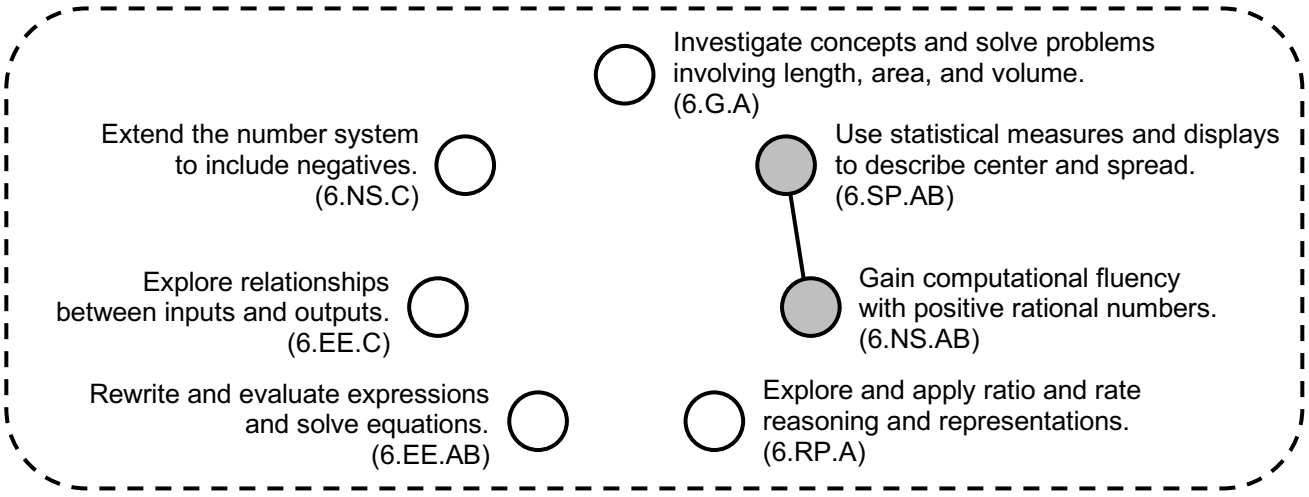
GRADE 6, UNIT 1: Big Ideas and Connections

The Center for Mathematics and Teaching is dedicated to igniting and nurturing passion for mathematics in middle school students. We see the classroom as a place of joy and wonder, collaboration and purpose, perseverance and empowerment. We want all students to succeed in mathematics, as they explore its beauty in patterns, concepts, connections, and applications.

MathLinks: Grade 6 is organized around seven big ideas. This graphic provides a snapshot of the ideas in Unit 1 and their connections to each other.



These ideas build on past work and prepare students for the future. Some of these include:

Prior Work	What's Ahead
• Represent and interpret data, especially line plots (4.MD.B, 5.MD.B) • Add, subtract, multiply and divide whole numbers and decimals to hundredths (5.NBT.B)	• Use random sampling to draw inferences about population(s) (7.SP.A) • Investigate bivariate data (8.SP.A) • Interpret categorical and quantitative data (HS) • Make inferences and justify conclusions about statistical experiments, surveys, and observational studies (HS) • Use statistics as a tool when mathematical modeling (HS)

