



2016 – 2017

# Eureka Math/EngageNY Learning Pathways

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# A Story of Units

## Grade 3

# A Story of Units: Grade 3



## INTRODUCTION: Grade 3

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
	Visualizing Whole Numbers Visualizing Place Value Visualizing Addition Visualizing Subtraction	Introduction

## MODULE 1: Properties of Multiplication and Division and Solving Problems with Units of 2-5 and 10

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Multiplication and the Meaning of the Factors	Developing Fluency Using 2 as a Factor	✓ 3.OA.1
B: Division as an Unknown Factor Problem	Developing Fluency Using 5 or 10 as a Factor	✓ 3.OA.2
C: Multiplication Using Units of 2 and 3	Using Halves and Doubles to Solve Multiplication Problems	✓ 3.OA.3 *
D: Division Using Units of 2 and 3	Concept of Multiplication - Grouping	✓ 3.OA.4
E: Multiplication and Division Using Units of 4	Concept of Multiplication - Word Problems	✓ 3.OA.5
F: Distributive Property and Problem Solving Using Units of 2–5 and 10	Concept of Multiplication - Arrays	✓ 3.OA.6
	Concept of Division	✓ 3.OA.7
	Interpreting Division Problems	
	Constructing Division Problems	
	Relationship Between Multiplication and Division	
	Multiplication and Division Fact Families	
	Solving Multiplication and Division Equations	
	Division as an Unknown-Factor Problem	

# A Story of Units: Grade 3



## MODULE 2: Place Value and Problem Solving with Units of Measure

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Time Measurement and Problem Solving	Adding and Subtracting Time	✓ 3.NBT.1
B: Measuring Weight and Liquid Volume in Metric Units	Reasoning About Place Value and Rounding	3.NBT.2
C: Rounding to the Nearest Ten and Hundred	Rounding the to the Nearest Ten and Hundred	✓ 3.MD.1
D: Two- and Three-Digit Measurement Addition Using the Standard Algorithm		3.MD.2
E: Two- and Three-Digit Measurement Subtraction Using the Standard Algorithm		

## MODULE 3: Multiplication and Division with Units of 0, 1, 6-9, and Multiples of 10

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: The Properties of Multiplication and Division	Properties of Addition and Multiplication	✓ 3.NBT.3
B: Multiplication and Division Using Units of 6 and 7	Multiplication and Division Word Problems - Visual Models	✓ 3.OA.3
C: Multiplication and Division Using Units up to 8	Multiplication and Division Word Problems - Equations	✓ 3.OA.4 *
D: Multiplication and Division Using Units of 9	Multiplication and Division Word Problems - Solutions	✓ 3.OA.5
E: Analysis of Patterns and Problem Solving Including Units of 0 and 1	Multiplying by Multiples of Ten	✓ 3.OA.7 *
F: Multiplication of Single-Digit Factors and Multiples of 10	Additive and Multiplicative Patterns	✓ 3.OA.8 *
		✓ 3.OA.9



## MODULE 4: Multiplication and Area

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Foundations for Understanding Area	Unit Squares	✓ 3.MD.5
B: Concepts of Area Measurement	Concept of Area	✓ 3.MD.6
C: Arithmetic Properties Using Area Models	Area of Rectangles	✓ 3.MD.7
D: Applications of Area Using Side Lengths of Figures	Recognizing Area as Additive	
	Area of Basic Composite Figures	
	Using Visual Models to Understand the Distributive Property	

## MODULE 5: Fractions as Numbers on the Number Line

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Partitioning a Whole into Equal Parts	Understanding Fractions - Equal Areas	✓ 3.NF.1
B: Unit Fractions and Their Relation to the Whole	Understanding Fractions - Notation	✓ 3.NF.2
C: Comparing Unit Fractions and Specifying the Whole	Unit Fractions on the Number Line	✓ 3.NF.3
D: Fractions on the Number Line	Fractions on the Number Line	✓ 3.G.2
E: Equivalent Fractions	Modeling Equivalent Fractions with Number Lines	
F: Comparison, Order, and Size of Fractions	Visual Models of Equivalent Fractions	
	Whole Numbers as Fractions	
	Whole Numbers as Fractions on the Number Line	
	Comparing Fractions with the Same Numerator or Denominator	
	Recognizing Valid Fraction Comparisons I	

## MODULE 6: Collecting and Displaying Data

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Generate and Analyze Categorical Data	Introduction to Data Displays	✓ 3.MD.3
B: Generate and Analyze Measurement Data	Line Plots and Length	✓ 3.MD.4

## MODULE 7: Geometry and Measurement Word Problems

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Solving Word Problems	<b>Solving Two-Step Word Problems</b>	✓ <b>3.MD.4</b>
B: Attributes of Two-Dimensional Figures	<b>Modeling and Solving Two-Step Word Problems</b>	✓ <b>3.MD.8</b>
C: Problem Solving with Perimeter	<b>Classifying Quadrilaterals I</b>	✓ <b>3.G.1</b>
D: Recording Perimeter and Area Data on Line Plots	<b>Perimeter</b>	
E: Problem Solving with Perimeter and Area	<b>Line Plots and Length</b>	

# A Story of Units

Grade 4



# A Story of Units: Grade 4



## INTRODUCTION: Grade 4

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
	Visualizing Place Value Relationships Visualizing Rounding Visualizing Addition and Subtraction Visualizing Multiplication and Division	Introduction

