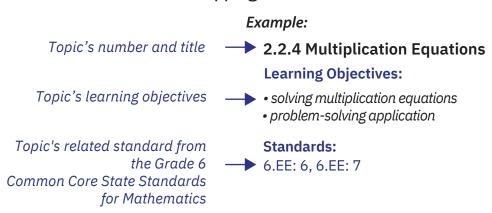# grade 6 math

Content, Standards, & Objectives

This document contains an ordered list of all of the topics from the scope and sequence of Thinkwell's Grade 6 Math, along with the learning objectives covered in each topic and the corresponding standards.

Although Thinkwell's Grade 6 Math was not designed as a common core curriculum, this document is provided for those customers whose state homeschool requirements include common core standard mapping information.

Example:

Topic's number and title → **2.2.4 Multiplication Equations**

Learning Objectives:

Topic's learning objectives → • *solving multiplication equations*
• *problem-solving application*

Topic's related standard from the Grade 6 Common Core State Standards for Mathematics → **Standards:**
6.EE: 6, 6.EE: 7

We suggest keeping this document handy. Please let us know if you have any questions about the content here. Email us at **support@thinkwell.com**.

Grade 6 Math
Content, Standards, & Objectives

thinkwell homeschool

1 Whole Numbers and Patterns

1.1 Whole Numbers and Exponents

1.1.1 Comparing and Ordering Whole Numbers

Learning Objectives:

- *using place value to compare whole numbers*
- *using a number line to order whole numbers*

Standards:

6.NS: 7, 6.NS: 7a

1.1.2 Estimating with Whole Numbers

Learning Objectives:

- *estimating a sum or difference by rounding*
- *estimating a product by rounding*
- *estimating a quotient using compatible numbers*

1.1.3 Exponents

Learning Objectives:

- *writing numbers in exponential form*
- *finding the value of numbers in exponential form*
- *problem-solving application*

Standards:

6.EE: 1

1.2 Using Whole Numbers

1.2.1 Order of Operations

Learning Objectives:

- *using the order of operations*
- *using the order of operations with exponents*
- *consumer application*

Standards:

6.EE: 1

1.2.2 Properties and Reasoning Methods

Learning Objectives:

• *using properties to add and multiply whole numbers*
• *using the distributive property to multiply*

1.2.3 Choose the Method of Computation

Learning Objectives:

 • *computation application*

1.2.4 Patterns and Sequences

Learning Objectives:

• *extending arithmetic sequences*
• *completing other sequences*

2 Introduction to Algebra

2.1 Variables and Expressions

2.1.1 Variables and Expressions

Learning Objectives:

• *evaluating algebraic expressions*
• *evaluating expressions with two variables*

Standards:
6.EE: 2, 6.EE: 2c, 6.EE: 6

2.1.2 Translate Between Words and Math

Learning Objectives:

• *introduction to translating between words and math*
• *translating words into math*
• *translating math into words*

Standards:
6.EE: 2, 6.EE: 2a, 6.EE: 2b, 6.EE: 6

2.1.3 Translating Between Tables and Expressions

Learning Objectives:

• *writing an expression*
• *writing an expression for a sequence*
• *writing an expression for the area of a figure*

Standards:
6.EE: 2, 6.EE: 6

2.2 Introduction to Equations

2.2.1 Equations and Their Solutions

Learning Objectives:

• *determining solutions of equations*
• *measurement application*

Standards:
6.EE: 5, 6.EE: 6

2.2.2 Addition Equations

Learning Objectives:

• introduction to solving equations
• problem-solving application

Standards:
6.EE: 6, 6.EE: 7

2.2.3 Subtraction Equations

Learning Objectives:

• solving subtraction equations by adding

2.2.4 Multiplication Equations

Learning Objectives:

• solving multiplication equations
• problem-solving application

Standards:
6.EE: 6, 6.EE: 7

2.2.5 Division Equations

Learning Objectives:

• solving division equations
• problem-solving application

Standards:
6.EE: 6

3 Decimals

3.1 Introduction to Decimals

3.1.1 Representing, Comparing, and Ordering Decimals

Learning Objectives:

- *introduction to place value*
- *expressing decimals in standard form*
- *comparing and ordering decimals*

Standards:
6.NS: 7

3.1.2 Rounding and Estimating Decimals

Learning Objectives:

- *rounding monetary values*
- *rounding decimals*
- *rounding decimals to estimate sums*

3.1.3 Adding and Subtracting Decimals

Learning Objectives:

