




Simply

Good and Beautiful

# MATH

# 4

COURSE BOOK





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## COURSE BOOK

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# ABOUT THE COURSE

## Supplies Needed

- 📖 *Simply Good and Beautiful Math 4 Course Book*
- 📖 *Simply Good and Beautiful Math 4 Answer Key*
- 📖 *Math 4 Mental Math Map Mysteries*
- 📖 *Simply Good and Beautiful Math Scratch Pad* or other scratch paper
- 📱 Device to access videos (highly recommended)
- 📎 Pencils
- 📎 Crayons or colored pencils (keep on hand)
- 📎 12-inch ruler
- 🎲 Dice

## Course Overview

Math 4 consists of 120 lessons divided into four units. Each unit ends with an assessment. The course is designed to be completed by the child independently, but parents/teachers can choose to be as involved in the lessons as they would like to be.

## Lesson Overview

Most lessons are 3–4 pages and consist of four parts: video lesson, mini lesson, lesson practice, and review.

**Video Lesson:** Themed videos provide detailed teaching and interactive guided practice of the lesson topic. Scan the QR code or go to [godandbeautiful.com/Math4](http://godandbeautiful.com/Math4) to access the videos.

**Mini Lesson:** A concise written lesson on the topic.

**Lesson Practice:** Practice that is dedicated to the lesson topic.

**Review:** Daily review of topics from previous lessons, including daily review of multiplication facts.

A Reference Guide is included at the end of the course book.

## Getting Started

Simply open the course book. Students may choose to watch the video lesson or to read just the mini lesson. Please note that videos may contain material not included in the written mini lesson. After completing the video and/or mini lesson, the student should complete the lesson practice and review sections. Parents/teachers should grade their child's work daily and provide immediate help and feedback. Students who struggle with the lesson practice should be encouraged to review the mini lesson or the video for help.

Students should complete one section in their *Math 4 Mental Math Map Mysteries* book each time they complete a math lesson.

**Lesson 28: Fractions Equal to One-Half or One**

**Video Lesson:** Scan the QR code or watch the video lesson on [godandbeautiful.com/Math4](http://godandbeautiful.com/Math4). The section below is used during the video.

**Mini Lesson:** When writing a fraction in standard form, we name the numerator (top number) first, write a hyphen, and then name the denominator (bottom number) as an ordinal number. Look at these examples of fractions and their word forms. Note that one-half is an exception to the rule.

one-half, one-fourth, seven-eighths, one-third, three-fifths, one-tenth, two-thirds, five-sixths, ten-tenths

If the numerator of a fraction is half of the denominator, then the fraction is equal to  $\frac{1}{2}$ . In the fractions shown below, notice that the top number of each fraction is exactly half of the bottom number. Each fraction below is equal to  $\frac{1}{2}$ .

Fractions with an odd number in the denominator cannot be written as a fraction to equal one-half with a whole number in the numerator, because you get a mixed number when you divide an odd number in half. We don't normally write a mixed number as a numerator.

**Quick Tip!** Fractions can name whole numbers, too. All the parts together of each circle below make up a whole. Examples of fractions that name one whole are two halves, three thirds, four fourths, and five-fifths. If the numerator and the denominator are the same, the fraction is equal to 1.

**Lesson Practice:**

- Fill in the missing information. The first has been done for you.
- Circle all the fractions that equal  $\frac{1}{2}$  and put a box around all the fractions that equal 1.

**ROBOT REVIEW**

- How long are the robot's legs to the nearest inch?
- Which two polygons make up the robot's eyes?
- How many pentagons can you find on the robot?
- Find a polygon on the robot made up of four right angles and trace it in purple.
- Color five octagons green.
- Find and trace a pair of vertical parallel lines in red.
- Which four polygons make up the robot's feet?
- How tall is the robot to the nearest half inch?
- Find a polygon on the robot with six obtuse angles and color it brown.
- Color nine pentagons orange.
- How many triangles did you find on the robot?
- Find three right angles and draw a small square in the corner of each one.
- Trace a pair of horizontal parallel lines in blue.

