A Correlation of

Connected Mathematics Project 3 (CMP3)

to the

Missouri Learning Standards Grade Level Expectations Mathematics Grades 6-8

SAVVAS

A Correlation of Connected Mathematics Project 3 (CMP3) ©2017
To the Missouri Learning Standards: Grade Level Expectations

Table of Contents

A Correlation of Connected Mathematics Project 3 (CMP3) ©2017
To the Missouri Learning Standards: Grade Level Expectations

Missouri Learning Standards: Grade-Level Expectations Grade 6	**Connected Mathematics Project 3 ©2017 Grade 6 Lessons**
Ratios and Proportional Relationships	
A Understand and use ratios to solve problems.	
1 Understand a ratio as a comparison of two quantities and represent these comparisons.	**Comparing Bits and Pieces:** 1.1: Fundraising; 1.2: Fundraising Thermometers; 1.3: Equivalent Fractions on the Line; 1.4: Making Progress; 1.5: Comparing Fundraising Goals; 2.2: Unequal Shares **Decimal Ops:** 1.3: Take a Hike
2 Understand the concept of a unit rate associated with a ratio, and describe the meaning of unit rate.	**Comparing Bits and Pieces:** 1.1: Fundraising; 1.2: Fundraising Thermometers; 1.3: Equivalent Fractions on the Line; 1.4: Making Progress; 1.5: Comparing Fundraising Goals; 2.1: Equal Shares; 2.2: Unequal Shares; 2.3: Making Comparisons with Rate Tables **Decimal Ops:** 1.3: Take a Hike
3 Solve problems involving ratios and rates.	**Comparing Bits and Pieces:** 1.1: Fundraising; 1.2: Fundraising Thermometers; 1.3: Equivalent Fractions on the Line; 1.4: Making Progress; 1.5: Comparing Fundraising Goals; 2.1: Equal Shares; 2.2: Unequal Shares; 2.3: Making Comparisons with Rate Tables **Decimal Ops:** 1.3: Take a Hike; 4.1: What's the Tax on This Item?
a. Create tables of equivalent ratios, find missing values in the tables and plot the pairs of values on the Cartesian coordinate plane.	**Comparing Bits and Pieces:** 2.3: Making Comparisons with Rate Tables **Variables and Patterns:** 1.1: Getting Ready to Ride; 1.2: From Atlantic City to Lewes; 1.3: From Lewes to Chincoteague Island; 1.4: From Chincoteague to Colonial Williamsburg; 2.1: Renting Bicycles; 3.2: Moving, Texting, and Measuring
b. Solve unit rate problems.	**Comparing Bits and Pieces:** 2.1: Equal Shares **Decimal Ops:** 1.3: Take a Hike **Variables and Patterns:** 1.1: Getting Ready to Ride; 1.2: From Atlantic City to Lewes; 1.3: From Lewes to Chincoteague Island; 1.4: From Chincoteague to Colonial Williamsburg; 3.1: Visit to Wild World; 3.2: Moving, Texting, and Measuring

A Correlation of Connected Mathematics Project 3 (CMP3) ©2017
To the Missouri Learning Standards: Grade Level Expectations

Missouri Learning Standards: Grade-Level Expectations Grade 6	Connected Mathematics Project 3 ©2017 Grade 6 Lessons
c. Solve percent problems.	**Comparing Bits and Pieces:** 4.1: Who Is the Best? Making Sense of Percents; 4.2: Genetic Traits; 4.3: The Art of Comparison **Decimal Ops:** 4.1: What's the Tax on This Item? 4.2: Computing Tips; 4.3: Percent Discounts; 4.4: Putting Operations Together
d. Convert measurement units within and between two systems of measurement.	For related content, please see: **Variables and Patterns:** 3.1: Visit to Wild World; 3.2: Moving, Texting, and Measuring; 3.3: Group Discounts and a Bonus Card; 3.4: Getting the Calculation Right
Number Sense and Operations	
A Apply and extend previous understandings of multiplication and division to divide fractions by fractions.	
1 Compute and interpret quotients of positive fractions.	**Let's Be Rational:** 2.1: How Much; 2.2: Modeling Multiplication Situations; 2.3: Changing Forms; 3.1: Preparing Food; 3.2: Into Pieces; 3.3: Sharing a Prize; 3.4: Examining Algorithms for Dividing Fractions
a. Solve problems involving division of fractions by fractions.	**Let's Be Rational:** 2.1: How Much; 2.2: Modeling Multiplication Situations; 2.3: Changing Forms; 3.1: Preparing Food; 3.2: Into Pieces; 3.3: Sharing a Prize; 3.4: Examining Algorithms for Dividing Fractions
B Compute with non-negative multi-digit numbers, and find common factors and multiples.	
1 Demonstrate fluency with division of multi-digit whole numbers.	**Decimal Ops:** 3.3: How Many Times?; 3.4: Going the Long Way; 3.5: Challenging Cases
2 Demonstrate fluency with addition, subtraction, multiplication and division of decimals.	**Let's Be Rational:** 1.1: Getting Close; 1.2: Estimating Sums and Differences; 1.3: Land Sections; 1.4: Visiting the Spice Shop; **Decimal Ops:** 2.1: Getting Things in the Right Place; 2.2: What's the Difference; 2.3: Connecting Operations; 3.1: It's Decimal Time(s); 3.2: It Works Every Time; 3.3: How Many Times?; 3.4: Going the Long Way; 3.5: Challenging Cases; 4.1: What's the Tax on This Item? 4.2: Computing Tips; 4.3: Percent Discounts; 4.4: Putting Operations Together

A Correlation of Connected Mathematics Project 3 (CMP3) ©2017
To the Missouri Learning Standards: Grade Level Expectations

Missouri Learning Standards: Grade-Level Expectations Grade 6	**Connected Mathematics Project 3 ©2017 Grade 6 Lessons**
3 Find common factors and multiples.	**Prime Time:** 2.1: Riding Ferris Wheels; 2.2: Looking at Cicada Cycles; 2.3: Bagging Snacks; 3.2: Finding the Longest Factor String; 3.3: Using Prime Factorizations; 3.4: Unraveling the Locker Problem; 4.2: Using the Distributive Property; 4.3: Ordering Operations
a. Find the greatest common factor (GCF) and the least common multiple (LCM).	**Prime Time:** 2.1: Riding Ferris Wheels; 2.2: Looking at Cicada Cycles; 2.3: Bagging Snacks; 3.2: Finding the Longest Factor String; 3.3: Using Prime Factorizations; 3.4: Unraveling the Locker Problem; 4.2: Using the Distributive Property; 4.3: Ordering Operations
b. Use the distributive property to express a sum of two whole numbers with a common factor as a multiple of a sum of two whole numbers.	**Prime Time:** 2.1: Riding Ferris Wheels; 2.2: Looking at Cicada Cycles; 2.3: Bagging Snacks; 3.2: Finding the Longest Factor String; 3.3: Using Prime Factorizations; 3.4: Unraveling the Locker Problem; 4.2: Using the Distributive Property; 4.3: Ordering Operations
C Apply and extend previous understandings of numbers to the system of rational numbers.	
1 Use positive and negative numbers to represent quantities.	**Comparing Bits and Pieces:** 3.1: Extending the Number Line; 3.2: Estimating and Ordering Rational Numbers
2 Locate a rational number as a point on the number line.	**Comparing Bits and Pieces:** 3.1: Extending the Number Line; 3.2: Estimating and Ordering Rational Numbers; 3.4 Decimals on the Number Line
a. Locate rational numbers on a horizontal or vertical number line.	**Comparing Bits and Pieces:** 3.1: Extending the Number Line; 3.2: Estimating and Ordering Rational Numbers; 3.4 Decimals on the Number Line
b. Write, interpret and explain problems of ordering of rational numbers.	**Comparing Bits and Pieces:** 3.1: Extending the Number Line; 3.2: Estimating and Ordering Rational Numbers **Variables and Patterns:** 2.3: Predicting Profits
c. Understand that a number and its opposite (additive inverse) are located on opposite sides of zero on the number line.	**Comparing Bits and Pieces:** 3.1: Extending the Number Line; 3.2: Estimating and Ordering Rational Numbers; 3.4 Decimals on the Number Line

A Correlation of Connected Mathematics Project 3 (CMP3) ©2017
To the Missouri Learning Standards: Grade Level Expectations

Missouri Learning Standards: Grade-Level Expectations Grade 6	**Connected Mathematics Project 3 ©2017 Grade 6 Lessons**
3 Understand that the absolute value of a rational number is its distance from 0 on the number line.	**Comparing Bits and Pieces:** 3.1: Extending the Number Line; 3.2: Estimating and Ordering Rational Numbers; 3.4 Decimals on the Number Line
4 Extend prior knowledge to generate equivalent representations of rational numbers between fractions, decimals and percentages (limited to terminating decimals and/or benchmark fractions of 1/3 and 2/3).	For related content, please see: **Comparing Bits and Pieces:** 4.1: Who Is the Best? Making Sense of Percents; 4.2: Genetic Traits; 4.3: The Art of Comparison **Decimal Ops:** 4.1: What's the Tax on This Item?; 4.2: Computing Tips; 4.3: Percent Discounts; 4.4: Putting Operations Together
Expressions, Equations and Inequalities	
A Apply and extend previous understandings of arithmetic to algebraic expressions.	
1 Describe the difference between an expression and an equation.	**Variables and Patterns:** 3.1: Visit to Wild World; 3.4: Getting the Calculation Right; 4.1: Taking the Plunge
2 Create and evaluate expressions involving variables and whole number exponents.	**Prime Time:** 4.2: Using the Distributive Property; 4.3: Ordering Operations; 4.4: Choosing an Operation **Let's Be Rational:** 4.1: Just the Facts; 4.2: Multiplication and Families; 4.3: Becoming an Operations Sleuth **Covering and Surrounding:** 1.1: Designing Bumper-Car Rides; 1.2: Building Storm Shelters; 1.3: Fencing in Spaces; 2.1: Triangles on Grids; 2.2: More Triangles; 2.3: Making Families of Triangles; 2.4: Designing Triangles Under Constraints; 3.1: Parallelograms and Triangles; 3.2: Making Families of Parallelograms; 3.3: Designing Parallelograms; 3.4: Polygons on Coordinate Grids; 4.1: Making Rectangular Boxes; 4.2: Filling the Boxes; 4.3: Designing Gift Boxes **Variables and Patterns:** 3.1: Visit to Wild World; 3.2: Moving, Texting, and Measuring; 3.3: Group Discounts and a Bonus Card; 3.4: Getting the Calculation Right