GRADE 6, UNIT 2: Big Ideas and Connections

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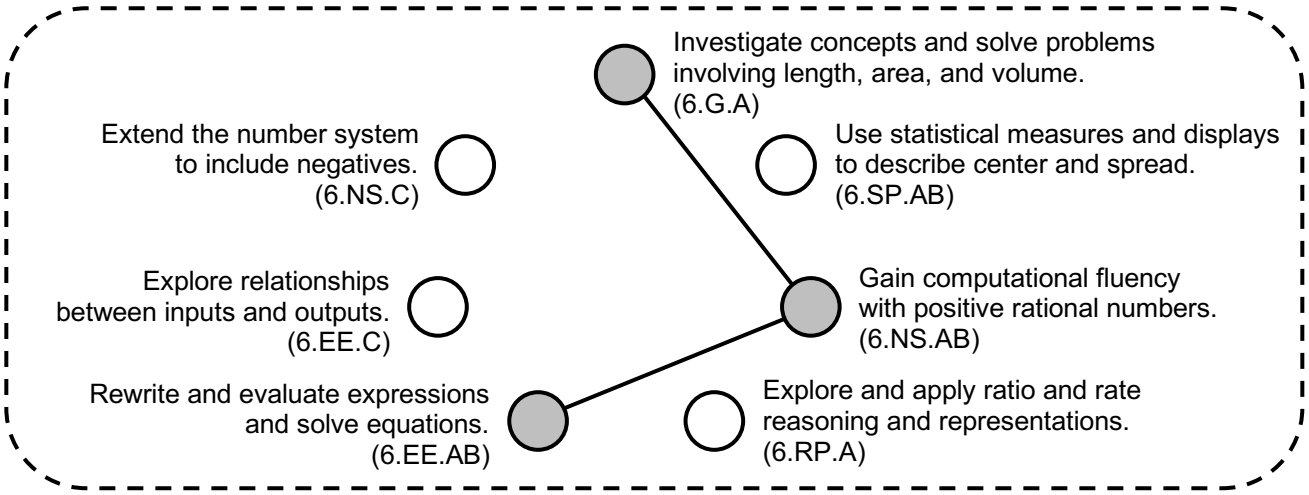
MathLinks: Grade 6 is organized around seven big ideas. This graphic provides a snapshot of the ideas in Unit 2 and their connections to each other.



These ideas build on past work and prepare students for the future. Some of these include:

Prior Work	What's Ahead
• Understand concepts of area and relate area to multiplication (3.MD.C) • Find factors and multiples (4.OA.B) • Find equivalent fractions (4.NF.A) • Use equivalent fractions as a strategy to add and subtract fractions (5.NF.A)	• Perform operations with rational numbers (7.NS.A) • Use concepts of LCM and GCF to rewrite polynomial and rational expressions in algebra (HS)

GRADE 6, UNIT 3: Big Ideas and Connections

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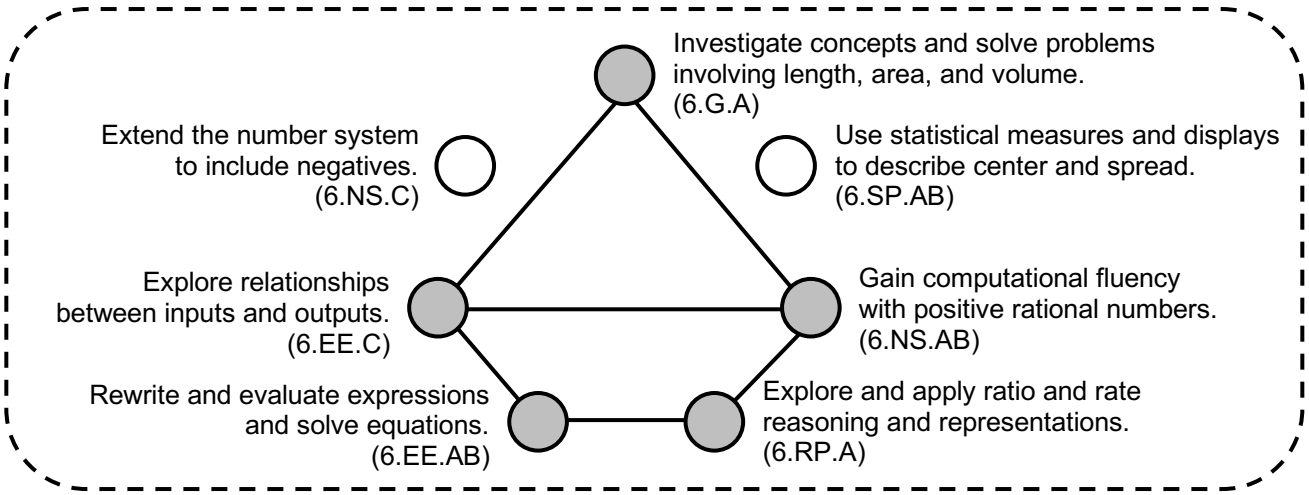
MathLinks: Grade 6 is organized around seven big ideas. This graphic provides a snapshot of the ideas in Unit 3 and their connections to each other.