## MODULE 1: Place Value, Rounding, and Algorithms for Addition and Subtraction

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Place Value of Multi-Digit Whole Numbers	Place Value Concepts	✓ 4.OA.1
B: Comparing Multi-Digit Whole Numbers	Using Place Value Concepts to Compare Whole Numbers	✓ 4.NBT.1
	Understanding Place Value Relationships	✓ 4.NBT.2
C: Rounding Multi-Digit Whole Numbers	Rounding Whole Numbers	✓ 4.NBT.3
	Using Rounding in Problem Solving	
D: Multi-Digit Whole Number Addition	Adding Whole Numbers	✓ 4.OA.3 *
E: Multi-Digit Whole Number Subtraction	Adding and Subtracting with the Standard Algorithm	✓ 4.NBT.1 *
F: Addition and Subtraction Word Problems		✓ 4.NBT.2 *
		✓ 4.NBT.4

## MODULE 2: Unit Conversions and Problem Solving with Metric Measurement

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Metric Unit Conversions	Units of Measure - Customary	✓ 4.MD.1
B: Application of Metric Unit Conversions	Units of Measure - Metric	4.MD.2

## MODULE 3: Multi-digit Multiplication and Division

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Multiplicative Comparison Word Problems B: Multiplication by 10, 100, and 1,000	Multiplication as a Comparison - Equations Multiplication as a Comparison - Word Problems Area and Perimeter of Rectangles	✓ 4.OA.1 ✓ 4.OA.2 ✓ 4.OA.3 ✓ 4.MD.3 * ✓ 4.NBT.1 * ✓ 4.NBT.5 *
C: Multiplication of up to Four Digits by Single-Digit Numbers	Multiplying Whole Numbers	✓ 4.OA.2 * ✓ 4.NBT.1 * ✓ 4.NBT.5
D: Multiplication Word Problems	Estimating Solutions to Multistep Word Problems	✓ 4.OA.1 * ✓ 4.OA.2 * ✓ 4.OA.3 ✓ 4.NBT.5 *
E: Division of Tens and Ones with Successive Remainders	Dividing Whole Numbers - One-digit Divisors Interpreting Remainders	✓ 4.OA.3 ✓ 4.NBT.6
F: Reasoning with Divisibility	Factors Relating Factors and Multiples I Relating Factors and Multiples II	✓ 4.OA.4
G: Division of Thousands, Hundreds, Tens, and Ones	Dividing by Multiples of Ten	✓ 4.OA.3 * ✓ 4.NBT.1 * ✓ 4.NBT.6
H: Multiplication of Two-Digit by Two-Digit Numbers	Multiplying Two-digit Numbers by Two-digit Numbers	✓ 4.OA.3 * ✓ 4.NBT.5 ✓ 4.MD.3 *

## MODULE 4: Angle Measure and Plane Figures

<i>Eureka Math/EngageNY Topic</i>	<i>Imagine Math Lesson</i>	<i>CCSS Addressed</i>
A: Lines and Angles	Identifying and Classifying Lines, Rays, and Segments	✓ 4.G.1
B: Angle Measurement	Identifying and Comparing Angles Angles	✓ 4.MD.5
C: Problem Solving with the Addition of Angle Measures		✓ 4.MD.6 ✓ 4.MD.7
D: Two-Dimensional Figures and Symmetry	Classifying Triangles Classifying Quadrilateral II Symmetry	✓ 4.G.1 ✓ 4.G.2 ✓ 4.G.3

## MODULE 5: Fraction Equivalence, Ordering, and Operations

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Decomposition and Fraction Equivalence B: Fraction Equivalence Using Multiplication and Division	Modeling Equivalent Fractions Generating Equivalent Fractions Reducing Fractions	✓ 4.NF.1 ✓ 4.NF.3a * ✓ 4.NF.3b * ✓ 4.NF.4a *
C: Fraction Comparison	Comparing Fractions - Visual Models Comparing Fractions with Different Numerators and Different Denominators Recognizing Valid Fraction Comparisons II	✓ 4.NF.2
D: Fraction Addition and Subtraction	Adding and Subtracting Fractions with Like Denominators Adding and Subtracting Fractions with Like Denominators in Real-World Situations	✓ 4.NF.1 * ✓ 4.NF.3a ✓ 4.NF.3d 4.MD.2
E: Extending Fraction Equivalence to Fractions Greater than 1	Decomposing Fractions and Mixed Numbers Writing Fractions as Mixed Numbers and Mixed Numbers as Fractions Understanding Fractions - Relationship Between Numerator and Denominator	✓ 4.NF.1 ✓ 4.NF.2 * ✓ 4.NF.3 ✓ 4.NF.4a * ✓ 4.NBT.6 * 4.MD.4
F: Addition and Subtraction of Fractions by Decomposition	Word Problems with Fractions and Mixed Numbers - Visual Models Word Problems with Fractions and Mixed Numbers - Estimation Adding and Subtracting Mixed Numbers with Like Denominators - Conceptual Strategies Adding and Subtracting Mixed Numbers with Like Denominators	✓ 4.NF.3c 4.MD.2
G: Repeated Addition of Fractions as Multiplication	Multiplying Unit Fractions by Whole Numbers Multiplying Fractions by Whole Numbers Solving Word Problems with Multiplication of Fractions by Whole Numbers	✓ 4.OA.2 ✓ 4.NF.4 4.MD.2 4.MD.4
H: Exploring a Fraction Pattern	Generating and Describing Number Patterns	✓ 4.OA.5



## MODULE 6: Decimal Fractions

<i>Eureka Math/EngageNY Topic</i>	<i>Imagine Math Lesson</i>	<i>CCSS Addressed</i>
A: Exploration of Tenths B: Tenths and Hundredths	Understanding Fractions with Denominators of 10 and 100 Adding Fractions with Denominators of 10 and 100 Comparing Decimal Fractions Comparing and Ordering Decimal Fractions Decimal Notation I Decimal Notation II Decimals to Hundredths	✓ 4.NBT.1 * ✓ 4.NF.1 * ✓ 4.NF.5 ✓ 4.NF.6 ✓ 4.NF.7 ✓ 4.MD.1 *
C: Decimal Comparison	Introduction to Comparing Decimals to Hundredths Comparing Decimals to Hundredths Recognizing Valid Decimal Comparisons	✓ 4.MD.1 * 4.MD.2 ✓ 4.NF.7
E: Addition with Tenths and Hundredths	Fraction and Decimal Equivalents Comparing Fractions and Decimals	✓ 4.NF.3c * ✓ 4.NF.5 * ✓ 4.NF.6 ✓ 4.MD.1 *
F: Money Amount as Decimal Numbers	Imagine Math currently teaches money and decimals in the 5th grade as part of a lesson covering the addition and subtraction of decimals in real-world situations.	✓ 4.NF.5 * ✓ 4.NF.6 * 4.MD.2