Missouri Learning Standards: Grade-Level Expectations Grade 6	**Connected Mathematics Project 3 ©2017 Grade 6 Lessons**
a. Identify parts of an expression using mathematical terminology.	**Let's Be Rational:** 1.1: Getting Close; 1.2: Estimating Sums and Differences; 1.3: Land Sections; 1.4: Visiting the Spice Shop; 3.1: Preparing Food; 3.2: Into Pieces; 3.3: Sharing a Prize; 3.4: Examining Algorithms; 4.1: Just The Facts; 4.2: Multiplication and Families; 4.3: Becoming an Operations Sleuth **Variables and Patterns:** 4.1: Taking the Plunge; 4.2: More Than One Way to Say It; 4.3: Putting It All Together
b. Evaluate expressions at specific values of the variables.	**Prime Time:** 4.2: Using the Distributive Property; 4.3: Ordering Operations; 4.4: Choosing an Operation **Let's Be Rational:** 4.1: Just the Facts; 4.2: Multiplication and Families; 4.3: Becoming an Operations Sleuth **Covering and Surrounding:** 1.1: Designing Bumper-Car Rides; 1.2: Building Storm Shelters; 1.3: Fencing in Spaces; 2.1: Triangles on Grids; 2.2: More Triangles; 2.3: Making Families of Triangles; 2.4: Designing Triangles Under Constraints; 3.1: Parallelograms and Triangles; 3.2: Making Families of Parallelograms; 3.3: Designing Parallelograms; 3.4: Polygons on Coordinate Grids; 4.1: Making Rectangular Boxes; 4.2: Filling the Boxes; 4.3: Designing Gift Boxes **Variables and Patterns:** 3.1: Visit to Wild World; 3.2: Moving, Texting, and Measuring; 3.3: Group Discounts and a Bonus Card; 3.4: Getting the Calculation Right; 4.1: Taking the Plunge; 4.2: More Than One Way to Say It; 4.3: Putting It All Together
c. Evaluate non-negative rational number expressions.	**Prime Time:** 4.2: Using the Distributive Property; 4.3: Ordering Operations; 4.4: Choosing an Operation **Let's Be Rational:** 4.1: Just the Facts; 4.2: Multiplication and Families; 4.3: Becoming an Operations Sleuth

Missouri Learning Standards: Grade-Level Expectations Grade 6	**Connected Mathematics Project 3 ©2017 Grade 6 Lessons**
(Continued) c. Evaluate non-negative rational number expressions.	**Covering and Surrounding:** 1.1: Designing Bumper-Car Rides; 1.2: Building Storm Shelters; 1.3: Fencing in Spaces; 2.1: Triangles on Grids; 2.2: More Triangles; 2.3: Making Families of Triangles; 2.4: Designing Triangles Under Constraints; 3.1: Parallelograms and Triangles; 3.2: Making Families of Parallelograms; 3.3: Designing Parallelograms; 3.4: Polygons on Coordinate Grids; 4.1: Making Rectangular Boxes; 4.2: Filling the Boxes; 4.3: Designing Gift Boxes **Variables and Patterns:** 3.1: Visit to Wild World; 3.2: Moving, Texting, and Measuring; 3.3: Group Discounts and a Bonus Card; 3.4: Getting the Calculation Right; 4.1: Taking the Plunge; 4.2: More Than One Way to Say It; 4.3: Putting It All Together
d. Write and evaluate algebraic expressions.	**Prime Time:** 4.2: Using the Distributive Property; 4.3: Ordering Operations; 4.4: Choosing an Operation **Let's Be Rational:** 4.1: Just the Facts; 4.2: Multiplication and Families; 4.3: Becoming an Operations Sleuth **Covering and Surrounding:** 1.1: Designing Bumper-Car Rides; 1.2: Building Storm Shelters; 1.3: Fencing in Spaces; 2.1: Triangles on Grids; 2.2: More Triangles; 2.3: Making Families of Triangles; 2.4: Designing Triangles Under Constraints; 3.1: Parallelograms and Triangles; 3.2: Making Families of Parallelograms; 3.3: Designing Parallelograms; 3.4: Polygons on Coordinate Grids; 4.1: Making Rectangular Boxes; 4.2: Filling the Boxes; 4.3: Designing Gift Boxes **Variables and Patterns:** 3.1: Visit to Wild World; 3.2: Moving, Texting, and Measuring; 3.3: Group Discounts and a Bonus Card; 3.4: Getting the Calculation Right
e. Understand the meaning of the variable in the context of the situation.	**Prime Time:** 4.2: Using the Distributive Property; 4.3: Ordering Operations; 4.4: Choosing an Operation **Let's Be Rational:** 4.1: Just the Facts; 4.2: Multiplication and Families; 4.3: Becoming an Operations Sleuth

Missouri Learning Standards: Grade-Level Expectations Grade 6	**Connected Mathematics Project 3 ©2017 Grade 6 Lessons**
(Continued) e. Understand the meaning of the variable in the context of the situation.	**Covering and Surrounding:** 1.1: Designing Bumper-Car Rides; 1.2: Building Storm Shelters; 1.3: Fencing in Spaces; 2.1: Triangles on Grids; 2.2: More Triangles; 2.3: Making Families of Triangles; 2.4: Designing Triangles Under Constraints; 3.1: Parallelograms and Triangles; 3.2: Making Families of Parallelograms; 3.3: Designing Parallelograms; 3.4: Polygons on Coordinate Grids; 4.1: Making Rectangular Boxes; 4.2: Filling the Boxes; 4.3: Designing Gift Boxes **Variables and Patterns:** 3.1: Visit to Wild World; 3.2: Moving, Texting, and Measuring; 3.3: Group Discounts and a Bonus Card; 3.4: Getting the Calculation Right
3 Identify and generate equivalent algebraic expressions using mathematical properties.	**Variables and Patterns:** 3.1: Visit to Wild World; 3.2: Moving, Texting, and Measuring; 3.3: Group Discounts and a Bonus Card; 3.4: Getting the Calculation Right; 4.1: Taking the Plunge; 4.2: More Than One Way to Say It; 4.3: Putting It All Together; 4.4: Finding the Unknown Value; 4.5: It's Not Always Equal
B Reason about and solve one-variable equations and inequalities.	
1 Use substitution to determine whether a given number in a specified set makes a one-variable equation or inequality true.	**Variables and Patterns:** 2.1: Renting Bicycles; 2.2: Finding Customers; 2.3: Predicting Profits; 2.4: Interpreting Graphs; 3.1: Visit to Wild World; 3.2: Moving, Texting, and Measuring; 3.3: Group Discounts and a Bonus Card; 3.4: Getting the Calculation Right; 4.1: Taking the Plunge; 4.2: More Than One Way to Say It; 4.3: Putting It All Together; 4.4: Finding the Unknown Value; 4.5: It's Not Always Equal
2 Understand that if any solutions exist, the solution set for an equation or inequality consists of values that make the equation or inequality true.	**Variables and Patterns:** 2.1: Renting Bicycles; 2.2: Finding Customers; 2.3: Predicting Profits; 2.4: Interpreting Graphs; 3.1: Visit to Wild World; 3.2: Moving, Texting, and Measuring; 3.3: Group Discounts and a Bonus Card; 3.4: Getting the Calculation Right; 4.1: Taking the Plunge; 4.2: More Than One Way to Say It; 4.3: Putting It All Together; 4.4: Finding the Unknown Value; 4.5: It's Not Always Equal

A Correlation of Connected Mathematics Project 3 (CMP3) ©2017
To the Missouri Learning Standards: Grade Level Expectations

Missouri Learning Standards: Grade-Level Expectations Grade 6	**Connected Mathematics Project 3 ©2017 Grade 6 Lessons**
3 Write and solve equations using variables to represent quantities, and understand the meaning of the variable in the context of the situation.	**Variables and Patterns:** 2.1: Renting Bicycles; 2.2: Finding Customers; 2.3: Predicting Profits; 2.4: Interpreting Graphs; 3.1: Visit to Wild World; 3.2: Moving, Texting, and Measuring; 3.3: Group Discounts and a Bonus Card; 3.4: Getting the Calculation Right; 4.1: Taking the Plunge; 4.2: More Than One Way to Say It; 4.3: Putting It All Together; 4.4: Finding the Unknown Value
4 Solve one-step linear equations in one variable involving non-negative rational numbers.	**Variables and Patterns:** 2.1: Renting Bicycles; 2.2: Finding Customers; 2.3: Predicting Profits; 2.4: Interpreting Graphs; 3.1: Visit to Wild World; 3.2: Moving, Texting, and Measuring; 3.3: Group Discounts and a Bonus Card; 3.4: Getting the Calculation Right; 4.1: Taking the Plunge; 4.2: More Than One Way to Say It; 4.3: Putting It All Together; 4.4: Finding the Unknown Value
5 Recognize that inequalities may have infinitely many solutions.	**Variables and Patterns:** 4.5: It's Not Always Equal
a. Write an inequality of the form $x > c$, $x < c$, $x \geq c$, or $x \leq c$ to represent a constraint or condition.	**Variables and Patterns:** 4.5: It's Not Always Equal
b. Graph the solution set of an inequality.	**Variables and Patterns:** 4.5: It's Not Always Equal
C Represent and analyze quantitative relationships between dependent and independent variables.	
1 Identify and describe relationships between two variables that change in relationship to one another.	**Variables and Patterns:** 1.1: Getting Ready to Ride; 1.2: From Atlantic City to Lewes; 1.3: From Lewes to Chincoteague Island; 1.4: From Chincoteague to Colonial Williamsburg; 2.1: Renting Bicycles; 2.2: Finding Customers; 2.3: Predicting Profits; 2.4: What's the Story?; 3.1: Visit to Wild World; 3.2: Moving, Texting, and Measuring; 3.3: Group Discounts and a Bonus Card; 3.4: Getting the Calculation Right

A Correlation of Connected Mathematics Project 3 (CMP3) ©2017
To the Missouri Learning Standards: Grade Level Expectations

Missouri Learning Standards: Grade-Level Expectations Grade 6	Connected Mathematics Project 3 ©2017 Grade 6 Lessons
a. Write an equation to express one quantity, the dependent variable, in terms of the other quantity, the independent variable.	**Variables and Patterns:** 1.1: Getting Ready to Ride; 1.2: From Atlantic City to Lewes; 1.3: From Lewes to Chincoteague Island; 1.4: From Chincoteague to Colonial Williamsburg; 2.1: Renting Bicycles; 2.2: Finding Customers; 2.3: Predicting Profits; 2.4: What's the Story?; 3.1: Visit to Wild World; 3.2: Moving, Texting, and Measuring; 3.3: Group Discounts and a Bonus Card; 3.4: Getting the Calculation Right
b. Analyze the relationship between the dependent and independent variables using graphs, tables and equations and relate these representations to each other.	**Variables and Patterns:** 1.1: Getting Ready to Ride; 1.2: From Atlantic City to Lewes; 1.3: From Lewes to Chincoteague Island; 1.4: From Chincoteague to Colonial Williamsburg; 2.1: Renting Bicycles; 2.2: Finding Customers; 2.3: Predicting Profits; 2.4: What's the Story?; 3.1: Visit to Wild World; 3.2: Moving, Texting, and Measuring; 3.3: Group Discounts and a Bonus Card; 3.4: Getting the Calculation Right
Geometry and Measurement	
A Solve problems involving area, surface area and volume.	
1 Find the area of polygons by composing or decomposing the shapes into rectangles or triangles.	**Covering and Surrounding:** 1.1: Designing Bumper-Car Rides; 1.2: Building Storm Shelters; 1.3: Fencing in Spaces; 2.1: Triangles on Grids; 2.2: More Triangles; 2.3: Making Families of Triangles; 2.4: Designing Triangles Under Constraints; 3.1: Parallelograms and Triangles; 3.2: Making Families of Parallelograms; 3.3: Designing Parallelograms; 3.4: Polygons on Coordinate Grids; 4.1: Making Rectangular Boxes; 4.2: Filling the Boxes; 4.3: Designing Gift Boxes
2 Find the volume of right rectangular prisms.	**Covering and Surrounding:** 4.2: Filling the Boxes; 4.3: Designing Gift Boxes
a. Understand that the volume of a right rectangular prism can be found by filling the prism with multiple layers of the base.	**Covering and Surrounding:** 4.2: Filling the Boxes; 4.3: Designing Gift Boxes
b. Apply V = l * w * h and V = Bh to find the volume of right rectangular prisms.	**Covering and Surrounding:** 4.2: Filling the Boxes; 4.3: Designing Gift Boxes