These ideas build on past work and prepare students for the future. Some of these include:

Prior Work	What's Ahead
• Represent and solve problems involving multiplication and division. (3.OA.ABCD, 3.NBT.A, 4.OA.A, 4.NBT.B, 5.NBT.AB) • Build fluency with concepts and operations of with fractions. (3.NF.A, 4.NF.ABC, 5.NF.AB) • Convert within measurement systems. (4.MD.A, 5.MD.A) • Gain familiarity with factors and multiples. (4.OA.B) • Generate and analyze patterns. (4.OA.C, 5.OA.B)	• Apply proportional reasoning to other contexts, including markups, discounts, interest rates, and percents. (6.RP.A, 7.RP.A) • Use proportional reasoning to make sense of input/output situations. (6.RP.A, 6.EE.C, 7.RP.A) • Build upon proportional reasoning when studying the broader world of functions. (8.F.AB, HS) • Use proportional reasoning to solve problems involving similarity and scale. (7.G.A, 8.EE.B, 8.G.A, HS)

GRADE 6, UNIT 4: Big Ideas and Connections

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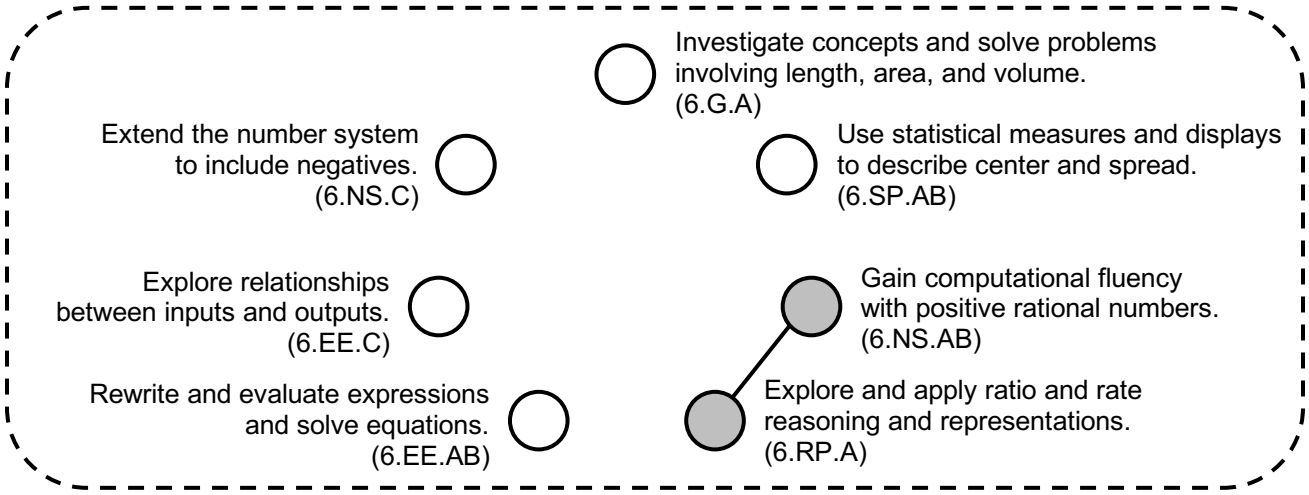
MathLinks: Grade 6 is organized around seven big ideas. This graphic provides a snapshot of the ideas in Unit 4 and their connections to each other.