# Frequently Asked Questions

## How many lessons should my student do each week?

- There are 120 lessons in the course. If your 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 35–45 minutes. This includes time to watch the video, complete the practice and review sections, and practice multiplication facts.

## What if my child is too slow/fast?

- If your child takes longer than average but is understanding and retaining information, don't worry. You may want to break up the lessons. Complete the video and lesson practice at one time and the review section at another time.
- To avoid holes in his or her math foundation, we suggest not skipping entire levels if your child works more quickly than average but is learning new concepts. Consider having your child do multiple lessons a day to complete the course faster.
- If your child takes less time than average and seems to already know all the information, consider giving the Unit Assessments to see if he or she can skip any units or move on to the next course. Remember, the first few lessons of the course are review from Math 3, and it's expected that most students will know the information already.

## What if my child cannot remember concepts?

- In the back of the course book is a reference guide. This page may be useful for your student to refer to as he or she is completing difficult concepts that require memorizing information such as conversions, volume, perimeter, area, long division, etc.

## 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 mini lesson 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 teach the child using the mini lesson rather than have the child watch the video lesson independently.

## Is Math 4 completed independently by the child?

- Yes, Math 4 is designed for your student to mostly complete independently, though at times children may need parent/teacher assistance to understand a concept. Parents/teachers will need to grade their child's work and should do so on a daily basis when possible, providing immediate feedback.

## Is Math 4 a spiral or mastery program?

- Math 4 is mainly 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?

- Students should always keep scratch paper on hand while completing the lessons. The *Simply Good and Beautiful Math Scratch Pad* is available for purchase.



## 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 use the King James Version.






# UNIT 1 OVERVIEW

## LESSONS 1-30

### Extra Supplies Needed

-  ruler
-  colored pencils or crayons






















### New Concepts Taught

-  commutative property of multiplication
-  compare numbers through hundred millions
-  estimations (sums and differences)
-  measurement to a quarter inch
-  order numbers through hundred millions

### Parent/Teacher Tips

The first several lessons in this unit review foundational concepts that students should have mastered in previous math levels. It is expected and appropriate that these lessons will be fairly easy for the child. These lessons may be finished in much less time than the lesson average.




### Concepts Reviewed and Expanded Upon

-  addition (three or more addends)
-  addition/subtraction (multi-digit, money)
-  angle classifications
-  commutative property of addition
-  conversion (units of length)
-  division (arrays, equal groups)
-  elapsed time beyond 1 hour
-  expanded form through hundred millions
-  fact families and inverse operations
-  fractions and mixed numbers
-  fractions equal to one-half and one
-  geometric figures and polygons
-  mental math (addition and subtraction)
-  multiplication
-  number patterns
-  place value through billions
-  round whole numbers to billions
-  scales
-  solving for unknowns
-  subtraction across zeros
-  time












# UNIT 2 OVERVIEW

## LESSONS 31-60

### Extra Supplies Needed

-  ruler
-  measuring cups and large bowl
-  colored pencils or crayons

















### New Concepts Taught

-  add/subtract fractions (uncommon denominators)
-  associative property of addition
-  associative property of multiplication
-  convert improper fractions to mixed numbers
-  divisibility rules for 2, 5, and 10
-  exponents
-  long division (one-digit divisors)
-  order of operations
-  perfect squares to 144
-  prime and composite numbers
-  triangle classification by angles

### Parent/Teacher Tips

As students learn more advanced concepts, they may want to refer to the Reference Guide on page 394, especially when completing the Review sections. The Reference Guide has visuals and guides to help students practice and memorize certain concepts.

### Concepts Reviewed and Expanded Upon

-  compare fractions
-  conversion (units of volume)
-  equivalent fractions
-  fractions of a set
-  graphs (pictographs, bar graphs, and line graphs)
-  lines of symmetry
-  missing factors
-  multiples and factors
-  multiplication by 100, 1,000, and 10,000
-  perimeter and area (rectangles, squares, and triangles)
-  problem solving with multiple steps
-  reflectional symmetry
-  rotational symmetry
-  similar and congruent shapes
-  temperature
-  triangle classifications by sides