A Correlation of Connected Mathematics Project 3 (CMP3) ©2017
To the Missouri Learning Standards: Grade Level Expectations

Missouri Learning Standards: Grade-Level Expectations Grade 6	**Connected Mathematics Project 3 ©2017 Grade 6 Lessons**
3 Solve problems by graphing points in all four quadrants of the Cartesian coordinate plane.	For related content, please see: **Covering and Surrounding:** 3.4: Polygons on Coordinate Grids **Variables and Patterns:** 2.3: Predicting Profits
a. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the Cartesian coordinate plane	For related content, please see: **Covering and Surrounding:** 3.4: Polygons on Coordinate Grids **Variables and Patterns:** 2.3: Predicting Profits
b. Recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.	For related content, please see: **Covering and Surrounding:** 3.4: Polygons on Coordinate Grids **Variables and Patterns:** 2.3: Predicting Profits
c. Find distances between points with the same first coordinate or the same second coordinate.	For related content, please see: **Covering and Surrounding:** 3.4: Polygons on Coordinate Grids **Variables and Patterns:** 2.3: Predicting Profits
d. Construct polygons in the Cartesian coordinate plane.	**Covering and Surrounding:** 2.1: Triangles on Grids; 3.4: Polygons on Coordinate Grids
4 Solve problems using nets.	**Covering and Surrounding:** 4.1: Making Rectangular Boxes; 4.3: Designing Gift Boxes
a. Represent three-dimensional figures using nets made up of rectangles and triangles.	**Covering and Surrounding:** 4.1: Making Rectangular Boxes; 4.3: Designing Gift Boxes
b. Use nets to find the surface area of three-dimensional figures whose sides are made up of rectangles and triangles.	**Covering and Surrounding:** 4.1: Making Rectangular Boxes; 4.3: Designing Gift Boxes
Data Analysis, Statistics and Probability	
A Develop understanding of statistical variability.	
1 Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.	**Data About Us:** 1.1: How Many Letters Are in a Name?; 1.2: Describing Name Lengths; 1.3: Describing Name Lengths; 2.1: What's a Mean Household Size?; 2.2: Comparing Distributions With the Same Mean; 2.3: Making Choices; 2.4: Who Else Is in Your Household; 3.1: Estimating Cereal Serving Sizes; 3.2: Connecting Cereal Shelf Location and Sugar; 3.3: Is It Worth the Wait?; 4.1: Traveling to School; 4.2: Jumping Rope; 4.3: How Much Taller is a 6th Grader Than A Second Grader?

Missouri Learning Standards: Grade-Level Expectations Grade 6	**Connected Mathematics Project 3 ©2017 Grade 6 Lessons**
2 Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread and overall shape.	**Data About Us:** 1.1: How Many Letters Are in a Name?; 1.2: Describing Name Lengths; 1.3: Describing Name Lengths; 2.1: What's a Mean Household Size?; 2.2: Comparing Distributions With the Same Mean; 2.3: Making Choices; 2.4: Who Else Is in Your Household; 3.1: Estimating Cereal Serving Sizes; 3.2: Connecting Cereal Shelf Location and Sugar; 3.3: Is It Worth the Wait?; 4.1: Traveling to School; 4.2: Jumping Rope; 4.3: How Much Taller is a 6th Grader Than A Second Grader?
3 Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary from a single number.	**Data About Us:** 2.1: What's a Mean Household Size?; 2.2: Comparing Distributions With the Same Mean; 2.3: Making Choices; 2.4: Who Else Is in Your Household; 3.1: Estimating Cereal Serving Sizes; 3.2: Connecting Cereal Shelf Location and Sugar; 3.3: Is It Worth the Wait?
B Summarize and describe distributions.	
1 Display and interpret data.	**Data About Us:** 1.1: How Many Letters Are in a Name?; 1.2: Describing Name Lengths; 1.3: Describing Name Lengths; 2.1: What's a Mean Household Size?; 2.2: Comparing Distributions With the Same Mean; 2.3: Making Choices; 2.4: Who Else Is in Your Household; 3.1: Estimating Cereal Serving Sizes; 3.2: Connecting Cereal Shelf Location and Sugar; 3.3: Is It Worth the Wait?; 4.1: Traveling to School; 4.2: Jumping Rope; 4.3: How Much Taller is a 6th Grader Than A Second Grader?
a. Use dot plots, histograms and box plots to display and interpret numerical data.	**Data About Us:** 1.1: How Many Letters Are in a Name?; 1.2: Describing Name Lengths; 1.3: Describing Name Lengths; 2.1: What's a Mean Household Size?; 2.2: Comparing Distributions With the Same Mean; 2.3: Making Choices; 2.4: Who Else Is in Your Household; 3.1: Estimating Cereal Serving Sizes; 3.2: Connecting Cereal Shelf Location and Sugar; 3.3: Is It Worth the Wait?; 4.1: Traveling to School; 4.2: Jumping Rope; 4.3: How Much Taller is a 6th Grader Than A Second Grader?

A Correlation of Connected Mathematics Project 3 (CMP3) ©2017
To the Missouri Learning Standards: Grade Level Expectations

Missouri Learning Standards: Grade-Level Expectations Grade 6	Connected Mathematics Project 3 ©2017 Grade 6 Lessons
b. Create and interpret circle graphs.	This standard is outside the scope of Connected Mathematics Project 3.
2 Summarize numerical data sets in relation to the context.	**Data About Us:** 1.1: How Many Letters Are in a Name?; 1.2: Describing Name Lengths; 1.3: Describing Name Lengths; 2.1: What's a Mean Household Size?; 2.2: Comparing Distributions With the Same Mean; 2.3: Making Choices; 2.4: Who Else Is in Your Household; 3.1: Estimating Cereal Serving Sizes; 3.2: Connecting Cereal Shelf Location and Sugar; 3.3: Is It Worth the Wait?; 4.1: Traveling to School; 4.2: Jumping Rope; 4.3: How Much Taller is a 6th Grader Than A Second Grader?
a. Report the number of observations.	**Data About Us:** 1.1: How Many Letters Are in a Name?; 1.2: Describing Name Lengths; 1.3: Describing Name Lengths; 2.1: What's a Mean Household Size?; 2.2: Comparing Distributions With the Same Mean; 2.3: Making Choices; 2.4: Who Else Is in Your Household; 3.1: Estimating Cereal Serving Sizes; 3.2: Connecting Cereal Shelf Location and Sugar; 3.3: Is It Worth the Wait?; 4.1: Traveling to School; 4.2: Jumping Rope; 4.3: How Much Taller is a 6th Grader Than A Second Grader?
b. Describe the nature of the attribute under investigation, including how it was measured and its units of measurement.	**Data About Us:** 1.1: How Many Letters Are in a Name?; 1.2: Describing Name Lengths; 1.3: Describing Name Lengths; 2.1: What's a Mean Household Size?; 2.2: Comparing Distributions With the Same Mean; 2.3: Making Choices; 2.4: Who Else Is in Your Household; 3.1: Estimating Cereal Serving Sizes; 3.2: Connecting Cereal Shelf Location and Sugar; 3.3: Is It Worth the Wait?; 4.1: Traveling to School; 4.2: Jumping Rope; 4.3: How Much Taller is a 6th Grader Than A Second Grader?
c. Give quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context of the data.	**Data About Us:** 2.1: What's a Mean Household Size?; 2.2: Comparing Distributions With the Same Mean; 2.3: Making Choices; 2.4: Who Else Is in Your Household; 3.1: Estimating Cereal Serving Sizes; 3.2: Connecting Cereal Shelf Location and Sugar; 3.3: Is It Worth the Wait?

Missouri Learning Standards: Grade-Level Expectations Grade 6	**Connected Mathematics Project 3 ©2017 Grade 6 Lessons**
d. Analyze the choice of measures of center and variability based on the shape of the data distribution and/or the context of the data.	**Data About Us:** 2.1: What's a Mean Household Size?; 2.2: Comparing Distributions With the Same Mean; 2.3: Making Choices; 2.4: Who Else Is in Your Household; 3.1: Estimating Cereal Serving Sizes; 3.2: Connecting Cereal Shelf Location and Sugar; 3.3: Is It Worth the Wait?

Missouri Learning Standards: Grade-Level Expectations Grade 7	**enVisionmath2.0 Grades 6-8 Grade 7 Lessons**
Ratios and Proportional Relationships	
A Analyze proportional relationships and use them to solve problems.	
1 Compute unit rates, including those that involve complex fractions, with like or different units.	**Comparing and Scaling:** 1.2: Mixing Juice; 2.2: Comparing Pizza Prices; 2.3: Finding Costs; 3.3: Mixing it Up
2 Recognize and represent proportional relationships between quantities.	**Stretching and Shrinking:** 1.2: Scaling Up and Down; 2.3: Mouthing Off and Nosing Around; 3.2: Rep-Tile Triangles; 3.3: Designing Under Constraints; 3.4: Out of Reach; 4.1: Ratios Within Similar Parallelograms; 4.2: Ratios Within Similar Triangles; 4.3: Finding Missing Parts; 4.4: Using Shadows to Find Heights; **Comparing and Scaling:** 1.1: Surveying Opinions; 1.2: Mixing Juice; 1.3: Time to Concentrate; 1.4: Keeping Things in Proportion; 2.1: Sharing Pizza; 2.2: Comparing Pizza Prices; 2.3: Finding Costs; 3.1: Commissions, Markups, and Discounts; 3.3: Mixing it Up **Moving Straight Ahead:** 1.2: Walking Rates and Linear Relationships; 1.3: Raising Money **What Do You Expect?:** 2.2 Choosing Marbles; 2.3: Designing a Fair Game; 2.4: Winning the Bonus Prize; 3.1: Designing a Spinner to Find Probabilities; 3.2: Making Decisions; 3.3: Roller Derby; 3.4: Scratching Spots
a. Determine when two quantities are in a proportional relationship.	**Stretching and Shrinking:** 2.3: Mouthing Off and Nosing Around; 3.1: Rep-Tile Quadrilaterals; 3.2: Rep-Tile Triangles; 3.3: Designing Under Constraints; 3.4: Out of Reach; 4.1: Ratios Within Similar Parallelograms; 4.2: Ratios Within Similar Triangles; 4.3: Finding Missing Parts; 4.4: Using Shadows to Find Heights **Comparing and Scaling:** 1.1: Surveying Opinions; 2.1: Sharing Pizza; 2.2: Comparing Pizza Prices; 2.3: Finding Costs; 3.3: Mixing it Up **Moving Straight Ahead:** 1.2: Walking Rates and Linear Relationships; 1.3: Raising Money