These ideas build on past work and prepare students for the future. Some of these include:

Prior Work	What's Ahead
• Represent and solve problems involving multiplication and division of whole numbers and decimals. (3.OA.ABCD, 3.NBT.A, 4.OA.A, 4.NBT.B, 5.NBT.B)	• Apply principles of generalized arithmetic procedures to manipulate algebraic expressions. (6.EE.A, 7.RP.A,7.EE.AB, 8.EE.AB, HS)
• Build fluency with concepts and operations of with fractions. (3.NF.A, 4.NF.ABC, 5.NF.AB)	• Applications of mathematics that involve computation, especially division. (7.NS.A, 8.EE.A, HS)

GRADE 6, UNIT 5: Big Ideas and Connections

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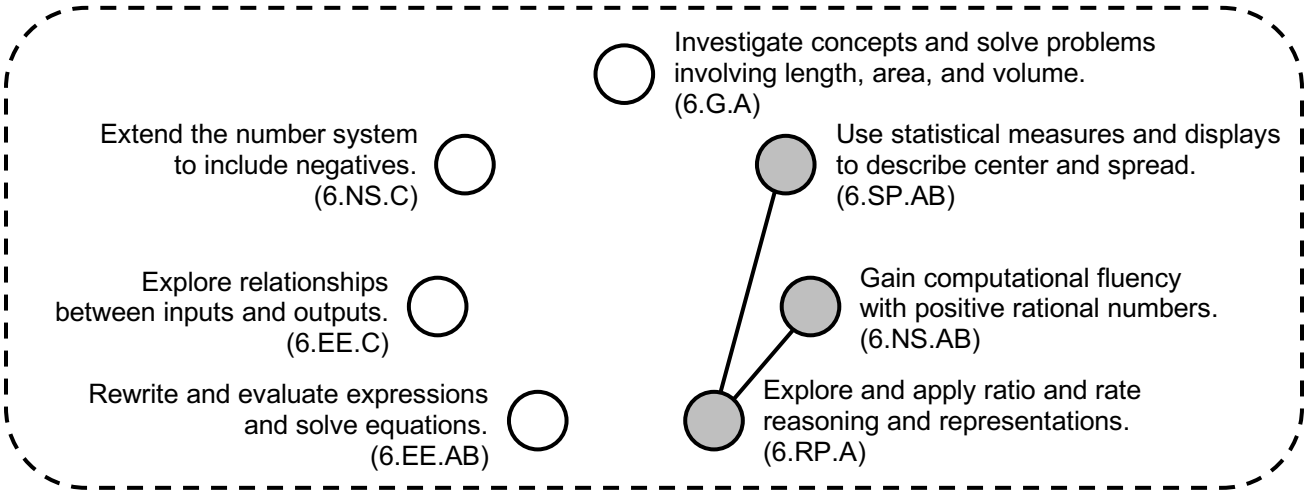
MathLinks: Grade 6 is organized around seven big ideas. This graphic provides a snapshot of the ideas in Unit 5 and their connections to each other.



These ideas build on past work and prepare students for the future. Some of these include:

Prior Work	What's Ahead
• Understand the place value system (5.NBT.A) • Perform operations with whole numbers and decimals (4.OA.A, 4.NBT.B, 5.NBT.B)	• Solve a wide variety of percent problems (7.RP.A) • Extend input-output relationships on double number lines to functions (8.F.AB) • Use functions to describe annual percentage rate (HS) • Estimate population percentages associated with data analysis (HS) • Compute rates of change as a percent (HS)

