UNIT
1

Simply Good and Beautiful

MATH 7

COURSE BOOK 1

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The Good and the Beautiful
CURRICULUM

About the Course

SUPPLIES NEEDED

- *Simply Good and Beautiful Math 7 Course Books 1, 2, 3,* and *4*
- *Simply Good and Beautiful Math 7 Answers and Solutions*
- *Simply Good and Beautiful Math Scratch Pad* or other scratch paper
- Device to access videos
- Scientific calculator
- 2 standard dice
- Colored pencils and/or crayons
- Highlighter and/or marker
- Tape or glue
- Ruler
- Protractor
- Compass
- Scissors
- String
- Coin
- Paper clip

COURSE OVERVIEW

Math 7 consists of Course Books 1, 2, 3, and 4. There are 120 total lessons divided into four units. Each unit ends with a unit review, assessment, and enrichment activity. The course is designed to be independently completed by the student, but the parent/teacher can choose to be as involved in the lessons as he or she would like.

GETTING STARTED

Simply open the first course book. The student may choose to watch the video lesson or just read the lesson overview if he or she feels confident in the lesson topic. Please note that videos may contain material not included in the written lesson overview. After completing the video and/or lesson overview, the student should complete the lesson practice and review sections.

The parent/teacher should check the student's work daily and provide immediate help and feedback. Students who struggle with the lesson practice should be encouraged to review the lesson overview or video for help.
Note: If printing at home, print pages at actual size.

LESSON DETAILS

Most lessons consist of a warm-up, video lesson, lesson overview, practice, and review.

WARM-UP: An activity that applies to the lesson topic or that reviews mental math skills.

VIDEO LESSON: Detailed teaching and interactive, guided practice of the lesson topic. Videos are about 12–15 minutes in length.

The Good and Beautiful Homeschool app can be used to access and watch the lesson videos. Use the QR code below to access app download information.

Alternatively, the videos can be accessed at goodandbeautiful.com/Math7.

LESSON OVERVIEW: A concise written lesson on the topic.

PRACTICE: Problems dedicated to the lesson topic.

REVIEW: Daily review of topics from previous lessons.

A Reference Chart can be found at the back of each book.

Frequently Asked Questions

How many lessons should my student do each week?

- There are 120 lessons in the course. If the student completes four lessons per week, he or she will complete the course in a standard school year with typical breaks for vacation or sickness.

How long do lessons take?

- The average time to complete a lesson is 50–60 minutes. This includes time to watch the video and complete the course book sections.

What if my student does not do well on an assessment?

Each assessment question has a lesson number indicating where the content was first introduced. If your student misses an assessment question, he or she is encouraged to do one or more of the following:

- Reread the corresponding lesson overview.
- Rewatch the corresponding video.
- Complete the extra practice worksheet for the corresponding lesson (available for purchase).
- Rework the problem given the answer. It can be helpful to know the answer when reworking a problem so mistakes can be found.

Do you include any specific doctrine?

- No, the goal of our curriculum is not to teach doctrines specific to any particular Christian denomination but to teach general principles, such as honesty, hard work, and kindness. All Bible references in our curriculum are from the King James Version.

Does my student have to watch the videos?

- The videos contain the bulk of the teaching and are highly recommended. However, if your student feels confident in the topic being taught, he or she can skip the video and read the lesson overview instead. A student who struggles with the lesson practice should be encouraged to go back and watch the video.
- Some families prefer to have the parent/teacher facilitate the lesson using the lesson overview rather than have the student watch the video lesson independently.

Is Math 7 completed independently by the student?

- Yes, Math 7 is designed for your student to complete independently, though at times the student may need parent/teacher assistance to understand a concept. The parent/teacher will need to check the student's work and should do so on a daily basis when possible, providing immediate feedback.

Is Math 7 a spiral or mastery program?

- Math 7 is a spiral course, constantly reviewing concepts your student has learned to ensure understanding and retention of information.

What if there isn't room to complete the work?