Missouri Learning Standards: Grade-Level Expectations Grade 7	**enVisionmath2.0 Grades 6-8 Grade 7 Lessons**
(Continued) a. Determine when two quantities are in a proportional relationship.	**What Do You Expect?:** 1.1: Choosing Cereal; 1.2: Tossing Paper Cups; 1.3 One More Try; 2.1 Predicting to Win; 2.2 Choosing Marbles; 2.3: Designing a Fair Game; 2.4: Winning the Bonus Prize; 3.1: Designing a Spinner to Find Probabilities; 3.4: Scratching Spots; 4.2: Making Purple; 4.3: One-and-One Free Throws: Simulating a Probability Situation; 5.1: Guessing Answers: Finding More Expected Values
b. Identify and/or compute the constant of proportionality (unit rate).	**Stretching and Shrinking:** 1.2: Scaling Up and Down; 2.3: Mouthing Off and Nosing Around; 3.1: Rep-Tile Quadrilaterals; 3.2: Rep-Tile Triangles; 3.4: Out of Reach; 4.1: Ratios Within Similar Parallelograms; 4.2: Ratios Within Similar Triangles; 4.3: Finding Missing Parts; 4.4: Using Shadows to Find Heights **Comparing and Scaling:** 1.2: Mixing Juice; 1.3: Time to Concentrate; 1.4: Keeping Things in Proportion; 2.1: Sharing Pizza; 2.2: Comparing Pizza Prices; 2.3: Finding Costs; 3.1: Commissions, Markups, and Discounts; 3.3: Mixing it Up **Moving Straight Ahead:** 1.1: Walking Marathons; 1.2: Walking Rates and Linear Relationships; 1.3: Raising Money; 2.1: Henri and Emile's Race; 2.2: Crossing the Line; 2.3: Comparing Costs; 2.4: Connecting Tables; Graphs, and Equations; 2.3: Comparing Costs
c. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation.	**Comparing and Scaling:** 2.2: Comparing Pizza Prices; 2.3: Finding Costs; 3.3: Mixing it Up **Moving Straight Ahead:** 2.1: Henri and Emile's Race; 2.2: Crossing the Line; 2.3: Comparing Costs
d. Recognize that the graph of any proportional relationship will pass through the origin.	**Comparing and Scaling:** 1.4: Keeping Things in Proportion; 2.2: Comparing Pizza Prices; 2.3: Finding Costs; 3.1: Commissions, Markups, and Discounts; 3.3: Mixing it Up **Moving Straight Ahead:** 2.1: Henri and Emile's Race; 2.2: Crossing the Line; 2.3: Comparing Costs

Missouri Learning Standards: Grade-Level Expectations Grade 7	**enVisionmath2.0 Grades 6-8 Grade 7 Lessons**
3 Solve problems involving ratios, rates, percentages and proportional relationships.	**Stretching and Shrinking:** 3.1: Rep-Tile Quadrilaterals; 3.2: Rep-Tile Triangles; 3.3: Designing Under Constraints; 3.4: Out of Reach; 4.1: Ratios Within Similar Parallelograms; 4.2: Ratios Within Similar Triangles; 4.3: Finding Missing Parts; 4.4: Using Shadows to Find Heights **Comparing and Scaling:** 1.2: Mixing Juice; 1.3: Time to Concentrate; 1.4: Keeping Things in Proportion; 2.1: Sharing Pizza; 3.1: Commissions, Markups, and Discounts **What Do You Expect?:** 2.2 Choosing Marbles; 2.3: Designing a Fair Game; 2.4: Winning the Bonus Prize; 3.2: Making Decisions; 3.3: Roller Derby; 3.4: Scratching Spots; 4.2: Making Purple; 4.3: One-and-One Free Throws: Simulating a Probability Situation; 5.1: Guessing Answers: Finding More Expected Values
Number Sense and Operations	
A Apply and extend previous understandings of operations to add, subtract, multiply and divide rational numbers.	
1 Apply and extend previous understandings of numbers to add and subtract rational numbers.	**Accentuate the Negative:** 1.1: Playing Math Fever; 1.2: Extending the Number Line; 1.3 From Sauna to Snowbank; 1.4: In the Chips; 2.1: Extending Addition to Rational Numbers; 2.2 Extending Subtraction to Rational Numbers; 2.3: The "+/-" Connection; 2.4: Fact Families; 4.1: Order of Operations; 4.2: The Distributive Property; 4.3: What Operations Are Needed?
a. Add and subtract rational numbers.	**Accentuate the Negative:** 1.1: Playing Math Fever; 1.2: Extending the Number Line; 1.3 From Sauna to Snowbank; 1.4: In the Chips; 2.1: Extending Addition to Rational Numbers; 2.2 Extending Subtraction to Rational Numbers; 2.3: The "+/-" Connection; 2.4: Fact Families; 4.1: Order of Operations; 4.2: The Distributive Property; 4.3: What Operations Are Needed?
b. Represent addition and subtraction on a horizontal or vertical number line.	**Accentuate the Negative:** 1.1: Playing Math Fever; 1.2: Extending the Number Line; 1.3 From Sauna to Snowbank; 1.4: In the Chips; 2.1: Extending Addition to Rational Numbers; 2.2 Extending Subtraction to Rational Numbers; 2.3: The "+/-" Connection; 2.4: Fact Families

Missouri Learning Standards: Grade-Level Expectations Grade 7	**enVisionmath2.0 Grades 6-8 Grade 7 Lessons**
c. Describe situations and show that a number and its opposite have a sum of 0 (additive inverses).	**Accentuate the Negative:** 1.2: Extending the Number Line; 1.3 From Sauna to Snowbank; 1.4: In the Chips; 2.1: Extending Addition to Rational Numbers; 2.2 Extending Subtraction to Rational Numbers; 2.3: The "+/-" Connection; 2.4: Fact Families
d. Understand subtraction of rational numbers as adding the additive inverse.	**Accentuate the Negative:** 1.3 From Sauna to Snowbank; 1.4: In the Chips; 2.1: Extending Addition to Rational Numbers; 2.2 Extending Subtraction to Rational Numbers; 2.3: The "+/-" Connection; 2.4: Fact Families
e. Determine the distance between two rational numbers on the number line is the absolute value of their difference.	**Accentuate the Negative:** 1.3 From Sauna to Snowbank; 1.4: In the Chips; 2.1: Extending Addition to Rational Numbers; 2.2 Extending Subtraction to Rational Numbers; 2.3: The "+/-" Connection; 2.4: Fact Families
f. Interpret sums and differences of rational numbers.	**Accentuate the Negative:** 1.1: Playing Math Fever; 1.2: Extending the Number Line; 1.3 From Sauna to Snowbank; 1.4: In the Chips; 2.1: Extending Addition to Rational Numbers; 2.2 Extending Subtraction to Rational Numbers; 2.3: The "+/-" Connection; 2.4: Fact Families; 4.1: Order of Operations; 4.2: The Distributive Property; 4.3: What Operations Are Needed?
2 Apply and extend previous understandings of numbers to multiply and divide rational numbers.	**Accentuate the Negative:** 3.1: Multiplication Patterns; 3.2: Multiplication of Rational Numbers; 3.3 Division of Rational Numbers; 3.4: Playing the Integer Product Game; 4.1: Order of Operations; 4.2: The Distributive Property; 4.3: What Operations Are Needed?
a. Multiply and divide rational numbers.	**Accentuate the Negative:** 3.1: Multiplication Patterns; 3.2: Multiplication of Rational Numbers; 3.3 Division of Rational Numbers; 3.4: Playing the Integer Product Game; 4.1: Order of Operations; 4.2: The Distributive Property; 4.3: What Operations Are Needed?
b. Determine that a number and its reciprocal have a product of 1 (multiplicative inverse).	**Accentuate the Negative:** 3.1: Multiplication Patterns; 3.2: Multiplication of Rational Numbers; 3.3 Division of Rational Numbers; 3.4: Playing the Integer Product Game

Missouri Learning Standards: Grade-Level Expectations Grade 7	**enVisionmath2.0 Grades 6-8 Grade 7 Lessons**
c. Understand that every quotient of integers (with non-zero divisor) is a rational number.	**Accentuate the Negative:** 3.3 Division of Rational Numbers
d. Convert a rational number to a decimal.	**Accentuate the Negative:** 4.1: Order of Operations; 4.2: The Distributive Property; 4.3: What Operations Are Needed?
e. Understand that all rational numbers can be written as fractions or decimal numbers that terminate or repeat.	**Accentuate the Negative:** 3.3 Division of Rational Numbers
f. Interpret products and quotients of rational numbers by describing real-world contexts.	**Accentuate the Negative:** 3.1: Multiplication Patterns; 3.2: Multiplication of Rational Numbers; 3.3 Division of Rational Numbers; 3.4: Playing the Integer Product Game; 4.1: Order of Operations; 4.2: The Distributive Property; 4.3: What Operations Are Needed?
3 Solve problems involving the four arithmetic operations with rational numbers.	**Accentuate the Negative:** 2.2 Extending Subtraction to Rational Numbers; 2.3: The "+/-" Connection; 2.4: Fact Families; 3.1: Multiplication Patterns; 3.2: Multiplication of Rational Numbers; 3.3 Division of Rational Numbers; 3.4: Playing the Integer Product Game **Filling and Wrapping:** 2.2: Packing A Prism; 3.2: Pricing Pizza; 4.1: Networking; 4.2: Wrapping Paper; 4.3: Comparing Juice Containers; 4.4: Filling Cones and Spheres; 4.5: Comparing Volumes of Spheres, Cylinders, and Cones
Expressions, Equations and Inequalities	
A Use properties of operations to generate equivalent expressions.	
1 Apply properties of operations to simplify and to factor linear algebraic expressions with rational coefficients.	**Moving Straight Ahead:** 3.2: Mystery Pouches in the Kingdom of Montarek; 3.3: From Pouches to Variables; 3.4: Solving Linear Equations; 3.5: Finding the Points of Intersection; 4.3: Exploring Patterns With Lines; 4.4: Pulling it All Together
2 Understand how to use equivalent expressions to clarify quantities in a problem.	**Shapes and Designs:** 2.1: Angle Sums of Regular Polygons; 2.2: Angle Sums of Any Polygon; 2.3: The Bees Do It: Polygons in Nature; 2.4: The Ins and Outs of Polygons

Missouri Learning Standards: Grade-Level Expectations Grade 7	**enVisionmath2.0 Grades 6-8 Grade 7 Lessons**
(Continued) 2 Understand how to use equivalent expressions to clarify quantities in a problem.	**Moving Straight Ahead:** 3.1: Solving Equations Using Tables and Graphs; 3.2: Mystery Pouches in the Kingdom of Montarek; 3.3: From Pouches to Variables; 3.4: Solving Linear Equations; 3.5: Finding the Points of Intersection; 4.1: Climbing Stairs; 4.3: Exploring Patterns With Lines; 4.4: Pulling it All Together
B Solve problems using numerical and algebraic expressions and equations.	
1 Solve multi-step problems posed with rational numbers.	**Moving Straight Ahead:** 1.1: Walking Marathons; 1.3: Raising Money; 1.4 Using The Walkathon Relationships; 2.3: Comparing Costs; 2.4: Connecting Tables; 3.1: Solving Equations Using Tables and Graphs; 3.3: From Pouches to Variables; 3.4: Solving Linear Equations; 3.5: Finding the Points of Intersection; 4.4: Pulling it All Together
a. Convert between equivalent forms of the same number.	**Moving Straight Ahead:** 1.1: Walking Marathons; 1.3: Raising Money; 1.4 Using The Walkathon Relationships; 2.3: Comparing Costs; 2.4: Connecting Tables; 3.1: Solving Equations Using Tables and Graphs; 3.3: From Pouches to Variables; 3.4: Solving Linear Equations; 3.5: Finding the Points of Intersection; 4.4: Pulling it All Together
b. Assess the reasonableness of answers using mental computation and estimation strategies.	**Moving Straight Ahead:** 1.1: Walking Marathons; 1.3: Raising Money; 1.4 Using The Walkathon Relationships; 2.3: Comparing Costs; 2.4: Connecting Tables; 3.1: Solving Equations Using Tables and Graphs; 3.3: From Pouches to Variables; 3.4: Solving Linear Equations; 3.5: Finding the Points of Intersection; 4.4: Pulling it All Together
2 Write and/or solve linear equations and inequalities in one variable.	**Moving Straight Ahead:** 1.1: Walking Marathons; 1.2: Walking Rates and Linear Relationships; 2.2: Crossing the Line; 2.3: Comparing Costs; 3.3: From Pouches to Variables; 3.5: Finding the Points of Intersection; 4.1: Climbing Stairs; 4.2: Finding the Slope of a Line; 4.3: Exploring Patterns With Lines; 4.4: Pulling it All Together