GRADE 6, UNIT 6: Big Ideas and Connections

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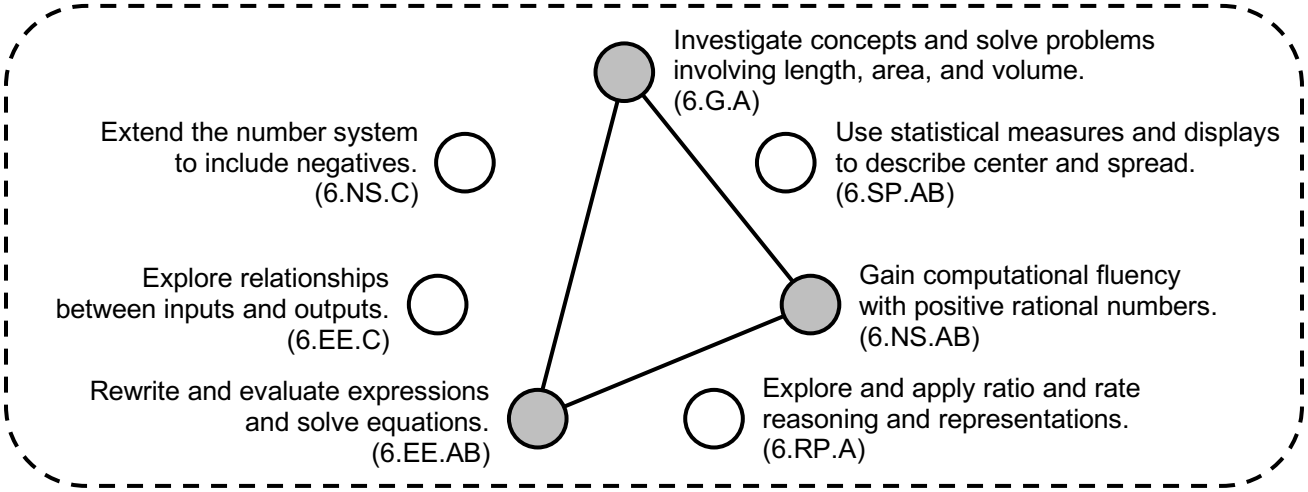
MathLinks: Grade 6 is organized around seven big ideas. This graphic provides a snapshot of the ideas in Unit 6 and their connections to each other.



These ideas build on past work and prepare students for the future. Some of these include:

Prior Work	What's Ahead
• Solve problems involving perimeter and area (3.MD.CD) • Generate and analyze patterns (4.OA.C, 5.OA.B) • Write and interpret numerical expressions (5.OA.A) • Fluently perform operations with positive numbers (4.OA.A, 4.NBT.B, 4.NF.B, 5.NBT.B, 5.NF.AB, 6.NS.B)	• Use properties of operations to generate equivalent expressions (7.EE.A) • Solve problems involving numerical expressions and equations (7.EE.AB) • Solve problems involving area, surface area, and volume (7.G.B, 8.G.C, HS) • Work with radicals and integer exponents (8.EE.A, HS) • Use algebra skills to explore the world of functions (8.F.AB, HS)

GRADE 6, UNIT 7: Big Ideas and Connections

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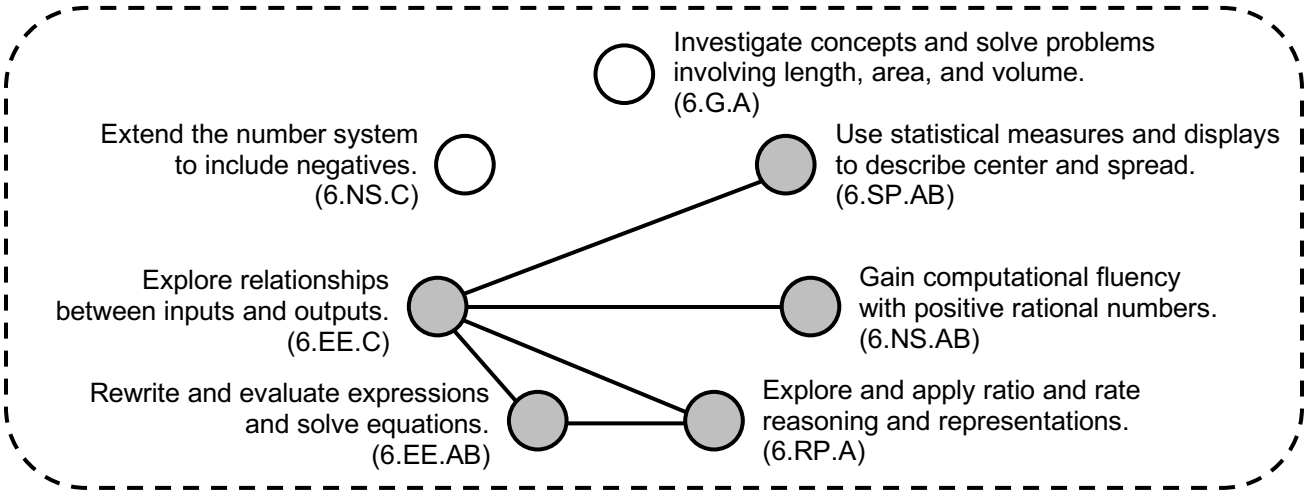
MathLinks: Grade 6 is organized around seven big ideas. This graphic provides a snapshot of the ideas in Unit 7 and their connections to each other.