## MODULE 7: Exploring Measurement with Multiplication

<i>Eureka Math/EngageNY Topic</i>	<i>Imagine Math Lesson</i>	<i>CCSS Addressed</i>
A: Measurement Conversion Tables B: Problem Solving with Measurement C: Investigation of Measurements Expressed as Mixed Numbers	Fraction and Decimal Equivalents Comparing Fractions and Decimals	✓ 4.OA.1 * ✓ 4.OA.2 * ✓ 4.OA.3 * ✓ 4.NBT.5 * ✓ 4.NBT.6 * ✓ 4.MD.1 4.MD.2

# A Story of Units

Grade 5

# A Story of Units: Grade 5



## INTRODUCTION: Grade 5

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
	Operations with Whole Numbers - Mixed Practice	Review

## MODULE 1: Place Value and Decimal Fractions

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Multiplicative Patterns on the Place Value Chart	Understanding Place Value Relationships Place Value Relationships Within Whole Numbers and Decimals Multiplying by Powers of Ten Multiplying and Dividing by Powers of Ten	✓ 5.NBT.1 ✓ 5.NBT.2 5.MD.1
B: Decimal Fractions and Place Value Patterns	Decimals To Thousandths Comparing Fractions and Decimals Comparing Decimals to Thousandths	✓ 5.NBT.3
C: Place Value and Rounding Decimal Fractions	Rounding Decimals to the Nearest Tenth and Hundredth Reasoning About Rounding Decimals	✓ 5.NBT.4
D: Adding and Subtracting Decimals	Adding and Subtracting Decimals	✓ 5.NBT.2 * ✓ 5.NBT.3 * ✓ 5.NBT.7
E: Multiplying Decimals	Multiplying Decimals to Hundredths	✓ 5.NBT.2 * ✓ 5.NBT.3 * ✓ 5.NBT.7
F: Dividing Decimals	Dividing Decimals to Hundredths	✓ 5.NBT.3 * ✓ 5.NBT.7

# A Story of Units: Grade 5



## MODULE 2: Multi-digit Whole Number and Decimal Fraction Operations

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Mental Strategies for Multi-Digit Whole Number Multiplication	Multiplying by Powers of Ten Evaluating Simple Expressions	✓ 5.OA.1 ✓ 5.NBT.1 * ✓ 5.NBT.2
B: The Standard Algorithm for Multi-Digit Whole Number Multiplication	Multiplying Whole Numbers - Standard Algorithm	✓ 5.OA.1 * ✓ 5.OA.2 * ✓ 5.NBT.5
C: Decimal Multi-Digit Multiplication G: Partial Quotients and Multi-Digit Decimal Division	Using Reasoning and Estimation to Calculate with Decimals	✓ 5.OA.1 * ✓ 5.OA.2 * ✓ 5.NBT.1 * ✓ 5.NBT.2 * ✓ 5.NBT.7
D: Measurement Word Problems with Whole Number and Decimal Multiplication H: Measurement Word Problems with Multi-Digit Division	Adding and Subtracting Decimals in Real-World Situation Calculating with Decimals	✓ 5.NBT.1 * ✓ 5.NBT.2 * ✓ 5.NBT.5 * ✓ 5.NBT.6 * ✓ 5.NBT.7 5.MD.1
E: Mental Strategies for Multi-Digit Whole Number Division F: Partial Quotients and Multi-Digit Whole Number Division	Dividing Whole Numbers - Two Digit Divisors	✓ 5.NBT.1 * ✓ 5.NBT.2 * ✓ 5.NBT.6



## MODULE 3: Addition and Subtraction of Fractions

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Equivalent Fractions	<b>Modeling Equivalent Fractions</b> <b>Generating Equivalent Fractions</b> <b>Understanding Fractions - Relationship Between Numerator and Denominator</b>	✓ 4.NF.1 ✓ 4.NF.3c ✓ 4.NF.3d
B: Making Like Units Pictorially C: Making Like Units Numerically	<b>Adding Fractions</b> <b>Subtracting Fractions</b> <b>Adding and Subtracting Fractions</b> <b>Adding and Subtracting Fractions - Multistep Word Problems</b>	✓ 5.NF.1 ✓ 5.NF.2
D: Further Applications	<b>Adding Fractions - Estimation Strategies</b> <b>Subtracting Fractions - Estimation Strategies</b>	✓ 5.NF.1* ✓ 5.NF.2