- Math 7 is designed to give students room to work in their course book. At times, additional paper may be needed. Students should always keep scratch paper on hand while completing the lessons. The *Simply Good and Beautiful Math Scratch Pad* is available for purchase.

Is a calculator used in Math 7?

- This course is designed to be completed with a scientific calculator on hand for specific problems. Problems that allow the use of a calculator are marked with the calculator icon shown to the left. Any brand of scientific calculator is acceptable. Please note that calculators may vary, and your student is encouraged to read the manual for the specific calculator to understand how it functions.

Lesson Topics

COURSE BOOK 1

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COURSE BOOK 2

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COURSE BOOK 3

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COURSE BOOK 4

TABLE OF CONTENTS

UNIT 1 OVERVIEW

LESSONS 1–30

CONCEPTS COVERED

- Adding and subtracting decimals
- Adding and subtracting fractions
- Adding and subtracting integers
- Applying reasoning to determine validity of answers
- Combining like terms
- Complex fractions
- Converting between fractions and decimals
- Converting between standard form and scientific notation
- Coordinate planes
- Equations with negative numbers
- Estimating and rounding
- Evaluating expressions
- Evaluating expressions with positive exponents
- Evaluating integers raised to negative exponents
- Expanded notation with exponents
- Expressions, constants, and coefficients
- Greatest common factor
- Identifying and writing equations
- Identifying solutions to equations
- Least common multiple
- Multiplying and dividing decimals
- Multiplying and dividing fractions
- Multiplying and dividing integers
- Multiplying and dividing numbers in scientific notation
- Operations with signed fractions and decimals
- Opposites and absolute value
- Prime factorization
- Prime factorization to simplify fractions
- Properties of real numbers
- Simplifying division problems
- Simplifying expressions using the order of operations
- Solving and checking one-step equations
- Terminating and repeating decimals
- Upside down division
- Using absolute value to find horizontal and vertical distances on coordinate planes
- Using calculators
- Writing expressions
- Writing large numbers with digits and words
- Zero as an exponent and base

UNIT 2 OVERVIEW

LESSONS 31–60

CONCEPTS COVERED

- Applying inequalities to real-life scenarios
- Compound interest formula
- Converting percents to decimals
- Converting percents to fractions
- Converting units in the metric system
- Converting units in the US customary system
- Determining if ratios form a proportion
- Evaluating square roots using a calculator
- Finding a percent decrease
- Finding a percent given a whole and a part
- Finding a percent increase
- Finding a whole given a percent and a part
- Finding an original or new amount given a percent decrease
- Finding an original or new amount given a percent increase
- Finding part of a whole given a fraction and the whole
- Finding the fraction given the whole and a part
- Finding the percent of a number
- Finding the whole given a fraction and the part
- Given a part-to-part ratio, finding a missing part or whole
- Given a part-to-whole ratio, finding a missing part or whole
- Graphing inequalities on number lines
- Irrational numbers
- Multiple ways to solve equations
- Natural numbers, whole numbers, integers, rational numbers
- Perfect squares and cubes
- Performing operations with mixed measures
- Plotting irrational numbers on a number line
- Real number system
- Set notation and symbols for set notation
- Simple interest formula
- Solving and checking two-step equations
- Solving equations with negative coefficients
- Solving equations with square and cube roots
- Solving equations with squared and cubed variables
- Solving for a variable in terms of other variables
- Solving for missing sides in congruent triangles
- Solving for missing sides in similar triangles
- Solving multi-step inequalities
- Solving one-step inequalities with negative coefficients
- Solving proportions using cross products
- Solving proportions using equivalent ratios
- Solving two-step equations with exponents and roots
- Total amount of investments
- Unit rates from tables
- Unit rates from word problems
- Using formulas to solve problems
- Using unit multipliers in word problems
- Using unit multipliers to convert between systems of measurement
- Using unit multipliers to convert units of area
- Using unit multipliers to convert within systems of measurement
- Word problems with two-step equations
- Writing and comparing ratios
- Writing ratios and proportions for real-life scenarios
- Writing unit multipliers from any conversion factors

