knowledge on the lesson topic. Each module has a readiness diagnostic and based on that, the teacher can use the embedded resources to support students in their classroom.

- The **Review Learn** and the **Review Example** are available to support students in acquiring pre-requisite skills.
- The **Take Another Look** Mini Lessons support students in remediation for the current topics under review.
- The **Personal Tutors** are available to support student understanding
- Online **Extension** activities are included for many lessons. In these activities, students extend their understanding of mathematical topics related to the lesson.
- The Teacher Edition includes **Enrichment Activity** suggestions at point-of-use for students who would benefit from a challenge or opportunity to extend their learning based on the checks in the lesson.
- In the Teacher Edition, **Questions for Mathematical Discourse** are included for each example to promote high expectations, critical thinking skills, and class discussion. On-level (OL) questions and beyond-level (BL) questions are appropriate for all students to answer, while approaching-level (AL) questions are included if students need more scaffolded support.
- The differentiated practice and assessment gives the teacher opportunities to support individual student needs.
- The Quick Review Handbook is included and targeted at point of use.
- A digital **Multilingual eGlossary** is provided that contains mathematics terms translated into 13 languages.

The Teacher Edition and the online resources support teacher guidance on which supports to use at the module and lesson levels.

1 CONCEPTUAL UNDERSTANDING

2 FLUENCY

3 APPLICATION

7.NS.A.3, 7.EE.B.4.A

Learn Write One-Step Equations

Objective
Students will learn how to model a real-world problem with a one-step equation.

Teaching Notes
3.OA.4

Students will learn that they can model many real-world situations with equations. Have them select each flashcard to view the steps for writing an equation to represent a real-world problem. An important part of modeling a real-world problem with an equation is to define the variable. Remind students that the letter x is used often as a variable in algebra, but any letter can be used. In real-world situations, the first letter of the unknown quantity that the variable is representing is often used. For example, t is often used to represent temperature. Ask students if there are any other equations that can be used to model the real-world problem presented in the Learn. Sample responses can include $118 - t = 158$ and $t = 118 + 158$.

DIFFERENTIATE

Enrichment Activity BL

To further students' understanding of the importance of defining a variable, remind them that the equation describes the relationship between the quantities in the problem. If it is not clearly stated what the variable represents, then it can be difficult to interpret the solution in the context of the problem. Have students work in pairs to complete the following activity:

- Write a real-world problem that involves one operation in order to solve it.
- Model the problem with an equation, but do not clearly state what the variable represents.
- Trade problems and equations with another pair. Have them solve the equation. Then have each pair interpret the solution. If they struggle to do so, this may be because the variable was not clearly defined.

Learn Write One-Step Equations

Many real-world situations can be represented with equations. Consider the following problem: The highest recorded temperature in Warsaw, Missouri, is 118°F Fahrenheit. This is 158° greater than the city's lowest recorded temperature. What is the lowest recorded temperature?

The steps below will model the problem with an equation to represent the real-world situation.

Write:
Describe the unknown(s) of the problem:
The highest recorded temperature is 118° greater than the lowest recorded temperature.
Define:
Define the variable to represent the unknown quantity:
Let t represent the lowest recorded temperature.
Equation:
Translate the word problem into algebraic equation:
 $118 = 158 + t$

Choosing a variable and equation for the variable to represent in an equation is called defining a variable.

Pause and Reflect
Did you struggle with any of the concepts in the Learn? How do you feel when you struggle with math concepts? What steps can you take to understand the concept?
See students' observations.

Interactive Presentation

On Slide 1, students use Flashcards to learn about the steps for modeling a real-world problem with a one-step equation.

Lesson 6-4 • Write and Solve One-Step Equations 285

Course 2 Teacher Edition, pg. 285: The **Differentiate** feature includes a **Beyond-Level (BL) Enrichment Activity**.

The **Extension** activities can be assigned to students who finish early or who need an extra challenge. These activities can be assigned to individual students, pairs of students, or a small group.

1. CONCEPTUAL UNDERSTANDING

2. FLUENCY

3. APPLICATION

7.RP.A.1

Example 1 Find Unit Rates

Objective

Students will find a unit rate in which one of the given quantities is a fraction.

Teaching the Mathematical Practices

2 Reason Abstractly and Quantitatively As students discuss the *Talk About It!* question, encourage them to use reasoning to determine that Tia can paint more than 36 square feet per hour, because she can paint 36 square feet in less than an hour.

7 Look For and Make Use of Structure In Method 4, encourage students to understand that the structure of a complex fraction means that the numerator, the denominator, or both must be fractions.

Questions for Mathematical Discourse

SLIDE 2

AL Which number represents the number of square feet painted? the time, in hours? $36; \frac{3}{4}$

OL How does the bar diagram represent the ratio? The bar diagram uses two bars to represent the two quantities 36 square feet and $\frac{3}{4}$ hour. The bars are the same length, with the same number of sections, to show that the two quantities are in a ratio.

BL What would the ratio $\frac{3}{36}$ represent as a unit rate? the time, in hours, to paint one square foot

SLIDE 3

AL Where on the double number line is the ratio $36 : \frac{3}{4}$ represented?