These ideas build on past work and prepare students for the future. Some of these include:

Prior Work	What's Ahead
• Generate and analyze patterns and relationships (4.OA.C, 5.OA.B) • Represent and interpret data (4.MD.B, 5.MD.B) • Fluently perform operations with positive numbers (4.OA.A, 4.NBT.B, 4.NF.B, 5.NBT.B, 5.NF.AB, 6.NS.B) • Graph points in the coordinate plane to solve real-world and mathematical problems (5.G.A) • Understand ratio concepts and use ratio reasoning to solve problems (6.RP.A) • Extend understanding of arithmetic to algebraic expressions (6.EE.A) • Summarize and describe distributions • (6.SP.B)	• Analyze proportional relationships and use them to solve problems (7.RP.A) • Use properties of operations to generate equivalent expressions (7.EE.A) • Solve problems involving numerical expressions and equations (7.EE.B) • Define, evaluate, and compare functions (8.F.A) • Use functions to model relationships between quantities (8.F.B) • Continue to explore the world of functions (HS)

GRADE 6, UNIT 8: Big Ideas and Connections

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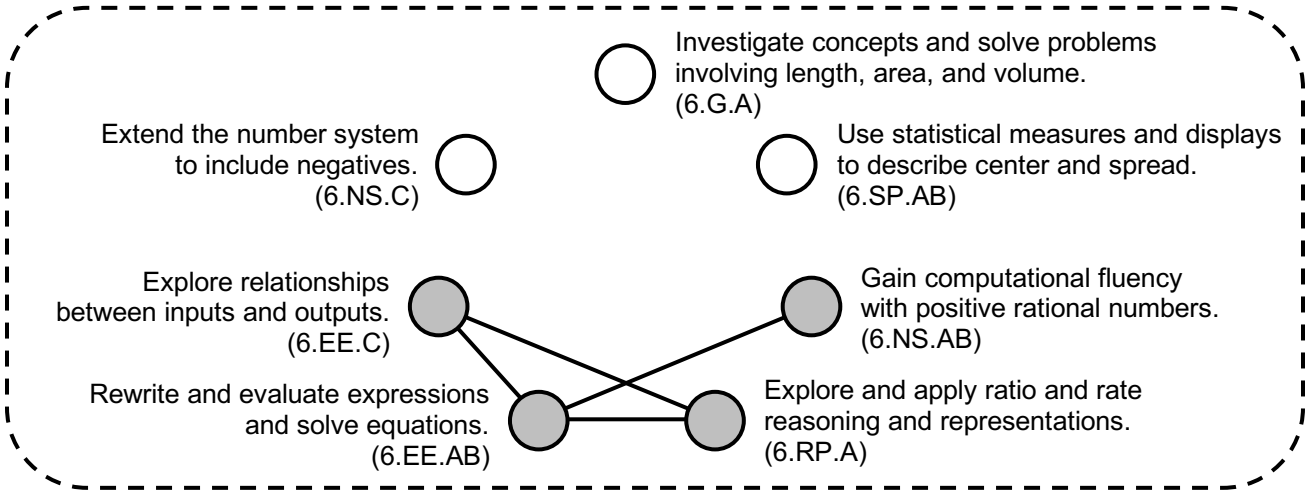
MathLinks: Grade 6 is organized around seven big ideas. This graphic provides a snapshot of the ideas in Unit 7 and their connections to each other.



