

6th Grade Math

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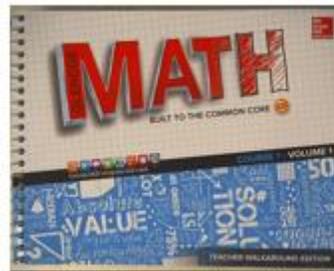
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This course focuses on solving ratio and rate problems, understanding division of fractions by fractions, using positive and negative numbers, solving problems involving surface area and volume, and writing equations to solve problems.

We utilize resources from the McGraw Hill textbook throughout the year. Your student has access to tutorials, practice problems, quizzes and individualized learning on their own. You may use this as additional practice or homework for your student at your discretion.

All students know their username and password to the website at www.aleks.com.

6th Grade Math



| Semester | Unit | Estimated Duration | Grading Topics | Iowa Common Core Standards |
|---|--|---|--|----------------------------|
| 1 | Unit One: The Number System | 6 weeks | <ul style="list-style-type: none"> Fluently Computes Decimals (yearlong) | 6.NS.B.2, 3 |
| | | | <ul style="list-style-type: none"> Multiplying and Dividing Fractions | 6.NS.A.1 |
| | Unit Two: Ratios and Proportional Relationships (major) | 8 weeks | <ul style="list-style-type: none"> Ratios and Rates | 6.RP.A.1, 2, 3, 6.NS.B.4 |
| | | | <ul style="list-style-type: none"> Solving Percents and Fractions, Decimals, and Percents | 6.RP.A.3 |
| | Unit Three: Integers | 3 weeks | <ul style="list-style-type: none"> Integers | 6.NS.C.5, 6, 7, 8, 6.G.A.3 |
| 2 | Unit Four: Expressions and Equations (major) | 8 weeks | <ul style="list-style-type: none"> Expressions | 6.EE.A.1, 2, 3, 4 |
| | | | <ul style="list-style-type: none"> Equations | 6.EE.B.6, 7 |
| | | | <ul style="list-style-type: none"> Functions and Inequalities | 6.EE.B.5, 8 |
| | Unit Five: Geometry | 4 weeks | <ul style="list-style-type: none"> Surface Area and Volume | 6.G.A.1, 2, 4 |
| Unit Six: Statistics and Probability | 5 weeks | <ul style="list-style-type: none"> Statistical Measures and Displays | 6.SP.B.5, 6.SP.A.2, 6.SP.B.4 | |

Unit One: The Number System

Organizing Principles

Students continue their previous understanding of the meaning of fractions, the meanings of multiplication and division, and the relationship between multiplication and division to explain why the procedures for dividing fractions make sense. Students use visual models and equations to divide whole numbers by fractions and fractions by fractions to solve word problems.

Unit Two: Ratio and Proportional Relationships

Organizing Principles

Students are introduced to ratio, a relationship or comparison of two quantities or measures. Students represent ratios in various forms and compare types of ratios. At this level, they use reasoning about multiplication and division to solve ratio and rate problems about quantities. Students learn how and where ratios and rates are used in the real world.

Unit Three: Integers

Organizing Principles

At this level, students use fractions, decimals, and integers to represent real-world situations. They extend the number line to represent all rational numbers and recognize that number lines may be either horizontal or vertical which helps sixth graders move from number lines to coordinate grids. The focus of this unit is to learn about negative numbers, their relationship to positive numbers, and the meaning and uses of absolute value. This unit lays the foundation for working with rational numbers, algebraic expressions and equations, functions, and the coordinate plane in seventh and eighth grades.

Unit Four: Expressions and Equations

Organizing Principles

The study of expressions and equations centers on the use of variables in mathematical expressions. Students write and evaluate numerical expressions and use expressions and formulas to solve problems. Students also solve simple one-step equations and use equations such as $3x = y$ to describe relationships between quantities. The sixth-grade study of expressions and equations is foundational in the transition to algebraic representation and problem solving, which is extended and formalized in Grade 7.

Unit Five: Geometry

Organizing Principles

Students in Grade 6 build on their understanding of area and volume from Grade 5 to deepen understanding of volume and develop the concept of surface area. Students prepare for their work in Grade 8 with transformations by working with polygons in the coordinate plane in Grade 6. Reasoning about relationships in their work on surface area, composing and decomposing shapes, and finding distance on a coordinate plane using endpoint coordinates for horizontal and vertical lines prepare them for Grade 7 relationships.

Unit Six: Statistics and Probability

Organizing Principles

A major focus for sixth graders is to develop an understanding of statistical thinking. Students study measures of center and variability with newly learned knowledge of mean, median, mode, and range. Using dot plots, histograms, and box plots, students draw inferences and make comparisons between data sets. At this level, students recognize that a data distribution may not have a definite center and that different ways to measure center provide different values. Students discover that interpreting different measures of center for the same data develops the understanding of how each measure can change how data get interpreted.