Both number lines begin at 0. The quantities 36 and $\frac{3}{4}$ are located the same distance from their respective 0s.

OL How does this double number line compare to the double bar diagram from Method 1? Both models show the ratio $36 : \frac{3}{4}$ by showing the quantities 36 and $\frac{3}{4}$ as the same location on each bar diagram.

BL How many square feet can Tia paint in three hours?

144 square feet

(continued on next page)

Example 1 Find Unit Rates

Tia is painting one side of her shed. She paints 36 square feet in $\frac{3}{4}$ of an hour.

At this rate, how many square feet can she paint each hour?

You know that $\frac{3}{4}$ of an hour is $\frac{3}{4}$ of an hour. So, Tia's rate is 36 square feet per $\frac{3}{4}$ hour. You need to find the unit rate, the number of square feet she can paint per 1 hour.

Method 1 Use a bar diagram.

Draw two bars to model the ratio $36 : \frac{3}{4}$. Divide each bar into four sections, because $\frac{3}{4}$ is a multiple of $\frac{1}{4}$, and there are 4 sections of $\frac{1}{4}$ hour in 1 hour.

To find the unit rate, first find the value of each section in the bar representing square feet. Because three sections have a value of 36 square feet, each section has a value of $36 \div 3 = 12$ square feet. Because $4(12) = 48$, the unit rate is 48 square feet per hour.

Method 2 Use a double number line.

The top number line represents the number of hours. The bottom number line represents the number of square feet. Mark and label the ratio $36 : \frac{3}{4}$.

Mark and label four equal increments of $\frac{1}{4}$ on the top number line. Mark the same number of equal increments on the bottom number line.

Each increment on the bottom number line represents 12 square feet. Because $4(12) = 48$, the unit rate is 48 square feet per hour.

(continued on next page)

Think About It!

Why is the unit rate equal to $\frac{3}{4}$ of an hour?

Sample answer: 48 minutes is a multiple of 15 minutes. 48 minutes is equal to three 15-minute periods. There are four 15-minute periods in this hour.

Talk About It!

Use mathematical reasoning to explain why the unit rate is 48 square feet per hour.

Sample answer: Because Tia can paint 36 square feet in less than one hour, she will be able to paint more than 36 square feet in one full hour.

Interactive Presentation

Method 1 Use a bar diagram.

Draw two bars to model the ratio $36 : \frac{3}{4}$. Divide each bar into four sections, because $\frac{3}{4}$ is a multiple of $\frac{1}{4}$, and there are 4 sections of $\frac{1}{4}$ hour in 1 hour.

To find the unit rate, first find the value of each section in the bar representing square feet. Because three sections have a value of 36 square feet, each section has a value of $36 \div 3 = 12$ square feet. Because $4(12) = 48$, the unit rate is 48 square feet per hour.

Example 1 Find Unit Rates, Slide 2 of 5

DRAG & DROP

On Slide 2, students drag the quantities to label the bar diagram.

CLICK

On Slide 3, students move through the steps to see how a double number line can be used to solve the problem.

CHECK

Students complete the Check exercise online to determine if they are ready to move on.

Course 2 Teacher Edition, pg. 5

A core instructional belief of McGraw Hill's *Reveal Math* K-12 is that the learning of mathematics requires a focus on language and the language of mathematics. To support students' development of the language of mathematics, the program includes rich support for language development, for both native and non-native speakers of English.

Each lesson features a language objective in addition to a content and SEL (social and emotional learning) objective to highlight the importance of language development in the program. In addition, these features provide support and scaffolds for building students' mathematical language proficiency:

- **Language of Math (LOM)** strategies and features focus on mathematical and academic terms that students need to understand to be successful.
- **Math Language Development** support at the unit level offer support and strategies that teachers can use to help students build proficiency with language skills.
- **Math Language Routines (MLR)** found in each lesson are specifically designed to help English language learners build fluency with math language. These routines were developed by a team of educators and researchers at Stanford Graduate School of Education.
- **English Language Learner Supports** also found in each lesson provide scaffolded support at three levels of proficiency: Entering/Emerging, Developing/Expanding, and Bridging/Reaching. These three levels align to the WIDA levels: Entering, Beginning, Developing, Expanding, Bridging, and Reaching.

The Teacher Edition also has specific pedagogical suggestions for teachers based on the WIDA levels. These are included both at the Unit/Module and Lesson Levels.

There are robust Spanish resources for *Reveal Math*. There is a Spanish translation of the Student Edition and other resources. The Student Edition includes support for all students in vocabulary development, notetaking, and writing skills using word cards, vocabulary squares, three-column charts, definition maps, concept webs, and other graphic organizers, along with English/Spanish cognates in Dinah Zike's Visual Kinesthetic Vocabulary®.

As mentioned above, a course-level digital and print **Glossary** is provided with words translated into English and Spanish. For grades 6-12, a digital **Multilingual eGlossary** is provided that contains mathematics terms translated into 13 languages. Also, online are Math Replay Videos that provide additional support and review opportunities for concepts presented in the text.