These ideas build on past work and prepare students for the future. Some of these include:

Prior Work	What's Ahead
• Perform operations with whole numbers, fractions, and decimals (3.OA.ABCD, 3.NBT.A, 3.NF.A, 4.OA.A, 4.NBT.B, 4.NF.ABC, 5.NBT.B, 5.NF.AB, 6.NS.B) • Write and interpret numerical and algebraic expressions (5.OA.A, 6.EE.A) • Understand ratio concepts and use ratio reasoning to solve problems (6.RP.A) • Represent and analyze input-output relationships (6.RP.A, 6.EE.C)	• Analyze proportional relationships and use them to solve problems (7.RP.A) • Generate equivalent expressions (7.EE.A) • Solve problems using numerical and algebraic expressions and equations (7.EE.AB) • Analyze and solve linear equations (8.EE.C, HS)

GRADE 6, UNIT 9: Big Ideas and Connections

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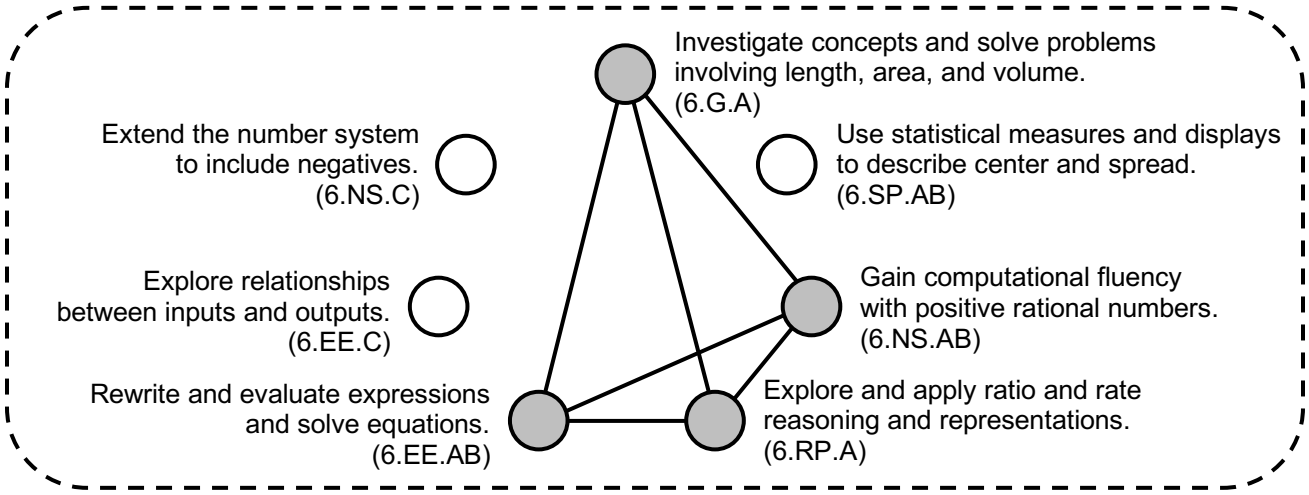
MathLinks: Grade 6 is organized around seven big ideas. This graphic provides a snapshot of the ideas in Unit 9 and their connections to each other.