Missouri Learning Standards: Grade-Level Expectations Grade 7	enVisionmath2.0 Grades 6-8 Grade 7 Lessons
a. Write and/or solve equations of the form x+p = q and px = q in which p and q are rational numbers.	**Moving Straight Ahead:** 1.3: Raising Money; 1.4 Using The Walkathon Relationships; 2.1: Henri and Emile's Race; 2.2: Crossing the Line; 2.3: Comparing Costs; 2.4: Connecting Tables; Graphs, and Equations; 2.3: Comparing Costs; 3.1: Solving Equations Using Tables and Graphs; 3.2: Mystery Pouches in the Kingdom of Montarek; 3.3: From Pouches to Variables; 3.4: Solving Linear Equations; 3.5: Finding the Points of Intersection; 4.1: Climbing Stairs; 4.4: Pulling it All Together
b. Write and/or solve two-step equations of the form px + q = r and p(x + q) = r, where p, q and r are rational numbers, and interpret the meaning of the solution in the context of the problem.	**Moving Straight Ahead:** 1.3: Raising Money; 1.4 Using The Walkathon Relationships; 2.1: Henri and Emile's Race; 2.2: Crossing the Line; 2.3: Comparing Costs; 2.4: Connecting Tables; Graphs, and Equations; 2.3: Comparing Costs; 3.1: Solving Equations Using Tables and Graphs; 3.2: Mystery Pouches in the Kingdom of Montarek; 3.3: From Pouches to Variables; 3.4: Solving Linear Equations; 3.5: Finding the Points of Intersection; 4.1: Climbing Stairs; 4.4: Pulling it All Together
c. Write, solve and/or graph inequalities of the form px + q > r or px + q < r, where p, q and r are rational numbers.	**Moving Straight Ahead:** 3.5: Finding the Points of Intersection
Geometry and Measurement	
A Draw and describe geometrical figures and describe the relationships between them.	
1 Solve problems involving scale drawings of real objects and geometric figures, including computing actual lengths and areas from a scale drawing and reproducing the drawing at a different scale.	**Stretching and Shrinking:** 1.1: Solving a Mystery; 1.2: Scaling Up and Down; 2.1: Drawing Wumps; 2.2: Hats Off to the Wumps; 2.3: Mouthing Off and Nosing Around; 3.1: Rep-Tile Quadrilaterals; 3.2: Rep-Tile Triangles; 3.3: Designing Under Constraints; 3.4: Out of Reach; 4.1: Ratios Within Similar Parallelograms; 4.2: Ratios Within Similar Triangles; 4.3: Finding Missing Parts; 4.4: Using Shadows to Find Heights
2 Use a variety of tools to construct geometric shapes.	**Shapes and Designs:** 1.1: Sorting and Sketching Polygons; 1.2: In a Spin: Angles and Rotations; 1.3: Estimating Measures of Rotations and Angles; 1.4: Measuring Angles; 1.5: Design Challenge I: Drawing with Tools—Ruler and Protractor; 2.1: Angle Sums of Regular Polygons; 2.2: Angle Sums of Any Polygon; 2.3: The Bees Do It: Polygons in Nature; 2.4: The Ins and Outs of Polygons; 3.1: Building Triangles; 3.2: Design Challenge II: Drawing Triangles; 3.3: Building Quadrilaterals

Missouri Learning Standards: Grade-Level Expectations Grade 7	**enVisionmath2.0 Grades 6-8 Grade 7 Lessons**
a. Determine if provided constraints will create a unique triangle through construction.	**Shapes and Designs:** 3.1: Building Triangles; 3.2: Design Challenge II: Drawing Triangles
b. Construct special quadrilaterals given specific parameters.	**Shapes and Designs:** 3.3: Building Quadrilaterals
3 Describe two-dimensional cross sections of pyramids, prisms, cones and cylinders.	**Filling and Wrapping:** 2.3: Slicing Prisms and Pyramids
4 Understand concepts of circles.	**Filling and Wrapping:** 3.1: Going Around in Circles; 3.2: Pricing Pizza; 3.3: Squaring a Circle to Find Its Area; 3.4: Connecting Circumference and Area
a. Analyze the relationships among the circumference, the radius, the diameter, the area and Pi in a circle.	**Filling and Wrapping:** 3.1: Going Around in Circles; 3.2: Pricing Pizza; 3.3: Squaring a Circle to Find Its Area; 3.4: Connecting Circumference and Area
b. Know and apply the formulas for circumference and area of circles to solve problems.	**Filling and Wrapping:** 3.1: Going Around in Circles; 3.2: Pricing Pizza; 3.3: Squaring a Circle to Find Its Area; 3.4: Connecting Circumference and Area
B Apply and extend previous understanding of angle measure, area and volume.	
1 Use angle properties to write and solve equations for an unknown angle.	**Shapes and Designs:** 2.1: Angle Sums of Regular Polygons; 2.2: Angle Sums of Any Polygon; 2.3: The Bees Do It: Polygons in Nature; 2.4: The Ins and Outs of Polygons;
2 Understand the relationship between area, surface area and volume.	**Filling and Wrapping:** 1.1: How Big Are Those Boxes?; 1.2: Optimal Containers I; 1.3: Optimal Containers II; 1.4: Compost Containers; 2.1: Folding Paper; 2.2: Packing A Prism
a. Find the area of triangles, quadrilaterals and other polygons composed of triangles and rectangles.	**Filling and Wrapping:** 3.1: Going Around in Circles; 3.2: Pricing Pizza; 3.3: Squaring a Circle to Find Its Area; 4.1: Networking; 4.2: Wrapping Paper
b. Find the volume and surface area of prisms, pyramids and cylinders.	**Filling and Wrapping:** 4.1: Networking; 4.2: Wrapping Paper; 4.3: Comparing Juice Containers; 4.4: Filling Cones and Spheres; 4.5: Comparing Volumes of Spheres, Cylinders, and Cones

Missouri Learning Standards: Grade-Level Expectations Grade 7	enVisionmath2.0 Grades 6-8 Grade 7 Lessons
Data Analysis, Statistics and Probability	
A Use random sampling to draw inferences about a population.	
1 Understand that statistics can be used to gain information about a population by examining a sample of the population.	**Samples and Populations:** 1.1: Comparing Performances; 1.4: Are Steel-Frame Coasters Faster Than Wood-Frame Coasters?; 2.1: Asking About Honesty; 2.2: Selecting a Sample; 2.3: Choosing Random Samples; 2.4: Growing Samples 3.1: Solving an Archeological Mystery; 3.2: Comparing Heights of Basketball Players; 3.3: Five Chocolate Chips in Every Cookie; 3.4: Estimating a Deer Population
a. Understand that a sample is a subset of a population.	**Samples and Populations:** 1.1: Comparing Performances; 1.4: Are Steel-Frame Coasters Faster Than Wood-Frame Coasters?; 2.1: Asking About Honesty; 2.2: Selecting a Sample; 2.3: Choosing Random Samples; 2.4: Growing Samples 3.1: Solving an Archeological Mystery; 3.2: Comparing Heights of Basketball Players; 3.3: Five Chocolate Chips in Every Cookie; 3.4: Estimating a Deer Population
b. Understand that generalizations from a sample are valid only if the sample is representative of the population.	**Samples and Populations:** 1.1: Comparing Performances; 1.4: Are Steel-Frame Coasters Faster Than Wood-Frame Coasters?; 2.1: Asking About Honesty; 2.2: Selecting a Sample; 2.3: Choosing Random Samples; 2.4: Growing Samples 3.1: Solving an Archeological Mystery; 3.2: Comparing Heights of Basketball Players; 3.3: Five Chocolate Chips in Every Cookie; 3.4: Estimating a Deer Population
c. Understand that random sampling is used to produce representative samples and support valid inferences.	**Samples and Populations:** 1.1: Comparing Performances; 1.4: Are Steel-Frame Coasters Faster Than Wood-Frame Coasters?; 2.1: Asking About Honesty; 2.2: Selecting a Sample; 2.3: Choosing Random Samples; 2.4: Growing Samples 3.1: Solving an Archeological Mystery; 3.2: Comparing Heights of Basketball Players; 3.3: Five Chocolate Chips in Every Cookie; 3.4: Estimating a Deer Population
2 Use data from multiple samples to draw inferences about a population and investigate variability in estimates of the characteristic of interest.	**Samples and Populations:** 1.4: Are Steel-Frame Coasters Faster Than Wood-Frame Coasters?; 2.1: Asking About Honesty; 2.3: Choosing Random Samples; 2.4: Growing Samples; 3.3: Five Chocolate Chips in Every Cookie; 3.4: Estimating a Deer Population

Missouri Learning Standards: Grade-Level Expectations Grade 7	enVisionmath2.0 Grades 6-8 Grade 7 Lessons
B Draw informal comparative inferences about two populations.	
1 Analyze different data distributions using statistical measures.	**Samples and Populations:** 1.1: Comparing Performances; 1.2: Which Team Is Most Successful?; 1.4: Are Steel-Frame Coasters Faster Than Wood-Frame Coasters?; 3.1: Solving an Archeological Mystery; 3.2: Comparing Heights of Basketball Players
2 Compare the numerical measures of center, measures of frequency and measures of variability from two random samples to draw inferences about the population.	**Samples and Populations:** 1.1: Comparing Performances; 1.2: Which Team Is Most Successful?; 1.4: Are Steel-Frame Coasters Faster Than Wood-Frame Coasters?; 3.1: Solving an Archeological Mystery; 3.2: Comparing Heights of Basketball Players
C Develop, use and evaluate probability models.	
1 Investigate the probability of chance events.	**What Do You Expect?:** 2.1 Predicting to Win; 2.2 Choosing Marbles; 2.3: Designing a Fair Game; 2.4: Winning the Bonus Prize; 3.1: Designing a Spinner to Find Probabilities; 3.2: Making Decisions; 3.3: Roller Derby; 3.4: Scratching Spots; 4.1: Drawing Area Models to Find the Sample Space; 4.2: Making Purple; 4.3: One-and-One Free Throws: Simulating a Probability Situation; 4.4: Finding Expected Value
a. Determine probabilities of simple events.	**What Do You Expect?:** 2.1 Predicting to Win; 2.2 Choosing Marbles; 2.3: Designing a Fair Game; 2.4: Winning the Bonus Prize; 3.1: Designing a Spinner to Find Probabilities; 3.2: Making Decisions; 3.3: Roller Derby; 3.4: Scratching Spots; 4.1: Drawing Area Models to Find the Sample Space; 4.2: Making Purple; 4.3: One-and-One Free Throws: Simulating a Probability Situation; 4.4: Finding Expected Value
b. Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring.	**What Do You Expect?:** 2.1 Predicting to Win; 2.2 Choosing Marbles; 2.3: Designing a Fair Game; 2.4: Winning the Bonus Prize; 3.1: Designing a Spinner to Find Probabilities; 3.2: Making Decisions; 3.3: Roller Derby; 3.4: Scratching Spots; 4.1: Drawing Area Models to Find the Sample Space; 4.2: Making Purple; 4.3: One-and-One Free Throws: Simulating a Probability Situation; 4.4: Finding Expected Value