## MODULE 4: Multiplication and Division of Fractions and Decimal Fractions

<i>Eureka Math/EngageNY Topic</i>	<i>Imagine Math Lesson</i>	<i>CCSS Addressed</i>
A: Line Plots of Fraction Measurements	Line Plots	✓ 5.MD.2
B: Fractions as Division	Understanding Fractions as Division	✓ 5.NF.3 ✓ 5.OA.1 * ✓ 5.OA.2 * ✓ 5.NF.4a ✓ 5.NF.6 5.MD.1
C: Multiplication of a Whole Number by a Fraction D: Fraction Expressions and Word Problems	Multiplying Fractions by Whole Numbers to Solve Multistep Problems	✓ 5.OA.1 * ✓ 5.OA.2 * ✓ 5.NF.4a ✓ 5.NF.6 5.MD.1
E: Multiplication of a Fraction by a Fraction F: Multiplication with Fractions and Decimals as Scaling and Word Problems	Multiplying Unit Fractions by Fractions and Understanding Multiplication as Scaling Multiplying Fractions by Fractions Fraction and Decimal Equivalents	✓ 5.NBT.7 * ✓ 5.NF.4a 5.NF.4b 5.NF.5 ✓ 5.NF.6 * 5.MD.1
G: Division of Fractions and Decimal Fractions	Dividing Unit Fractions by Whole Numbers Dividing Whole Numbers by Unit Fractions	✓ 5.OA.1 * ✓ 5.NBT.7 * ✓ 5.NF.7
H: Interpretation of Numerical Expressions	Evaluating Simple Expressions Writing Simple Expressions Writing and Interpreting Simple Expressions	✓ 5.OA.1 ✓ 5.OA.2

# A Story of Units: Grade 5



## MODULE 5: Addition and Multiplication with Volume and Area

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Concepts of Volume	Volume of Rectangular Prisms I	✓ 5.MD.3 ✓ 5.MD.4
B: Volume and the Operations of Multiplication and Addition	Volume of Rectangular Prisms II	✓ 5.MD.3 * ✓ 5.MD.5
C: Area of Rectangular Figures with Fractional Side Lengths	Multiplying with Fractions and Mixed Numbers	✓ 5.NF.4b * ✓ 5.NF.6
D: Drawing, Analysis, and Classification of Two-Dimensional Shapes	Classifying Quadrilaterals II Classifying 2-Dimensional Figures Classifying Triangles	✓ 5.G.3 ✓ 5.G.4

## MODULE 6: Problem Solving with the Coordinate Plane

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Coordinate Systems	Introduction to the Coordinate Plane	✓ 5.G.1
B: Patterns in the Coordinate Plane and Graphing Number Patterns from Rules	Introduction to Scatter Plots	✓ 5.OA.2 5.OA.3 ✓ 5.G.1 *
C: Drawing Figures in the Coordinate Plane	n/a	✓ 5.G.1 * ✓ 5.G.2 *
D: Problem Solving in the Coordinate Plane	Representing Real-World Quantities in the First Quadrant	5.OA.3 ✓ 5.G.2 *
E: Multi-Step Word Problems	Adding and Subtracting Fractions - Multistep Word Problems Multiplying Fractions by Whole Numbers to Solve Multistep Problems	✓ 5.NF.2 ✓ 5.NF.3 * ✓ 5.NF.6 ✓ 5.NF.7c * 5.MD.1 ✓ 5.MD.5 * ✓ 5.G.2 *

# A Story of Ratios

Grade 6



# A Story of Ratios: Grade 6



## MODULE 1: Ratios and Unit Rates

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Representing and Reasoning About Ratios	Identifying Ratio Ratios Concept of Ratios and Rates	✓ 6.RP.1 ✓ 6.RP.3a
B: Collections of Equivalent Ratios	Using Ratios to Solve Problems	✓ 6.RP.3a
C: Unit Rates	Identifying Unit Rates Solving Problems with Unit Rates Converting Units of Measure I Converting Units of Measure II Distance, Rate, and Time	✓ 6.RP.2 ✓ 6.RP.3b ✓ 6.RP.3d
D: Percent	Percent Concepts Reasoning with Percents Calculations with Percent	✓ 6.RP.3c

## MODULE 2: Arithmetic Operations Including Division of Fractions

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Arithmetic Operations Including Dividing by a Fraction	Using the Relationship Between Multiplication and Division to Divide Fractions Dividing Fractions by Fractions Using Division of Fractions to Represent and Solve Problems Operations with Fractions - Mixed Practice	✓ 6.NS.1
B: Multi-Digit Decimal Operations-Adding, Subtracting, and Multiplying C: Dividing Whole Numbers and Decimals	Dividing Whole Numbers - Standard Algorithm Adding and Subtracting Decimals Adding and Subtracting Decimals in Real-World Situations Using Reasoning and Estimation to Calculate with Decimals Calculating with Decimals	✓ 6.NS.2 ✓ 6.NS.3
D: Number Theory - Thinking Logically About Multiplicative Arithmetic	Greatest Common Factor Greatest Common Factor - Applications Least Common Multiple	✓ 6.NS.4

# A Story of Ratios: Grade 6



## MODULE 3: Rational Numbers

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Understanding Positive and Negative Numbers on the Number Line	Integer Concepts Integer Concepts with a Number Line	✓ 6.NS.5 ✓ 6.NS.6a ✓ 6.NS.6c
B: Order and Absolute Value	Integers in the Coordinate Plane I Integers in the Coordinate Plane II	✓ 6.NS.6b ✓ 6.NS.6c
C: Rational Numbers and the Coordinate Plane	Comparing Rational Numbers I Comparing Rational Numbers II Rational Numbers in the Coordinate Plane I Rational Numbers in the Coordinate Plane II Absolute Value I Absolute Value II	✓ 6.NS.7 ✓ 6.NS.8

## MODULE 4: Expressions and Equations

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Relationships of the Operations	Identifying and Generating Equivalent Expressions	✓ 6.EE.1
B: Special Notations of Operations	Evaluating Simple Expressions	✓ 6.EE.2c
C: Replacing Letters and Numbers	Evaluating Expressions with Two Operations Understanding Exponents Evaluating Expressions and Equations with Exponents	✓ 6.EE.3 ✓ 6.EE.4
D: Expanding, Factoring, and Distributing Expressions	Evaluating Expressions with Real Numbers Evaluating Expressions with the Distributive Property	✓ 6.EE.2a ✓ 6.EE.2b
E: Expressing Operations in Algebraic Form	Using the Distributive Property to Represent Real-World Situations	✓ 6.EE.2c *
F: Writing and Evaluating Expressions and Formulas	Introduction to the Language of Algebra Combining Like Terms	✓ 6.EE.3 ✓ 6.EE.4 ✓ 6.EE.6
G: Solving Equations	Reasoning About One-Step Equations	✓ 6.EE.5
H: Applications of Equations	Writing and Solving One-Step Equations Independent and Dependent Quantities Introduction to the Language of Algebra Introduction to Solving Word Problems with Algebra Concept of Inequalities	✓ 6.EE.6 ✓ 6.EE.7 ✓ 6.EE.8 ✓ 6.EE.9