UNIT 3 OVERVIEW

LESSONS 61–90

CONCEPTS COVERED

- Alternate exterior angles
- Alternate interior angles
- Angles in a circle
- Area around inscribed shapes
- Area of circles
- Area of composite figures
- Area of triangles, parallelograms, and trapezoids
- Calculating slope from a graph
- Circumference of circles
- Classifying triangles by angles
- Classifying triangles by sides
- Complementary angles
- Constructing triangles given three angles
- Constructing triangles given three sides
- Corresponding angles
- Degrees of rotational symmetry
- Direct proportions
- Drawing angles with a protractor
- Expressions within angle pairs
- Finding angle bisectors with a compass
- Finding missing side lengths in right triangles
- Finding missing side lengths of polygons given area
- Finding perpendicular bisectors with a compass
- Finding proportionality constants on graphs
- Functions
- Graphing functions from tables
- Graphing linear equations using slope-intercept form
- Graphing linear equations using T-charts
- Graphs of direct proportions
- Identifying and using scale factors
- Identifying equations of functions
- Identifying function rules
- Inscribed shapes
- Interior angle sums
- Inverse proportions
- Isosceles trapezoid angle properties
- Lines of symmetry
- Measuring angles with a protractor
- Missing angles in a quadrilateral
- Missing interior angles of triangles
- Missing sides in composite figures
- Nonlinear functions
- Parallel lines cut by a transversal
- Parallelogram angle properties
- Perimeter and area of semicircles
- Perimeter of composite figures
- Perimeter of polygons
- Polygon diagonals
- Polygons with expressions as side lengths
- Properties of triangle angles
- Properties of triangle sides
- Proportionality constants
- Pythagorean Theorem
- Pythagorean triples
- Relationships of angles in a circle
- Rotational symmetry
- Scales and scale drawings
- Slope of a line
- Supplementary angles
- Transformations on the coordinate plane
- Transformations (rotations, reflections, translations)
- Using a compass
- Vertical angles
- Vertical line test
- Writing equations of graphs in slope-intercept form
- *x*- and *y*-intercepts

UNIT 4 OVERVIEW

LESSONS 91–120

CONCEPTS COVERED

- Bar graphs
- Biased and unbiased samples
- Bimodal and unimodal graphs
- Box plots
- Chords, arcs, sectors, and central angles
- Circle graphs
- Clusters of data
- Complementary events
- Compound probability
- Cross sections of geometric solids
- Determining correlation on graphs
- Experimental probability
- Factoring the GCF from binomials
- Factoring the GCF from trinomials
- Finding a missing data value given the mean
- Finding a sample space
- Finding arc length
- Finding area of sectors
- First, second, and third quartiles
- Frequency tables
- Geometric solids
- Histograms
- Identifying better measures of center
- Identifying modes on a graph
- Independent and dependent events
- Interpreting graphs
- Interpreting measures of central tendency
- Interquartile range
- Line graphs
- Lines of best fit
- Measures of central tendency (mean, median, mode)
- Multiplying monomials by binomials
- Multiplying monomials by monomials
- Mutually exclusive events
- Nets of three-dimensional figures
- Pictographs
- Properties of polyhedra
- Random samples
- Range of data sets
- Sample and sample size
- Scatter plots
- Simple probability
- Simple, stratified, and systematic samples
- Simplifying rational expressions
- Statistics and surveys
- Stem-and-leaf plots
- Surface area of composite solids
- Surface area of cones using a formula
- Surface area of cylinders using nets
- Surface area of prisms using nets
- Surface area of pyramids using nets
- Surface area of spheres using a formula
- Symmetric, right-skewed, and left-skewed graphs
- Theoretical probability
- Understanding outliers
- Volume of cubes and other rectangular prisms
- Volume of cylinders
- Volume of triangular prisms
- Writing monomials as products of factors