Missouri Learning Standards: Grade-Level Expectations Grade 7	**enVisionmath2.0 Grades 6-8 Grade 7 Lessons**
2 Investigate the relationship between theoretical and experimental probabilities for simple events.	**What Do You Expect?:** 2.1 Predicting to Win; 2.2 Choosing Marbles; 2.3: Designing a Fair Game; 2.4: Winning the Bonus Prize; 3.1: Designing a Spinner to Find Probabilities; 3.2: Making Decisions; 3.3: Roller Derby; 3.4: Scratching Spots; 4.1: Drawing Area Models to Find the Sample Space; 4.2: Making Purple; 4.3: One-and-One Free Throws: Simulating a Probability Situation; 4.4: Finding Expected Value
a. Predict outcomes using theoretical probability.	**What Do You Expect?:** 2.1 Predicting to Win; 2.2 Choosing Marbles; 2.3: Designing a Fair Game; 2.4: Winning the Bonus Prize; 3.1: Designing a Spinner to Find Probabilities; 3.2: Making Decisions; 3.3: Roller Derby; 3.4: Scratching Spots; 4.1: Drawing Area Models to Find the Sample Space; 4.2: Making Purple; 4.3: One-and-One Free Throws: Simulating a Probability Situation; 4.4: Finding Expected Value
b. Perform experiments that model theoretical probability.	**What Do You Expect?:** 2.1 Predicting to Win; 2.2 Choosing Marbles; 2.3: Designing a Fair Game; 2.4: Winning the Bonus Prize; 3.1: Designing a Spinner to Find Probabilities; 3.2: Making Decisions; 3.3: Roller Derby; 3.4: Scratching Spots; 4.1: Drawing Area Models to Find the Sample Space; 4.2: Making Purple; 4.3: One-and-One Free Throws: Simulating a Probability Situation; 4.4: Finding Expected Value
c. Compare theoretical and experimental probabilities.	**What Do You Expect?:** 2.1 Predicting to Win; 2.2 Choosing Marbles; 2.3: Designing a Fair Game; 2.4: Winning the Bonus Prize; 3.1: Designing a Spinner to Find Probabilities; 3.2: Making Decisions; 3.3: Roller Derby; 3.4: Scratching Spots; 4.1: Drawing Area Models to Find the Sample Space; 4.2: Making Purple; 4.3: One-and-One Free Throws: Simulating a Probability Situation; 4.4: Finding Expected Value

A Correlation of Connected Mathematics Project 3 (CMP3) ©2017
To the Missouri Learning Standards: Grade Level Expectations

Missouri Learning Standards: Grade-Level Expectations Grade 7	**enVisionmath2.0 Grades 6-8 Grade 7 Lessons**
3 Explain possible discrepancies between a developed probability model and observed frequencies.	**What Do You Expect?:** 1.1: Choosing Cereal; 1.2: Tossing Paper Cups; 1.3 One More Try; 1.4 Analyzing Events; 2.1 Predicting to Win; 2.2 Choosing Marbles; 2.3: Designing a Fair Game; 2.4: Winning the Bonus Prize; 3.1: Designing a Spinner to Find Probabilities; 3.2: Making Decisions; 3.3: Roller Derby; 3.4: Scratching Spots; 4.1: Drawing Area Models to Find the Sample Space; 4.2: Making Purple; 4.3: One-and-One Free Throws: Simulating a Probability Situation; 4.4: Finding Expected Value; 5.1: Guessing Answers: Finding More Expected Values; 5.2: Ortonville: Binomial Probability; 5.3: A Baseball Series: Expanding Binomial Probability
a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events.	**What Do You Expect?:** 4.1: Drawing Area Models to Find the Sample Space; 4.2: Making Purple; 4.3: One-and-One Free Throws: Simulating a Probability Situation; 4.4: Finding Expected Value; 5.1: Guessing Answers: Finding More Expected Values; 5.2: Ortonville: Binomial Probability; 5.3: A Baseball Series: Expanding Binomial Probability
b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process.	**What Do You Expect?:** 1.1: Choosing Cereal; 1.2: Tossing Paper Cups; 1.3 One More Try; 1.4 Analyzing Events; 2.1 Predicting to Win; 2.2 Choosing Marbles; 2.3: Designing a Fair Game; 2.4: Winning the Bonus Prize; 3.1: Designing a Spinner to Find Probabilities; 3.2: Making Decisions; 3.3: Roller Derby; 3.4: Scratching Spots
4 Find probabilities of compound events using organized lists, tables, tree diagrams and simulations.	**What Do You Expect?:** 2.3: Designing a Fair Game; 3.4: Scratching Spots; 4.1: Drawing Area Models to Find the Sample Space; 4.4: Finding Expected Value; 5.2: Ortonville: Binomial Probability
a. Represent the sample space of a compound event.	**What Do You Expect?:** 3.2: Making Decisions; 3.3: Roller Derby; 3.4: Scratching Spots; 4.1: Drawing Area Models to Find the Sample Space; 4.2: Making Purple; 4.3: One-and-One Free Throws: Simulating a Probability Situation; 4.4: Finding Expected Value; 5.1: Guessing Answers: Finding More Expected Values
b. Design and use a simulation to generate frequencies for compound events.	**What Do You Expect?:** 2.3: Designing a Fair Game; 3.4: Scratching Spots; 4.1: Drawing Area Models to Find the Sample Space

Missouri Learning Standards: Grade-Level Expectations Grade 8	enVisionmath2.0 Grades 6-8 Grade 8 Lessons
Number Sense and Operations	
A Know that there are numbers that are not rational, and approximate them by rational numbers.	
1 Explore the real number system.	**Looking for Pythagoras:** 4.2: Representing Fractions and Decimals; 4.3: Representing Decimals and Fractions; 4.4: Getting Real: Irrational Numbers
a. Know the differences between rational and irrational numbers.	**Looking for Pythagoras:** 4.2: Representing Fractions and Decimals; 4.3: Representing Decimals and Fractions; 4.4: Getting Real: Irrational Numbers
b. Understand that all rational numbers have a decimal expansion that terminates or repeats.	**Looking for Pythagoras:** 4.2: Representing Fractions and Decimals; 4.3: Representing Decimals and Fractions; 4.4: Getting Real: Irrational Numbers
c. Convert decimals which repeat into fractions and fractions into repeating decimals.	**Looking for Pythagoras:** 4.2: Representing Fractions and Decimals; 4.3: Representing Decimals and Fractions; 4.4: Getting Real: Irrational Numbers
d. Generate equivalent representations of rational numbers.	**Looking for Pythagoras:** 4.2: Representing Fractions and Decimals; 4.3: Representing Decimals and Fractions; 4.4: Getting Real: Irrational Numbers
2 Estimate the value and compare the size of irrational numbers and approximate their locations on a number line.	**Looking for Pythagoras:** 2.2: Square Roots; 2.3: Using Squares to Find Lengths; 2.4: Cube Roots; 4.1: Analyzing the Wheel of Theodorus; 4.2: Representing Fractions and Decimals; 4.3: Representing Decimals and Fractions; 4.4: Getting Real: Irrational Numbers
Expressions, Equations and Inequalities	
A Work with radicals and integer exponents.	
1 Know and apply the properties of integer exponents to generate equivalent expressions.	**Growing, Growing, Growing:** 5.1: Looking for Patterns-Exponents; 5.2: Rules of Exponents; 5.3: Extending the Rules of Exponents; 5.4: Operations with Scientific Notation; 5.5: Revisiting Exponential Functions
2 Investigate concepts of square and cube roots.	**Looking for Pythagoras:** 2.2: Square Roots; 2.3: Using Squares to Find Lengths; 2.4: Cube Roots **Growing, Growing, Growing:** 5.3: Extending the Rules of Exponents; 5.4: Operations with Scientific Notation; 5.5: Revisiting Exponential Functions

Missouri Learning Standards: Grade-Level Expectations Grade 8	enVisionmath2.0 Grades 6-8 Grade 8 Lessons
a. Solve equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number.	**Looking for Pythagoras:** 2.2: Square Roots; 2.3: Using Squares to Find Lengths; 2.4: Cube Roots **Growing, Growing, Growing:** 5.3: Extending the Rules of Exponents; 5.4: Operations with Scientific Notation; 5.5: Revisiting Exponential Functions
b. Evaluate square roots of perfect squares less than or equal to 625 and cube roots of perfect cubes less than or equal to 1000.	**Looking for Pythagoras:** 2.2: Square Roots; 2.3: Using Squares to Find Lengths; 2.4: Cube Roots **Growing, Growing, Growing:** 5.3: Extending the Rules of Exponents; 5.4: Operations with Scientific Notation; 5.5: Revisiting Exponential Functions
c. Recognize that square roots of non-perfect squares are irrational.	**Looking for Pythagoras:** 2.2: Square Roots; 2.3: Using Squares to Find Lengths; 2.4: Cube Roots **Growing, Growing, Growing:** 5.3: Extending the Rules of Exponents; 5.4: Operations with Scientific Notation; 5.5: Revisiting Exponential Functions
3 Express very large and very small quantities in scientific notation and approximate how many times larger one is than the other.	**Growing, Growing, Growing:** 1.1: Making Ballots; 1.2: Requesting a Reward; 1.3: Making a New Offer; 5.4: Operations with Scientific Notation
4 Use scientific notation to solve problems.	**Growing, Growing, Growing:** 5.4: Operations with Scientific Notation
a. Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used.	**Growing, Growing, Growing:** 5.4: Operations with Scientific Notation
b. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities.	**Growing, Growing, Growing:** 5.4: Operations with Scientific Notation
B Understand the connections between proportional relationships, lines and linear equations.	
1 Graph proportional relationships.	**Thinking With Mathematical Models:** 2.1: Modeling Linear Data Patterns; 2.2: Up and Down the Staircase; 3.1: Rectangles with Fixed Areas; 3.2: Distance, Speed and Time; 4.1: Vitruvian Man Measurements

Missouri Learning Standards: Grade-Level Expectations Grade 8	**enVisionmath2.0 Grades 6-8 Grade 8 Lessons**
a. Interpret the unit rate as the slope of the graph.	**Thinking With Mathematical Models:** 2.1: Modeling Linear Data Patterns; 2.2: Up and Down the Staircase; 3.2: Distance, Speed and Time
b. Compare two different proportional relationships.	**Thinking With Mathematical Models:** 2.1: Modeling Linear Data Patterns; 2.2: Up and Down the Staircase; 3.1: Rectangles with Fixed Areas; 3.2: Distance, Speed and Time; 4.1: Vitruvian Man Measurements
2 Apply concepts of slope and y-intercept to graphs, equations and proportional relationships.	**Thinking With Mathematical Models:** 2.2: Up and Down the Staircase
a. Explain why the slope (m) is the same between any two distinct points on a non-vertical line in the Cartesian coordinate plane.	**Thinking With Mathematical Models:** 2.2: Up and Down the Staircase
b. Derive the equation y = mx for a line through the origin and the equation y = mx + b for a line intercepting the vertical axis at b.	**Thinking With Mathematical Models:** 2.2: Up and Down the Staircase
C Analyze and solve linear equations and inequalities and pairs of simultaneous linear equations.	
1 Solve linear equations and inequalities in one variable.	**Thinking With Mathematical Models:** 2.4: Boat Rental Business; 2.5: Amusement Park or Models **Say It With Symbols:** 3.1: Selling Greeting Cards-Equations; 3.2: Comparing Costs-Equations; 5.1: Using Algebra to Solve a Puzzle **It's In The System:** 3.1: Comparing Security Services-Linear Inequalities; 3.2: Solving Linear Inequalities Symbolically
a. Create and identify linear equations with one solution, infinitely many solutions or no solutions.	**Thinking With Mathematical Models:** 2.4: Boat Rental Business; 2.5: Amusement Park or Models **Say It With Symbols:** 3.1: Selling Greeting Cards-Equations; 3.2: Comparing Costs-Equations; 5.1: Using Algebra to Solve a Puzzle