# A Story of Ratios: Grade 6



## MODULE 5: Area, Surface Area, and Volume Problems

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Area of Triangles, Quadrilaterals, and Polygons	Area of Parallelograms Area of Triangles Area of Trapezoids and Composite Figures	✓ 6.G.1
B: Polygons on the Coordinate Plane	Distance on the Coordinate Plane I Distance on the Coordinate Plane II	✓ 6.G.3
C: Volume of Right Rectangular Prisms D: Nets and Surface Area	Surface Area and Volume of Rectangular Prisms	✓ 6.G.2 ✓ 6.G.4

## MODULE 6: Statistics

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Understanding Distributions	Data Analysis Measures of Spread - Range Measures of Spread - Median Measures of Center - Mean Line Plots Bar Graphs and Histograms Circle Graphs Stem-and-Leaf Plots	✓ 6.SP.1 ✓ 6.SP.2 ✓ 6.SP.4 ✓ 6.SP.5b *
B: Summarizing a Distribution that is Approximately Symmetric Using the Mean and Mean Absolute Deviation C: Summarizing a Distribution that is Skewed Using the Median and the Interquartile Range D: Summarizing and Describing Distributions	Understanding the Effects of Outliers on Mean and Median Deviation from the Mean Quartiles Box Plots Summarizing Data	✓ 6.SP.2 ✓ 6.SP.3 ✓ 6.SP.4 ✓ 6.SP.5

# A Story of Ratios

Grade 7



# A Story of Ratios: Grade 7



## MODULE 1: Ratios and Proportional Relationships

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Proportional Relationships	Proportion Concepts Proportional Relationships in Tables and Equations	✓ 7.RP.2a
B: Unit Rate and Constant of Proportionality	Interpreting Unit Rates on Graphs Interpreting Points on Graphs of Proportional Relationships	✓ 7.RP.2b ✓ 7.RP.2c * ✓ 7.RP.2d ✓ 7.EE.4a *
C: Ratios and Rates Involving Fractions D: Ratios of Scale Drawings	Using Proportions to Solve Problems Proportions in Scale Drawings Introduction to Similar Figures Using Similar Figures to Solve Problems Similarity	✓ 7.RP.1 * ✓ 7.RP.2b * ✓ 7.RP.3 ✓ 7.EE.4a * ✓ 7.G.1

## MODULE 2: Rational Numbers

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Rational Numbers	Adding and Subtracting Rational Numbers I Adding and Subtracting Rational Numbers II	✓ 7.NS.1
B: Multiplication and Division of Integers and Rational Numbers	Multiplying and Dividing Rational Numbers Understanding and Multiplying with Negative Mixed Numbers	✓ 7.NS.2
C: Applying Operations with Rational Numbers to Expressions and Equations	Solving and Modeling Two-Step Problems Solving Equations with the Distributive Property Solving Equations with the Distributive Property in Context Writing and Interpreting Expressions with Rational Numbers Operations with Rational Numbers I Operations with Rational Numbers II Solving Word Problems with Algebra	✓ 7.NS.3 ✓ 7.EE.2 ✓ 7.EE.4a

## MODULE 3: Expressions and Equations

<i>Eureka Math/EngageNY Topic</i>	<i>Imagine Math Lesson</i>	<i>CCSS Addressed</i>
A: Use Properties of Operations to Generate Equivalent Expressions	Common Factors in Polynomials	✓ 7.EE.1 ✓ 7.EE.2 *
B: Solve Problems Using Expressions, Equations, and Inequalities	Angle Pairs Angles in a Polygon Writing and Interpreting Expressions with Rational Numbers Concept of Inequalities II	✓ 7.EE.3 ✓ 7.EE.4 ✓ 7.G.5
C: Use Equations and Inequalities to Solve Geometry Problems	Circumference Area of Circles Area of Complex Composite Figures Surface Area of Cylinders Surface Area of Pyramids Surface Area of Cones Surface Area of Spheres Surface Area of Composite Solids Surface Area and Volume of Rectangular Prisms	✓ 7.G.4 ✓ 7.G.6

## MODULE 4: Percent and Proportional Relationships

<i>Eureka Math/EngageNY Topic</i>	<i>Imagine Math Lesson</i>	<i>CCSS Addressed</i>
A: Finding the Whole C: Scale Drawings	Interpreting Points on Graphs of Proportional Relationships Using Proportions to Solve Problems Proportions in Scale Drawings Introduction to Similar Figures Using Similar Figures to Solve Problems Similarity Using Division to Write Fractions as Decimals Percent and Percent Change Percent and Percent Error	✓ 7.RP.1 ✓ 7.RP.2b * ✓ 7.RP.2c ✓ 7.RP.3 ✓ 7.G.1
B: Percent Problems Including More than One Whole D: Population, Mixture, and Counting Problems Involving Percents	Fraction, Decimal, and Percent Equivalents Simple Interest	✓ 7.RP.1 * ✓ 7.RP.2 * ✓ 7.RP.2c * ✓ 7.RP.3 ✓ 7.EE.3