# UNIT 3 OVERVIEW

## LESSONS 61-90

### Extra Supplies Needed

- ▮ 1 standard dice
- ▮ colored pencils or crayons

### New Concepts Taught

- ▮ add/subtract decimals to the thousandths place
- ▮ change mixed numbers to improper fractions
- ▮ circles (center, radius, and diameter)
- ▮ distributive property
- ▮ find mixed numbers using long division
- ▮ geometric transformations
- ▮ long division (with remainders)
- ▮ long division (zero in the quotient)
- ▮ measuring turns
- ▮ multiplication (two-digit by two-digit)
- ▮ perimeter and area (irregular shapes)
- ▮ reducing fractions to simplest form
- ▮ tessellations (regular and semi-regular)
- ▮ volume of cubes
- ▮ volume of rectangular prisms

### Concepts Reviewed and Expanded Upon

- ▮ conversion (units of length)
- ▮ geometric solids
- ▮ multiplication (multiples of 100, 1,000, and 10,000)
- ▮ naming geometric figures
- ▮ patterns
- ▮ quadrilateral classification
- ▮ Roman numerals

### Parent/Teacher Tips

Students will complete multiplication facts in every lesson in Unit 3; however, they will not be prompted to practice the multiplication Sets A–D anymore. Memorizing these facts is vital. If the child is still struggling, consider continuing daily practice using *Musical Multiplication* or another method.

# UNIT 4 OVERVIEW

## LESSONS 91-120

### Extra Supplies Needed

- ▢ 2 standard dice
- ▢ 1 quarter
- ▢ colored pencils or crayons

### New Concepts Taught

- ▢ add/subtract mixed numbers (uncommon denominators)
- ▢ compare decimal numbers to the thousandths place
- ▢ estimation (multiplication and division)
- ▢ long division (check quotients using multiplication)
- ▢ long division (decimal numbers)
- ▢ long division (two-digit divisor)
- ▢ mean, median, mode, and range
- ▢ mental math (multiplication)
- ▢ multiplication (decimal numbers)
- ▢ multiplication (three-digit by two-digit)
- ▢ percents
- ▢ round decimal numbers to the ones and tenths place
- ▢ short division
- ▢ write fractions and mixed numbers as decimals

### Concepts Reviewed and Expanded Upon

- ▢ compare positive and negative numbers
- ▢ conversion (units of weight)
- ▢ coordinate graph
- ▢ fractions of a set
- ▢ identify positive and negative numbers

### Parent/Teacher Tips

Students are not expected to completely master all the concepts taught in Unit 4, especially toward the end of the unit. Some concepts are presented to give the student familiarity with topics that will be taught and expanded on in Math 5.



Math 4

# MENTAL MATH

Map Mysteries



Created by the Simply Good and Beautiful Math Team

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# About This Book

This mental math book correlates with the *Simply Good and Beautiful Math 4 Course Book*, which directs the child to do a lesson box in this mental math book for each lesson (except for lessons that are assessments).

To complete the mental math, the parent or teacher should hold up the book so that the child sees the Questions page and the parent or teacher sees the Answer Key page (or it can be laid flat with the parent or teacher covering the answers with a paper or sticky note). The child should then complete the lesson box number that correlates to his or her lesson in the *Simply Good and Beautiful Math 4 Course Book*, giving the answers aloud. As the child gives the answers, the parent or teacher checks the answers and gives any correction needed. Upon completion of the lesson box, both the parent or teacher and student should place a check mark in the box to mark it as completed.

At the end of each page of four or five lesson boxes, the student is directed to place a sticker from page 71 onto a designated space on the map on page 69. At the end of the course, the student will have a completed picture of the map, and as a reward for completing the course, the child is then able to read the “You-Choose” book included in the course: *Hayden and the Hidden Village*. The map that the child created shows places included in the book.

Students who struggle with a mental math concept should be encouraged to continue through the lesson boxes as several skills will be repeated throughout the book.

Each mental math lesson box is designed to take less than five minutes to complete.

It is most desirable for mental math to be done without the aid of writing anything down. However, if needed, the child may use paper and pencil to help with the problems, with the goal of discontinuing the use of the paper and pencil at some point in the book.

The mental math lesson boxes do not correlate directly with the lessons taught in the *Simply Good and Beautiful Math 4 Course Book*.