Missouri Learning Standards: Grade-Level Expectations Grade 8	**enVisionmath2.0 Grades 6-8 Grade 8 Lessons**
b. Solve linear equations and inequalities with rational number coefficients, including equations and inequalities whose solutions require expanding expressions using the distributive property and combining like terms.	**Thinking With Mathematical Models:** 2.4: Boat Rental Business; 2.5: Amusement Park or Models **Say It With Symbols:** 3.1: Selling Greeting Cards-Equations; 3.2: Comparing Costs-Equations; 5.1: Using Algebra to Solve a Puzzle **It's In The System:** 3.1: Comparing Security Services-Linear Inequalities; 3.2: Solving Linear Inequalities Symbolically
2 Analyze and solve systems of linear equations.	**Thinking With Mathematical Models:** 2.5: Amusement Park or Models **It's In The System:** 1.1: Shirts and Caps; 1.2: Connecting Ax + By = C and y = mx + b; 1.3: Booster Club Members; 2.1: Shirts and Caps Again-Solving Systems With y=mx + b; 2.2: Taco Truck Lunch-Solving Systems by Combining Equations I; 2.3: Solving Systems by Combining Equations II
a. Graph systems of linear equations and recognize the intersection as the solution to the system.	**Thinking With Mathematical Models:** 2.5: Amusement Park or Models **It's In The System:** 1.1: Shirts and Caps; 1.2: Connecting Ax + By = C and y = mx + b; 1.3: Booster Club Members; 2.1: Shirts and Caps Again-Solving Systems With y=mx + b; 2.2: Taco Truck Lunch-Solving Systems by Combining Equations I; 2.3: Solving Systems by Combining Equations II
b. Explain why solution(s) to a system of two linear equations in two variables correspond to point(s) of intersection of the graphs.	**Thinking With Mathematical Models:** 2.5: Amusement Park or Models **It's In The System:** 1.1: Shirts and Caps; 1.2: Connecting Ax + By = C and y = mx + b; 1.3: Booster Club Members; 2.1: Shirts and Caps Again-Solving Systems With y=mx + b; 2.2: Taco Truck Lunch-Solving Systems by Combining Equations I; 2.3: Solving Systems by Combining Equations II

Missouri Learning Standards: Grade-Level Expectations Grade 8	**enVisionmath2.0 Grades 6-8 Grade 8 Lessons**
c. Explain why systems of linear equations can have one solution, no solution or infinitely many solutions.	**Thinking With Mathematical Models:** 2.5: Amusement Park or Models **It's In The System:** 1.1: Shirts and Caps; 1.2: Connecting Ax + By = C and y = mx + b; 1.3: Booster Club Members; 2.1: Shirts and Caps Again-Solving Systems With y=mx + b; 2.2: Taco Truck Lunch-Solving Systems by Combining Equations I; 2.3: Solving Systems by Combining Equations II
d. Solve systems of two linear equations.	**Thinking With Mathematical Models:** 2.5: Amusement Park or Models **It's In The System:** 1.1: Shirts and Caps; 1.2: Connecting Ax + By = C and y = mx + b; 1.3: Booster Club Members; 2.1: Shirts and Caps Again-Solving Systems With y=mx + b; 2.2: Taco Truck Lunch-Solving Systems by Combining Equations I; 2.3: Solving Systems by Combining Equations II
Geometry and Measurement	
A Understand congruence and similarity using physical models, transparencies or geometry software.	
1 Verify experimentally the congruence properties of rigid transformations.	**Butterflies, Pinwheels, and Wallpaper:** 1.4: Properties of Transformations; 2.1: Connecting Congruent Polygons; 2.2: Supporting World-Triangles I; 2.3: Minimum Measurement-Triangles II; 3.1: Flipping on a Grid; 3.2: Sliding on a Grid; 3.3: Spinning on a Grid; 3.4: A Special Property of Translations and Half-Turns; 3.5: Parallel Lines-Angle Sums
a. Verify that angle measure, betweeness, collinearity and distance are preserved under rigid transformations.	**Butterflies, Pinwheels, and Wallpaper:** 1.4: Properties of Transformations; 2.1: Connecting Congruent Polygons; 2.2: Supporting World-Triangles I; 2.3: Minimum Measurement-Triangles II; 3.1: Flipping on a Grid; 3.2: Sliding on a Grid; 3.3: Spinning on a Grid; 3.4: A Special Property of Translations and Half-Turns; 3.5: Parallel Lines-Angle Sums

Missouri Learning Standards: Grade-Level Expectations Grade 8	**enVisionmath2.0 Grades 6-8 Grade 8 Lessons**
b. Investigate if orientation is preserved under rigid transformations.	**Butterflies, Pinwheels, and Wallpaper:** 1.4: Properties of Transformations; 2.1: Connecting Congruent Polygons; 2.2: Supporting World-Triangles I; 2.3: Minimum Measurement-Triangles II; 3.1: Flipping on a Grid; 3.2: Sliding on a Grid; 3.3: Spinning on a Grid; 3.4: A Special Property of Translations and Half-Turns; 3.5: Parallel Lines-Angle Sums
2 Understand that two-dimensional figures are congruent if a series of rigid transformations can be performed to map the pre-image to the image.	**Looking for Pythagoras:** 5.2: Analyzing Triangles **Butterflies, Pinwheels, and Wallpaper:** 1.1: Butterfly Symmetry; 1.2: In a Spin; 1.3: Sliding Around; 1.4: Properties of Transformations; 2.1: Connecting Congruent Polygons; 2.2: Supporting World-Triangles I; 2.3: Minimum Measurement-Triangles II; 3.1: Flipping on a Grid; 3.2: Sliding on a Grid; 3.3: Spinning on a Grid; 3.4: A Special Property of Translations and Half-Turns
a. Describe a possible sequence of rigid transformations between two congruent figures.	**Looking for Pythagoras:** 5.2: Analyzing Triangles **Butterflies, Pinwheels, and Wallpaper:** 2.1: Connecting Congruent Polygons; 2.2: Supporting World-Triangles I; 2.3: Minimum Measurement-Triangles II; 3.1: Flipping on a Grid; 3.2: Sliding on a Grid; 3.3: Spinning on a Grid; 3.4: A Special Property of Translations and Half-Turns
3 Describe the effect of dilations, translations, rotations and reflections on two-dimensional figures using coordinates.	**Butterflies, Pinwheels, and Wallpaper:** 4.1: Focus on Dilations; 4.2: Return of Super Sleuth; 4.3: Checking Similarity Without Transformations; 4.4: Using Similar Triangles
4 Understand that two-dimensional figures are similar if a series of transformations (rotations, reflections, translations and dilations) can be performed to map the pre-image to the image.	**Looking for Pythagoras:** 5.2: Analyzing Triangles **Butterflies, Pinwheels, and Wallpaper:** 4.1: Focus on Dilations; 4.2: Return of Super Sleuth; 4.3: Checking Similarity Without Transformations; 4.4: Using Similar Triangles
a. Describe a possible sequence of transformations between two similar figures.	**Looking for Pythagoras:** 5.2: Analyzing Triangles **Butterflies, Pinwheels, and Wallpaper:** 4.1: Focus on Dilations; 4.2: Return of Super Sleuth; 4.3: Checking Similarity Without Transformations; 4.4: Using Similar Triangles

Missouri Learning Standards: Grade-Level Expectations Grade 8	enVisionmath2.0 Grades 6-8 Grade 8 Lessons
5 Explore angle relationships and establish informal arguments.	**Looking for Pythagoras:** 5.2: Analyzing Triangles **Butterflies, Pinwheels, and Wallpaper:** 3.5: Parallel Lines-Angle Sums; 4.3: Checking Similarity Without Transformations; 4.4: Using Similar Triangles
a. Derive the sum of the interior angles of a triangle.	**Looking for Pythagoras:** 5.2: Analyzing Triangles
b. Explore the relationship between the interior and exterior angles of a triangle.	**Looking for Pythagoras:** 5.2: Analyzing Triangles
c. Construct and explore the angles created when parallel lines are cut by a transversal.	**Butterflies, Pinwheels, and Wallpaper:** 3.5: Parallel Lines-Angle Sums
d. Use the properties of similar figures to solve problems.	**Butterflies, Pinwheels, and Wallpaper:** 4.4: Using Similar Triangles
B Understand and apply the Pythagorean Theorem.	
1 Use models to demonstrate a proof of the Pythagorean Theorem and its converse.	**Looking for Pythagoras:** 3.1: Discovering the Pythagorean Theorem; 3.2: A Proof of the Pythagorean Theorem; 3.3: Finding Distances; 3.4: Measuring the Egyptian Way
2 Use the Pythagorean Theorem to determine unknown side lengths in right triangles in problems in two- and three-dimensional contexts.	**Looking for Pythagoras:** 3.1: Discovering the Pythagorean Theorem; 3.3: Finding Distances; 3.4: Measuring the Egyptian Way; 4.1: Analyzing the Wheel of Theodorus
3 Use the Pythagorean Theorem to find the distance between points in a Cartesian coordinate system.	**Looking for Pythagoras:** 3.1: Discovering the Pythagorean Theorem; 3.3: Finding Distances
C Solve problems involving volume of cones, pyramids and spheres.	
1 Solve problems involving surface area and volume.	For related content, please see: **Say It With Symbols:** 2.3: Making Candles-Volumes of Cylinders, Cones and Spheres; 2.4: Selling Ice Cream-Solving Volume Problems
a. Understand the concept of surface area and find surface area of pyramids.	The opportunity to address this standard is in Connected Mathematics Project 3 Grade 7. Please see:, **Filling and Wrapping:** 2.3: Slicing Prisms and Pyramids