These ideas build on past work and prepare students for the future. Some of these include:

Prior Work	What's Ahead
• Concepts of length, area, and volume (3.MD.CD, 3.G.A, 4.MD.A, 5.MD.C) • Reason about shapes and their attributes (3.G.A, 4.G.A, 5.G.B) • Write and interpret numerical and algebraic expressions (5.OA.A, 6.EE.A) • Perform operations with whole numbers, fractions, and decimals (3.OA.ABCD, 3.NBT.A, 3.NF.A, 4.OA.A, 4.NBT.B, 4.NF.ABC, 5.NBT.B, 5.NF.AB, 6.NS.B) • Understand ratio concepts and use ratio reasoning to solve problems (6.RP.A)	• Analyze proportional relationships and use them to solve problems (7.RP.A) • Solve problems using numerical and algebraic expressions and equations (7.EE.AB) • Analyze and solve linear equations (8.EE.C, HS) • Solve problems involving surface area and volume (7.G.B, 8.G.C, HS) • Explain volume formulas and use them to solve problems (HS) • Apply geometric concepts in modeling situations (HS)

GRADE 6, UNIT 10: Big Ideas and Connections

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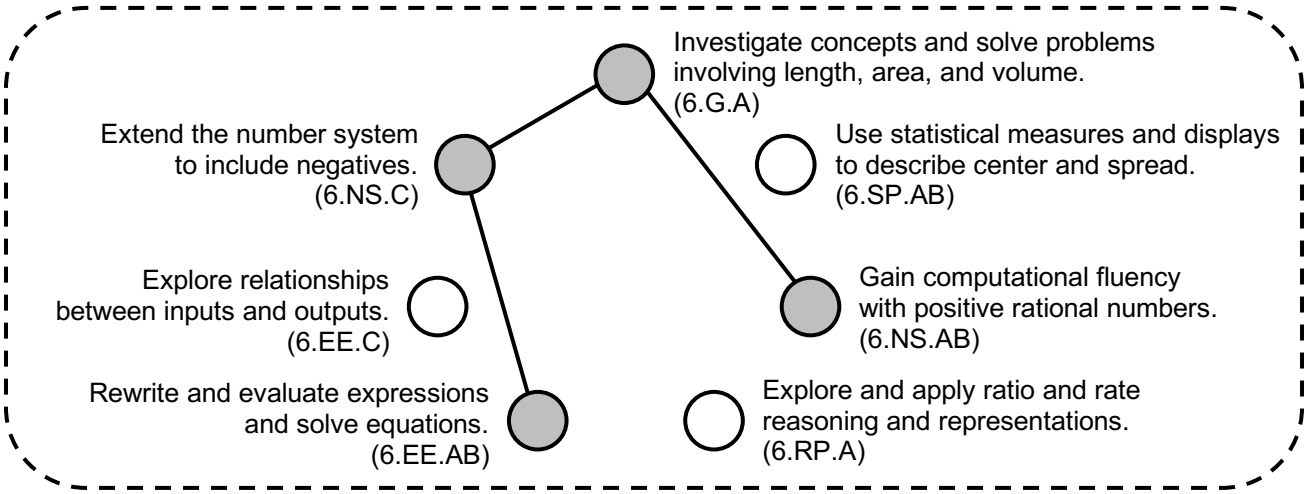
MathLinks: Grade 6 is organized around seven big ideas. This graphic provides a snapshot of the ideas in Unit 10 and their connections to each other.



These ideas build on past work and prepare students for the future. Some of these include:

Prior Work	What's Ahead
• Perform operations with whole numbers, fractions, and decimals (3.OA.ABCD, 3.NBT.A, 3.NF.A, 4.OA.A, 4.NBT.B, 4.NF.ABC, 5.NBT.B, 5.NF.AB, 6.NS.AB)	• Solve problems using numerical and algebraic expressions and equations (7.EE.AB) • Perform operations with rational numbers (7.NS.A)
• Concepts of length, area, and volume (3.MD.CD, 3.G.A, 4.MD.A, 5.MD.C)	• Analyze and solve linear equations (8.EE.C, HS)
• Graph points on the coordinate plane to solve problems (5.G.A)	• Use rational numbers and graphing to explore the world of functions (8.F.AB, HS)
• Write and interpret numerical and algebraic expressions (5.OA.A, 6.EE.A)	• Use rational numbers and graphing in modeling situations (HS)