# A Story of Ratios: Grade 7



## MODULE 5: Statistics and Probability

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Calculating and Interpreting Probabilities B: Estimating Probabilities	Probability and Sample Spaces Simple Probability Compound Probability Simulations of Simple and Compound Events Making Predictions	✓ 7.SP.5 ✓ 7.SP.6 ✓ 7.SP.7 ✓ 7.SP.8a ✓ 7.SP.8b ✓ 7.SP.8c
C: Random Sampling and Estimating Population Characteristics D: Comparing Populations	Sampling Comparing Data	7.SP.1 ✓ 7.SP.2 ✓ 7.SP.3 ✓ 7.SP.4

## MODULE 6: Geometry

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Unknown Angles	Angle Pairs Angles in a Polygon	✓ 7.G.5
B: Constructing Triangles	Using Line Segments and Angles to Make Triangles	✓ 7.G.2
C: Slicing Solids	n/a	7.G.3
D: Problems Involving Area and Surface Area	Circumference Area of Circles Area of Complex Composite Figures Surface Area of Cylinders Surface Area of Pyramids Surface Area of Cones Surface Area of Spheres Surface Area of Composite Solids	✓ 7.G.6
E: Problems Involving Volume	Surface Area and Volume of Rectangular Prisms Volume of Cylinders Volume of Pyramids and Cones Volume of Spheres Volume of Composite Solids	✓ 7.G.6

# A Story of Ratios

Grade 8



# A Story of Ratios: Grade 8



## MODULE 1: Integer Exponents and Scientific Notation

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Exponential Notation and Properties of Integer Exponents	Understanding Properties of Integer Exponents Applying Properties of Integer Exponents	✓ 8.EE.1
B: Magnitude and Scientific Notations	Interpreting Numbers Written in Scientific Notation Operations with Numbers in Scientific Notation	✓ 8.EE.3 ✓ 8.EE.4

## MODULE 2: The Concept of Congruence

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Definitions and Properties of the Basic Rigid Motions B: Sequencing the Basic Rigid Motions	Translations Reflections Rotations Composition of Transformations	8.G.1 ✓ 8.G.2
C: Congruence and Angle Relationships	Angles in a Polygon Parallel Lines and Transversals Congruence	✓ 8.G.2 ✓ 8.G.5
D: The Pythagorean Theorem	Understanding the Pythagorean Theorem Pythagorean Theorem - Hypotenuse Pythagorean Theorem - Legs Pythagorean Theorem - Mixed Problems Pythagorean Theorem - Distance Formula	✓ 8.G.6 ✓ 8.G.7

# A Story of Ratios: Grade 8



## MODULE 3: Similarity

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Dilation	Dilations	✓ 8.G.3
B: Similar Figures	Translations Reflections Rotations Composition of Transformations Angles in a Polygon	✓ 8.G.4 ✓ 8.G.5
C: The Pythagorean Theorem	Understanding the Pythagorean Theorem Pythagorean Theorem - Hypotenuse Pythagorean Theorem - Legs Pythagorean Theorem - Mixed Problems Pythagorean Theorem - Distance Formula	✓ 8.G.6 ✓ 8.G.7

## MODULE 4: Linear Equations

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Writing and Solving Linear Equations	Solving Two-Step Equations Solving Equations with the Variable on Both Sides Analyzing Solution Sets to Linear Equations with the Variable on Both Sides	✓ 8.EE.7
B: Linear Equations in Two Variables and Their Graphs	Interpreting Slope Slope	✓ 8.EE.5 ✓ 8.EE.6
C: Slope and Equations of Lines	Slope-Intercept Form	
D: Systems of Linear Equations and Their Solutions	Solving a System of Linear Equations Graphically Solving a System of Linear Equations Algebraically Solving a System of Linear Equations - Applications	✓ 8.EE.5 * ✓ 8.EE.8
E: Pythagorean Theorem	Understanding the Pythagorean Theorem Pythagorean Theorem - Hypotenuse Pythagorean Theorem - Legs Pythagorean Theorem - Mixed Problems Pythagorean Theorem - Distance Formula	✓ 8.EE.8 * ✓ 8.G.7

# A Story of Ratios: Grade 8



## MODULE 5: Examples of Functions from Geometry

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Functions	Interpreting Slope Slope Slope-Intercept Form Point-Slope Form	✓ 8.F.1 ✓ 8.F.2 ✓ 8.F.3
B: Volume	Volume of Cylinders Volume of Pyramids and Cones Volume of Spheres	✓ 8.G.9

## MODULE 6: Linear Functions

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Linear Functions	Point-Slope Form Interpreting Graphs or Real-World Situations Introduction to Sketching Graphs of Real-World Situations	✓ 8.F.4 ✓ 8.F.5
B: Bivariate Numerical Data C: Linear and Nonlinear Models	Direct Variation Comparing Linear and Nonlinear Data	✓ 8.SP.1 ✓ 8.SP.2 ✓ 8.SP.3
D: Bivariate Categorical Data	Patterns and Association in Data	✓ 8.SP.4

# A Story of Ratios: Grade 8



## MODULE 7: Linear Functions

<i>Eureka Math/EngageNY Topic</i>	<i>Imagine Math Lesson</i>	<i>CCSS Addressed</i>
A: Square and Cube Roots B: Decimal Expansions of Numbers	Understanding Square and Cube Roots Classifying and Ordering Real Numbers Approximating Values of Irrational Numbers	✓ 8.NS.1 ✓ 8.NS.2 ✓ 8.EE.2
C: The Pythagorean Theorem	Understanding the Pythagorean Theorem Pythagorean Theorem - Hypotenuse Pythagorean Theorem - Legs Pythagorean Theorem - Mixed Problems Pythagorean Theorem - Distance Formula	✓ 8.G.6 ✓ 8.G.7 ✓ 8.G.8
D: Applications of Radicals and Roots	Volume of Pyramids and Cones Volume of Spheres Volume of Composite Solids	✓ 8.G.7 * ✓ 8.G.9