- *adding and subtracting decimals*

Standards:
6.NS: 3

3.2 Multiplying and Dividing Decimals

3.2.1 Multiplying Decimals

Learning Objectives:

- *multiplying a decimal by a whole number*
- *multiplying decimals*
- *problem-solving application*

Standards:
6.NS: 3, 6.EE: 2, 6.EE: 2c

3.2.2 Applying Exponents: Scientific Notation

Learning Objectives:

- *multiplying by powers of ten*
- *writing numbers in scientific notation*
- *writing numbers in standard form*
- *comparing numbers in scientific notation*

Standards:
6.NS: 7, 6.EE: 1

3.2.3 Dividing Decimals by Whole Numbers

Learning Objectives:

• *dividing decimals by whole numbers*
• *rounding a decimal quotient*
• *problem-solving application*

Standards:
6.NS: 2, 6.NS: 3

3.2.4 Dividing by Decimals

Learning Objectives:

• *dividing a whole number by a decimal*
• *dividing decimals by decimals*

Standards:
6.NS: 2, 6.NS: 3

3.2.5 Solving Decimal Equations

Learning Objectives:

• *solving equations with decimals*

Standards:
6.NS: 2, 6.NS: 3, 6.EE: 7

4 Number Theory and Fractions

4.1 Number Theory

4.1.1 Divisibility

Learning Objectives:

• *checking divisibility*
• *identifying prime and composite numbers*

4.1.2 Factors and Prime Factorization

Learning Objectives:

• *finding factors*
• *writing prime factorizations*

4.1.3 Greatest Common Factor

Learning Objectives:

• *finding the gcf*
• *problem-solving application*

Standards:
6.NS: 4

4.2 Representing Fractions

4.2.1 Decimals and Fractions

Learning Objectives:

• *writing decimals as fractions or mixed numbers*
• *writing fractions as decimals*
• *comparing and ordering fractions and decimals*

Standards:
6.NS: 2, 6.NS: 3, 6.NS: 7, 6.NS: 7a

4.2.2 Equivalent Fractions

Learning Objectives:

• *finding equivalent fractions*
• *multiplying and dividing to find equivalent fractions*
• *writing fractions in simplest form*

Standards:
6.NS: 4

4.2.3 Mixed Numbers and Improper Fractions
Learning Objectives:

• *cooking application*
• *writing mixed numbers as improper fractions*

Standards:
6.NS: 2

4.3 Introduction to Operations with Fractions

4.3.1 Comparing and Ordering Fractions
Learning Objectives:

• *comparing like fractions*
• *cooking application*
• *ordering fractions*

Standards:
6.NS: 7, 6.NS: 7a, 6.NS: 7b

4.3.2 Adding and Subtracting with Like Denominators
Learning Objectives:

• *life science application*
• *subtracting like fractions and mixed numbers*
• *evaluating expressions with fractions*

Standards:
6.EE: 2, 6.EE: 2c

4.3.3 Estimating Fraction Sums and Differences
Learning Objectives:

• *estimating fractions*
• *sports application*

5 Operations with Fractions

5.1 Adding and Subtracting Fractions

5.1.1 Least Common Multiple

Learning Objectives:

- *consumer application*
- *using multiples to find the lcm*

Standards:
6.NS: 4

5.1.2 Adding and Subtracting with Unlike Denominators

Learning Objectives:

- *horticulture application*
- *adding and subtracting unlike fractions*

Standards:
6.NS: 4

5.1.3 Adding and Subtracting Mixed Numbers

Learning Objectives:

- *adding and subtracting mixed numbers*
- *measurement application*

Standards:
6.NS: 4

5.1.4 Regrouping to Subtract Mixed Numbers

Learning Objectives:

- *regrouping mixed numbers*
- *measurement application*

Standards:
6.NS: 4

5.2 Multiplying and Dividing Fractions

5.2.1 Multiplying Fractions by Whole Numbers

Learning Objectives:

- *multiplying fractions by whole numbers*
- *evaluating fraction expressions*
- *social studies application*

Standards:
6.EE: 2, 6.EE: 2c

5.2.2 Multiplying Fractions
Learning Objectives:

• *multiplying fractions*
• *evaluating fraction expressions*

Standards:
6.EE: 2, 6.EE: 2c

5.2.3 Multiplying Mixed Numbers
Learning Objectives:

• *multiplying fractions and mixed numbers*
• *multiplying mixed numbers*

5.2.4 Dividing Fractions and Mixed Numbers
Learning Objectives:

• *finding reciprocals*
• *using reciprocals to divide fractions and mixed numbers*