Missouri Learning Standards: Grade-Level Expectations Grade 8	enVisionmath2.0 Grades 6-8 Grade 8 Lessons
b. Understand the concepts of volume and find the volume of pyramids, cones and spheres.	For related content, please see: **Say It With Symbols:** 2.3: Making Candles-Volumes of Cylinders, Cones and Spheres; 2.4: Selling Ice Cream-Solving Volume Problems
Data Analysis, Statistics and Probability	
A Investigate patterns of association in bivariate data.	
1 Construct and interpret scatter plots of bivariate measurement data to investigate patterns of association between two quantities.	**Thinking With Mathematical Models:** 1.3: Custom Construction Parts; 2.1: Modeling Linear Data Patterns; 3.4: Modeling Data Patterns; 4.1: Vitruvian Man Measurements; 4.2: Older and Faster Correlations; 4.3: Correlations Coefficients and Outliers
2 Generate and use a trend line for bivariate data, and informally assess the fit of the line.	**Thinking With Mathematical Models:** 1.3: Custom Construction Parts; 2.1: Modeling Linear Data Patterns; 3.4: Modeling Data Patterns; 4.1: Vitruvian Man Measurements; 4.2: Older and Faster Correlations; 4.3: Correlations Coefficients and Outliers
3 Interpret the parameters of a linear model of bivariate measurement data to solve problems.	**Thinking With Mathematical Models:** 1.3: Custom Construction Parts; 2.1: Modeling Linear Data Patterns; 3.4: Modeling Data Patterns; 4.1: Vitruvian Man Measurements; 4.2: Older and Faster Correlations; 4.3: Correlations Coefficients and Outliers
4 Understand the patterns of association in bivariate categorical data displayed in a two-way table.	**Thinking With Mathematical Models:** 5.1: Wood or Steel?; 5.2: Politics of Girls and Boys: Analyzing Data in Two-Way Tables; 5.3: After-School Jobs
a. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects.	**Thinking With Mathematical Models:** 5.1: Wood or Steel?; 5.2: Politics of Girls and Boys: Analyzing Data in Two-Way Tables; 5.3: After-School Jobs
b. Use relative frequencies calculated for rows or columns to describe possible association between the two variables.	**Thinking With Mathematical Models:** 5.1: Wood or Steel?; 5.2: Politics of Girls and Boys: Analyzing Data in Two-Way Tables; 5.3: After-School Jobs

Missouri Learning Standards: Grade-Level Expectations Grade 8	enVisionmath2.0 Grades 6-8 Grade 8 Lessons
Functions	
A Define, evaluate and compare functions.	
1 Explore the concept of functions. (The use of function notation is not required.)	**Thinking With Mathematical Models:** 2.2: Up and Down the Staircase; 3.3: Planning a Field Trip; 4.1: Vitruvian Man Measurements; 4.2: Older and Faster Correlations; 4.3: Correlations Coefficients and Outliers **Growing, Growing, Growing:** 2.1: Killer Plant Strikes Lake Victoria; 2.2: Growing Mold-Functions; 2.3: Studying Snake Populations-Functions; 3.3: Making a Difference; 4.1: Making Smaller Ballots; 4.2: Fighting Fleas
a. Understand that a function assigns to each input exactly one output.	**Thinking With Mathematical Models:** 2.2: Up and Down the Staircase; 3.3: Planning a Field Trip; 4.1: Vitruvian Man Measurements; 4.2: Older and Faster Correlations; 4.3: Correlations Coefficients and Outliers **Growing, Growing, Growing:** 2.1: Killer Plant Strikes Lake Victoria; 2.2: Growing Mold-Functions; 2.3: Studying Snake Populations-Functions; 3.3: Making a Difference; 4.1: Making Smaller Ballots; 4.2: Fighting Fleas
b. Determine if a relation is a function.	**Thinking With Mathematical Models:** 2.2: Up and Down the Staircase; 3.3: Planning a Field Trip; 4.1: Vitruvian Man Measurements; 4.2: Older and Faster Correlations; 4.3: Correlations Coefficients and Outliers **Growing, Growing, Growing:** 2.1: Killer Plant Strikes Lake Victoria; 2.2: Growing Mold-Functions; 2.3: Studying Snake Populations-Functions; 3.3: Making a Difference; 4.1: Making Smaller Ballots; 4.2: Fighting Fleas

Missouri Learning Standards: Grade-Level Expectations Grade 8	enVisionmath2.0 Grades 6-8 Grade 8 Lessons
c. Graph a function.	**Thinking With Mathematical Models:** 2.2: Up and Down the Staircase; 3.3: Planning a Field Trip; 4.1: Vitruvian Man Measurements; 4.2: Older and Faster Correlations; 4.3: Correlations Coefficients and Outliers **Growing, Growing, Growing:** 2.1: Killer Plant Strikes Lake Victoria; 2.2: Growing Mold-Functions; 2.3: Studying Snake Populations-Functions; 3.3: Making a Difference; 4.1: Making Smaller Ballots; 4.2: Fighting Fleas
2 Compare characteristics of two functions each represented in a different way.	**Thinking With Mathematical Models:** 2.2: Up and Down the Staircase; 4.1: Vitruvian Man Measurements; 4.2: Older and Faster Correlations **Growing, Growing, Growing:** 1.1: Making Ballots; 1.2: Requesting a Reward; 1.3: Making a New Offer; 3.2: Investing for the Future; 3.3: Making a Difference; 4.1: Making Smaller Ballots; 4.2: Fighting Fleas; 4.3: Cooling Water
3 Investigate the differences between linear and nonlinear functions. (Continued) 3 Investigate the differences between linear and nonlinear functions.	**Thinking With Mathematical Models:** 1.1: Bridge Thickness and Strength; 1.2: Bridge Length and Strength; 1.3: Custom Construction Parts; 2.1: Modeling Linear Data Patterns; 2.2: Up and Down the Staircase; 2.3: Tree Top Fun; 2.4: Boat Rental Business; 2.5: Amusement Park or Models; 3.1: Rectangles with Fixed Areas; 3.2: Distance, Speed and Time; 3.3: Planning a Field Trip; 4.1: Vitruvian Man Measurements; 4.2: Older and Faster Correlations; 4.3: Correlations Coefficients and Outliers **Growing, Growing, Growing:** 1.1: Making Ballots; 1.2: Requesting a Reward; 1.3: Making a New Offer; 3.1: Reproducing Rabbits; 3.2: Investing for the Future; 3.3: Making a Difference; 4.1: Making Smaller Ballots; 4.2: Fighting Fleas; 4.3: Cooling Water

Missouri Learning Standards: Grade-Level Expectations Grade 8	**enVisionmath2.0 Grades 6-8 Grade 8 Lessons**
a. Interpret the equation y = mx + b as defining a linear function, whose parameters are the slope (m) and the y-intercept (b).	**Thinking With Mathematical Models:** 1.1: Bridge Thickness and Strength; 1.2: Bridge Length and Strength; 1.3: Custom Construction Parts; 2.1: Modeling Linear Data Patterns; 2.2: Up and Down the Staircase; 2.3: Tree Top Fun; 2.4: Boat Rental Business; 2.5: Amusement Park or Models; 3.1: Rectangles with Fixed Areas; 3.2: Distance, Speed and Time; 3.3: Planning a Field Trip; 4.1: Vitruvian Man Measurements; 4.2: Older and Faster Correlations; 4.3: Correlations Coefficients and Outliers
b. Recognize that the graph of a linear function has a constant rate of change	**Thinking With Mathematical Models:** 1.1: Bridge Thickness and Strength; 1.2: Bridge Length and Strength; 1.3: Custom Construction Parts; 2.1: Modeling Linear Data Patterns; 2.2: Up and Down the Staircase; 2.3: Tree Top Fun; 2.4: Boat Rental Business; 2.5: Amusement Park or Models; 3.1: Rectangles with Fixed Areas; 3.2: Distance, Speed and Time; 3.3: Planning a Field Trip; 4.1: Vitruvian Man Measurements; 4.2: Older and Faster Correlations; 4.3: Correlations Coefficients and Outliers
c. Give examples of nonlinear functions.	**Thinking With Mathematical Models:** 1.3: Custom Construction Parts; 2.1: Modeling Linear Data Patterns; 3.1: Rectangles with Fixed Areas; 3.2: Distance, Speed and Time; 3.3: Planning a Field Trip; 3.4: Modeling Data Patterns **Growing, Growing, Growing:** 2.1: Killer Plant Strikes Lake Victoria; 2.2: Growing Mold-Functions; 2.3: Studying Snake Populations-Functions; 3.1: Reproducing Rabbits; 3.3: Making a Difference; 4.1: Making Smaller Ballots; 4.2: Fighting Fleas; 4.3: Cooling Water

Missouri Learning Standards: Grade-Level Expectations Grade 8	enVisionmath2.0 Grades 6-8 Grade 8 Lessons
B Use functions to model relationships between quantities.	
1 Use functions to model linear relationships between quantities.	**Thinking With Mathematical Models:** 1.1: Bridge Thickness and Strength; 1.2: Bridge Length and Strength; 1.3: Custom Construction Parts; 2.1: Modeling Linear Data Patterns; 2.2: Up and Down the Staircase; 2.3: Tree Top Fun; 2.4: Boat Rental Business; 2.5: Amusement Park or Models; 3.1: Rectangles with Fixed Areas; 3.2: Distance, Speed and Time; 3.3: Planning a Field Trip; 4.1: Vitruvian Man Measurements; 4.2: Older and Faster Correlations; 4.3: Correlations Coefficients and Outliers
a. Explain the parameters of a linear function based on the context of a problem.	**Thinking With Mathematical Models:** 1.1: Bridge Thickness and Strength; 1.2: Bridge Length and Strength; 1.3: Custom Construction Parts; 2.1: Modeling Linear Data Patterns; 2.2: Up and Down the Staircase; 2.3: Tree Top Fun; 2.4: Boat Rental Business; 2.5: Amusement Park or Models; 3.1: Rectangles with Fixed Areas; 3.2: Distance, Speed and Time; 3.3: Planning a Field Trip; 4.1: Vitruvian Man Measurements; 4.2: Older and Faster Correlations; 4.3: Correlations Coefficients and Outliers
b. Determine the parameters of a linear function.	**Thinking With Mathematical Models:** 1.1: Bridge Thickness and Strength; 1.2: Bridge Length and Strength; 1.3: Custom Construction Parts; 2.1: Modeling Linear Data Patterns; 2.2: Up and Down the Staircase; 2.3: Tree Top Fun; 2.4: Boat Rental Business; 2.5: Amusement Park or Models; 3.1: Rectangles with Fixed Areas; 3.2: Distance, Speed and Time; 3.3: Planning a Field Trip; 4.1: Vitruvian Man Measurements; 4.2: Older and Faster Correlations; 4.3: Correlations Coefficients and Outliers
c. Determine the x-intercept of a linear function.	**Thinking With Mathematical Models:** 1.1: Bridge Thickness and Strength; 1.2: Bridge Length and Strength; 1.3: Custom Construction Parts; 2.1: Modeling Linear Data Patterns; 2.2: Up and Down the Staircase; 2.3: Tree Top Fun; 2.4: Boat Rental Business; 2.5: Amusement Park or Models; 3.1: Rectangles with Fixed Areas; 3.2: Distance, Speed and Time; 3.3: Planning a Field Trip; 4.1: Vitruvian Man Measurements; 4.2: Older and Faster Correlations; 4.3: Correlations Coefficients and Outliers

A Correlation of Connected Mathematics Project 3 (CMP3) ©2017
To the Missouri Learning Standards: Grade Level Expectations

Missouri Learning Standards: Grade-Level Expectations Grade 8	enVisionmath2.0 Grades 6-8 Grade 8 Lessons
2 Describe the functional relationship between two quantities from a graph or a verbal description.	**Thinking With Mathematical Models:** 1.3: Custom Construction Parts; 2.1: Modeling Linear Data Patterns; 3.1: Rectangles with Fixed Areas; 3.2: Distance, Speed and Time; 3.3: Planning a Field Trip; 3.4: Modeling Data Patterns **Growing, Growing, Growing:** 2.1: Killer Plant Strikes Lake Victoria; 2.2: Growing Mold-Functions; 2.3: Studying Snake Populations-Functions; 3.1: Reproducing Rabbits; 3.3: Making a Difference; 4.1: Making Smaller Ballots; 4.2: Fighting Fleas; 4.3: Cooling Water