# A Story of Functions

## Algebra

# A Story of Functions: Algebra



## MODULE 1: Relationships Between Quantities and Reasoning with Equations and their Graphs

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Introduction to Functions Studied This Year - Graphing Stories	Using Units to Solve Problems Introduction to Nonlinear Models	✓ N.Q.1 N.Q.2 ✓ N.Q.3 ✓ A.CED.2 *
B: The Structure of Expressions	Identifying and Generating Equivalent Expressions Adding and Subtracting Polynomials Multiplying Polynomials	✓ A.SSE.2 * ✓ A.APR.1
C: Solving Equations and Inequalities D: Creating Equations to Solve Problems	Writing and Solving Linear Equations in One Variable Solving Linear Equations in One Variable as a Reasoning Process Writing and Graphing Linear Equations in Two or More Variables Writing Linear Inequalities in One Variable Solving Linear Inequalities in One Variable Solving Systems of Linear Equations Solving Linear Equations Graphically Graphing Linear Inequalities and Systems of Linear Inequalities in Real-World Situations Solving Literal Equations Analyzing Solution Sets to Linear Equations with the Variable on Both Sides	✓ N.Q.1 * ✓ A.SSE.1 * ✓ A.CED.1 ✓ A.CED.2 ✓ A.CED.3 ✓ A.CED.4 ✓ A.REI.1 ✓ A.REI.3 ✓ A.REI.5 ✓ A.REI.6 ✓ A.REI.10 ✓ A.REI.12

# A Story of Functions: Algebra



## MODULE 2: Descriptive Statistics

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Shapes and Centers of Distributions	Data Displays on the Real Number Line Measures of Center - Mean Measures of Center - Median Understanding the Effects of Outliers on the Mean and Median	✓ S.ID.1 ✓ S.ID.2 * ✓ S.ID.3
B: Describing Variability and Comparing Distributions	Deviation from the Mean Quartiles Comparing the Shape, Center, and Spread of Data Sets	✓ S.ID.1 * ✓ S.ID.2 ✓ S.ID.3
C: Categorical Data on Two Variables	Summarizing and Interpreting Categorical Data Data Analysis Patterns of Association in Data Correlation	✓ S.ID.5 ✓ S.ID.9
D: Numerical Data on Two Variables	Fitting Functions to Data	✓ S.ID.6 ✓ S.ID.7 * S.ID.8 ✓ S.ID.9

# A Story of Functions: Algebra



## MODULE 3: Linear and Exponential Functions

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Linear and Exponential Sequences	Writing Geometric Sequences Using an Explicit Formula Writing Geometric Sequences Recursively Writing Arithmetic Sequences Explicitly and Recursively Sequences as Functions Modeling Exponential Relationships with Equations, Inequalities, and Graphs	✓ F.IF.1 * ✓ F.IF.2 * ✓ F.IF.3 ✓ F.IF.6 * ✓ F.BF.1a * ✓ F.LE.1 * ✓ F.LE.2 * ✓ F.LE.3 *
B: Functions and Their Graphs	Function Notation Function Notation II Interpreting Graphs of Linear and Exponential Functions in Context Sketching Graphs of Linear and Exponential Functions from a Context Understanding the Domain of a Function Sketching Graphs of Linear Functions from Symbolic Representations Sketching Graphs of Exponential Functions from Symbolic Representations Rate of Change for Linear and Exponential Functions Comparing Functions Using Different Representations Distinguishing Between Linear and Exponential Relationships	✓ F.IF.1 ✓ F.IF.2 ✓ F.IF.4 ✓ F.IF.5 ✓ F.IF.7a
C: Transformations of Functions	Transformations of Graphs of Linear and Exponential Functions	✓ A.REI.11 * ✓ F.IF.7a * ✓ F.BF.3
D: Using Functions and Their Graphs to Solve Problems	Writing Linear and Exponential Functions from a Context Writing Linear and Exponential Functions Based on Different Representations Interpreting the Structure of Linear and Exponential Expressions Piecewise, Step, and Absolute Value Functions	✓ A.CED.1 * A.SSE.3c * ✓ F.IF.4 * ✓ F.IF.6 * ✓ F.IF.9 * ✓ F.BF.1a ✓ F.LE.2 F.LE.5



# A Story of Functions: Algebra



## MODULE 4: Polynomial and Quadratic Expressions, Equations, and Functions

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Quadratic Expressions, Equations, Functions, and Their Connection to Rectangles	Factoring Expressions Factoring Polynomials Factoring Quadratic Expressions Interpreting the Structure of Quadratic Expressions and Expressions with Rational Exponents Modeling Quadratic Relationships with Equations, Inequalities, and Graphs Writing Quadratic Functions from a Context Sketching Graphs of Quadratic Functions in Context	✓ A.SSE.1 ✓ A.SSE.2 ✓ A.SSE.3a ✓ A.APR.1 * ✓ A.CED.1 ✓ A.CED.2 ✓ A.REI.4b * ✓ A.REI.11 * ✓ F.IF.4 ✓ F.IF.5 ✓ F.IF.6 ✓ F.IF.7a *
B: Using Different Forms of Quadratic Functions	Solving Quadratics - Completing the Square Writing Quadratic Functions From Their Graphs Solving Quadratic Equations Graphically Rewriting Quadratics to Reveal Their Structure Problem Solving with Quadratic Functions Using the Quadratic Formula	N.RN.3 ✓ A.SSE.1 * ✓ A.SSE.2 * ✓ A.SSE.3a * A.SSE.3b A.APR.3 * ✓ A.CED.1 * ✓ A.CED.2 ✓ A.REI.4 ✓ F.IF.4 * ✓ F.IF.6 * ✓ F.IF.7a * ✓ F.IF.8a
C: Function Transformations and Modeling	Sketching and Transforming Graphs of Quadratic Functions from Symbolic Representations	✓ A.CED.2 * ✓ F.IF.6 * ✓ F.IF.7b * ✓ F.IF.8a * ✓ F.IF.9 * ✓ F.BF.3