Standards:
6.NS: 1

6 Data Displays

6.1 Organizing and Displaying Data

6.1.1 Measures of Central Tendency

Learning Objectives:

• *finding measures of central tendency and range*
• *choosing the best measure of central tendency*
• *manufacturing application*

Standards:
6.NS: 2, 6.SP: 2, 6.SP: 5, 6.SP: 5c, 6.SP: 5d

6.1.2 Frequency Tables, Stem-and-Leaf Plots, and Line Plots

Learning Objectives:

• *organizing and interpreting data in a frequency table*
• *organizing and interpreting data in a stem-and-leaf plot*
• *organizing and interpreting data in a line plot*

Standards:
6.SP: 2, 6.SP: 4, 6.SP: 5, 6.SP: 5a

6.1.3 Bar Graphs and Histograms

Learning Objectives:

• *interpreting a bar graph*
• *making a double-bar graph*
• *making a histogram*

Standards:
6.SP: 2, 6.SP: 4, 6.SP: 5

7 Proportional Relationships

7.1 Ratios and Proportions

7.1.1 Ratios and Rates

Learning Objectives:

- *writing ratios*
- *writing equivalent ratios*
- *consumer application*

Standards:
6.RP: 1, 6.RP: 2, 6.NS: 2

7.1.2 Applying Rates and Ratios

Learning Objectives:

- *finding equivalent ratios and rates*
- *comparing rates*
- *consumer application*

Standards:
6.RP: 1, 6.RP: 3, 6.RP: 3a

7.1.3 Proportions

Learning Objectives:

- *using equivalent ratios to solve proportions*
- *using cross products to complete proportions*
- *measurement application*

Standards:
6.RP: 1, 6.RP: 3, 6.RP: 3b, 6.EE: 6

7.2 Percent

7.2.1 Percents

Learning Objectives:

- *modeling percents*
- *writing percents as fractions*
- *life science application*
- *writing percents as decimals*
- *biology application*

Standards:
6.RP: 1, 6.NS: 2

7.2.2 Percents, Decimals, and Fractions

Learning Objectives:

- *writing decimals as percents*
- *writing fractions as percents*
- *drama application*

Standards:

6.NS: 2, 6.NS: 3, 6.EE: 6

7.2.3 Percent Problems

Learning Objectives:

- *consumer math application*
- *technology application*
- *multiplying to find a percent of a number*

Standards:

6.RP: 1, 6.RP: 3, 6.RP: 3c, 6.NS: 2, 6.EE: 6

7.2.4 Using Percents

Learning Objectives:

- *finding discounts*
- *finding tips*
- *finding sales tax*

Standards:

6.NS: 2

8 Geometric Relationships

8.1 Lines and Angles

8.1.1 Points, Lines, and Planes

Learning Objectives:

• *identifying points, lines, and planes*
• *identifying line segments and rays*

8.1.2 Measuring and Classifying Angles

Learning Objectives:

• *measuring an angle with a protractor*
• *drawing an angle with a protractor*
• *classifying angles*
• *art application*

8.1.3 Angle Relationships

Learning Objectives:

• *identifying types of angle pairs*
• *identifying an unknown angle measure*

Standards:
6.EE: 6, 6.EE: 7

8.1.4 Classifying Lines

Learning Objectives:

• *classifying pairs of lines*
• *traffic application*

8.2 Polygons

8.2.1 Triangles

Learning Objectives:

• *triangle classifications by angles*
• *using properties of angles to label triangles*
• *classifying triangles by lengths of sides*

Standards:
6.EE: 6

8.2.2 Quadrilaterals

Learning Objectives:

• *naming quadrilaterals*
• *classifying quadrilaterals*

8.2.3 Polygons

Learning Objectives:

• *identifying polygons*

Standards:
6.EE: 6, 6.EE: 7, 6G: 1

9 Measurement

9.1 Customary and Metric Measurement

9.1.1 Understanding Customary Units of Measure

Learning Objectives:

• *choosing appropriate units of length*
• *choosing appropriate units of weight*
• *choosing appropriate units of capacity*
• *estimating measurements*

9.1.2 Understanding Metric Units of Measure

Learning Objectives:

• *choosing appropriate units of length*
• *choosing appropriate units of mass*
• *choosing appropriate units of capacity*
• *estimating measurements*

9.1.3 Converting Customary Units

Learning Objectives:

• *using a conversion factor*
• *converting units of measure by using proportions*
• *problem-solving application*

Standards:
6.RP: 3, 6.RP: 3a, 6.RP: 3d, 6.EE: 6, 6.EE: 7

9.1.4 Converting Metric Units

Learning Objectives:

• *converting metric units*
• *using powers of ten to convert metric units of measure*
• *converting metric units of measure*

Standards:
6.RP: 3d, 6.EE: 6

9.1.5 Time and Temperature

Learning Objectives:

• *converting time*
• *finding elapsed time*
• *estimating temperature*

Standards:
6.RP: 3d

9.2 Measuring Geometric Figures

9.2.1 Finding Angle Measures in Polygons

Learning Objectives:

- *subtracting to find angle measures*
- *estimating angle measures*
- *recreation application*

9.2.2 Perimeter

Learning Objectives:

- *finding the perimeter of a polygon*
- *using a formula to find perimeter*
- *finding unknown side lengths and the perimeter of a polygon*

Standards:
6.NS: 3, 6.EE: 6

9.2.3 Circles and Circumference

Learning Objectives:

- *naming parts of a circle*
- *architecture application*
- *using the formula for the circumference of a circle*

Standards:
6.NS: 3, 6.EE: 6, 6.EE: 7

10 Area and Volume

10.1 Area

10.1.1 Area of Rectangles and Parallelograms

Learning Objectives:

- *estimating the area of an irregular figure*
- *finding the area of a rectangle*
- *finding the area of a parallelogram*
- *art application*

Standards:
6.NS: 3, 6G: 1

10.1.2 Area of Triangles and Trapezoids

Learning Objectives:

- *finding the area of a triangle*
- *architecture application*
- *finding the area of a trapezoid*

Standards:
6.NS: 3, 6G: 1

10.1.3 Area of Composite Figures

Learning Objectives:

- *finding areas of composite figures*
- *art application*

Standards:
6.NS: 3, 6G: 1

10.1.4 Changing Dimensions

Learning Objectives:

- *changing dimensions*
- *measurement application*

10.1.5 Area of Circles

Learning Objectives:

- *estimating the area of a circle*
- *using the formula for the area of a circle*
- *history application*

Standards:
6.NS: 3

10.2 Volume and Surface Area

10.2.1 Three-Dimensional Figures

Learning Objectives:

- *identifying faces, edges, and vertices*
- *naming three-dimensional figures*

10.2.2 Volume of Prisms

Learning Objectives:

- *finding the volume of a rectangular prism*
- *finding the volume of a triangular prism*
- *problem-solving application*

Standards:
6G: 2

10.2.3 Volume of Cylinders

Learning Objectives:

- *finding the volume of a cylinder*
- *nutrition application*
- *comparing volumes of cylinders*

Standards:
6.NS: 3, 6.NS: 7b

10.2.4 Surface Area

Learning Objectives:

- *finding the surface area of a prism*
- *finding the surface area of a pyramid*
- *finding the surface area of a cylinder*

Standards:
6.NS: 3, 6G: 4

11 Integers and the Coordinate Plane

11.1 Introduction to Integers

11.1.1 Integers in Real-World Situations

Learning Objectives:

- *identifying positive and negative numbers in the real world*
- *graphing integers*
- *writing integer expressions to represent situations*

Standards:
6.NS: 5, 6.NS: 6, 6.NS: 6a, 6.NS: 6c

11.1.2 Comparing and Ordering Integers

Learning Objectives:

- *comparing integers*
- *ordering integers*
- *problem-solving application*

Standards:
6.NS: 5, 6.NS: 6, 6.NS: 6c, 6.NS: 7, 6.NS: 7a, 6.NS: 7b

11.1.3 The Coordinate Plane

Learning Objectives:

- *identifying quadrants*
- *locating points on a coordinate plane*
- *graphing points on a coordinate plane*

Standards:
6.NS: 6, 6.NS: 6b, 6.NS: 6c

11.2 Operations with Integers

11.2.1 Adding Integers

Learning Objectives:

- *writing integer addition*
- *adding integers*
- *evaluating integer expressions*
- *earth science application*

Standards:
6.NS: 5, 6.NS: 6, 6.NS: 6a, 6.NS: 6c

11.2.2 Subtracting Integers

Learning Objectives:

• *writing integer subtraction*
• *subtracting integers*
• *evaluating integer expressions*

Standards:

6.NS: 5, 6.NS: 6, 6.NS: 6a, 6.NS: 6c

11.2.3 Multiplying Integers

Learning Objectives:

• *multiplying integers*
• *evaluating integer expressions*

Standards:

6.NS: 5

11.2.4 Dividing Integers

Learning Objectives:

• *dividing integers*
• *evaluating integer expressions*

Standards:

6.NS: 5