# A Story of Functions: Algebra



## MODULE 5: A Synthesis of Modeling with Equations and Functions

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
<p>A: Elements of Modeling</p> <p>B: Completing the Modeling Cycle</p>	<p>Elements of modeling are embedded throughout the lessons on this pathway.</p>	<p><b>N.Q.2</b></p> <p>✓ <b>N.Q.3 *</b></p> <p>✓ <b>A.CED.1 *</b></p> <p>✓ <b>A.CED.2 *</b></p> <p>✓ <b>F.IF.4 *</b></p> <p>✓ <b>F.IF.5 *</b></p> <p>✓ <b>F.IF.6 *</b></p> <p>✓ <b>F.BF.1a *</b></p> <p>✓ <b>F.LE.1b *</b></p> <p>✓ <b>F.LE.1c *</b></p> <p>✓ <b>F.LE.2 *</b></p>

# A Story of Functions

## Geometry

# A Story of Functions: Geometry



## MODULE 1: Congruence, Proof, Constructions

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Basic Construction	Defining Basic Geometric Elements	✓ G.CO.1
	Constructing Angles and Special Line Segments	✓ G.CO.12
	Constructing Inscribed Figures	✓ G.CO.13
B: Unknown Angles	What Is Proof?	✓ G.CO.C.9
	Proving Theorems About Lines and Angles	
C: Transformations/Rigid Motions	Defining Transformations	✓ G.CO.2
	Rotational and Reflectional Symmetry	✓ G.CO.3
	Representing Transformations with Algebra	✓ G.CO.4
	Rigid Motion and Congruence	✓ G.CO.5
		✓ G.CO.6
		✓ G.CO.7*
D: Congruence	Proving Theorems About Congruent Triangles	✓ G.CO.7*
	Problem Solving with Congruent Triangles	✓ G.CO.8
	Proving Theorems About Relationships in Triangles	
E: Proving Properties of Geometric Figures	Proving Theorems About Parallelograms	✓ G.CO.9*
		✓ G.CO.10*
		✓ G.CO.11
F: Advanced Constructions	n/a	✓ G.CO.13*
G: Axiomatic Systems	n/a	✓ G.CO.1*
		✓ G.CO.2*
		✓ G.CO.3*
		✓ G.CO.4*
		✓ G.CO.5*
		✓ G.CO.6*
		✓ G.CO.7*
		✓ G.CO.8*
		✓ G.CO.9*
		✓ G.CO.10*
		✓ G.CO.11*
		✓ G.CO.12*
		✓ G.CO.13*



# A Story of Functions: Geometry



## MODULE 2: Similarity, Proof, and Trigonometry

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Scale Drawings B: Dilations	Proportions in Scale Drawings Properties of Dilations I Properties of Dilations II	✓ G.SRT.1 ✓ G.SRT.4* G.MG.3
C: Similarity and Dilations	Transformations and Similarity Problem Solving with Transformations and Similarity	✓ G.SRT.2 ✓ G.SRT.3 ✓ G.SRT.5 G.MG.1
D: Applying Similarity to Right Triangles	Proving Theorems About Similar Triangles	✓ G.SRT.4
E: Trigonometry	Similarity and Trigonometric Ratios Problem Solving with Similarity and Trigonometric Ratios Sine and Cosine of Complementary Angles Law of Sines and Law of Cosines	✓ G.SRT.6 ✓ G.SRT.7 ✓ G.SRT.8 G.SRT.10 ✓ G.SRT.11

## MODULE 3: Extending to Three Dimensions

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
A: Area B: Volume	Understanding Formulas for Curved Figures Cross Sections of 3-Dimensional Figures Volume of Cylinders Volume of Pyramids and Cones Volume of Spheres	✓ G.GMD.1 G.GMD.2 ✓ G.GMD.3 ✓ G.GMD.4 G.MG.1 G.MG.2 G.MG.3

# A Story of Functions: Geometry



## MODULE 4: Connecting Algebra and Geometry Through Coordinates

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
<p>A: Connecting Algebra and Geometry Through Coordinates</p> <p>B: Perpendicular and Parallel Lines in the Cartesian Plane</p>	<p>Coordinates of Parallel and Perpendicular Lines</p> <p>Problem Solving with Coordinates of Parallel and Perpendicular Lines</p>	<p>✓ G.SRT.1</p> <p>✓ G.SRT.4*</p> <p>G.MG.3</p>
<p>C: Perimeters and Areas of Polygonal Regions in the Cartesian Plane</p> <p>D: Partitioning and Extending Segments and Parameterization of Lines</p>	<p>Dividing a Segment Proportionally</p> <p>Using Coordinates to Find Perimeters and Areas</p>	<p>✓ G.GPE.4*</p> <p>✓ G.GPE.6</p> <p>✓ G.GPE.7</p>

## MODULE 5: Circles With and Without Coordinates

Eureka Math/EngageNY Topic	Imagine Math Lesson	CCSS Addressed
<p>A: Central and Inscribed Angles</p> <p>B: Arcs and Sectors</p> <p>C: Secants and Tangents</p>	<p>Tangents, Chords, Radii, and Angles in Circles</p> <p>Quadrilaterals Inscribed in Circles</p> <p>Radians and Area of Sectors</p>	<p>✓ G.C.1*</p> <p>✓ G.C.2</p> <p>✓ G.C.3</p> <p>✓ G.C.4</p> <p>✓ G.C.5</p>
<p>D: Equations for Circles and Tangents</p> <p>E: Cyclical Quadrilaterals and Ptolemy's Theorem</p>	<p>Equation of a Circle</p> <p>Problem Solving with the Equation of a Circle</p>	<p>✓ G.GPE.1</p> <p>✓ G.GPE.4</p> <p>✓ G.C.3*</p>

