# Math Mammoth Grade 5 Alignment to the Common Core Standards

The table below lists each lesson in the two student worktexts, 5-A and 5-B, and next to it the relevant Common Core Standard (CCS).

## Math Mammoth Grade 5-A

### Chapter 1: The Four Operations

*Note: CCS do not include prime factorization for 5th grade (it is in 4th). I have included it here for review, since students should not forget that topic.*

| Lesson | page | Standards |
|---|---|---|
| Warm Up: Mental Math | 11 | |
| The Order of Operations and Equations | 13 | 5.OA.1 5.OA.2 |
| Review: Addition and Subtraction | 16 | 5.OA.2 |
| Review: Multiplication and Division | 19 | 5.OA.2 |
| Multiplying in Parts | 23 | 5.OA.2 |
| The Multiplication Algorithm | 29 | 5.NBT.5 |
| More Multiplication | 34 | 5.NBT.5 |
| Long Division | 39 | 5.NBT.6 |
| A Two-Digit Divisor 1 | 43 | 5.NBT.6 |
| A Two-Digit Divisor 2 | 47 | 5.NBT.6 |
| Long Division and Repeated Subtraction | 50 | 5.NBT.6 |
| Divisibility Rules | 55 | |
| Review: Factors and Primes | 60 | 4.OA.4 |
| Prime Factorization | 64 | |
| Chapter 1 Review | 69 | 5.OA.1 5.OA.2 5.NBT.5 5.NBT.6 |

### Chapter 2: Large Numbers and the Calculator

*Note: there is no numbered standard for adding and subtracting whole numbers in 5th grade, but the standards document states in the introduction part for 5th grade that students "finalize fluency with multi-digit addition, subtraction, multiplication, and division."*

*Also, while rounding and estimating are not mentioned in the standards for 5th grade, since students learn and use bigger numbers in this chapter than they did in 4th grade, I feel it is good to review and practice them one more time.*

| Lesson | page | Standards |
|---|---|---|
| A Little Bit of Millions | 75 | 5.NBT.1 |
| Place Value Up to Billions | 78 | 5.NBT.1 |
| Exponents and Powers | 82 | 5.NBT.2 |
| Adding and Subtracting Large Numbers | 85 | 4.NBT.4 |
| Rounding 1 | 88 | 4.NBT.3 |
| The Calculator and Estimating | 91 | |
| When to Use the Calculator | 94 | |
| Mixed Review Chapter 2 | 96 | 5.NBT.2 5.NBT.6 |
| Review Chapter 2 | 98 | 5.NBT.1 5.NBT.2 |

# Chapter 3: Problem Solving

*Note: Problem solving or word problems are not mentioned in any of the numbered individual standards for 5th grade. However, obviously word problems are to be included in 5th grade mathematics; for example the recommended mathematical practices in the Common Core Standards include that students are to "Make sense of problems and persevere in solving them."*

| Lesson | page | Standards |
|---|---|---|
| Balance Problems and Equations | 103 | 6.EE.6 6.EE.7 |
| More Equations | 108 | 5.OA.2 6.EE.6 |
| Problem Solving with Bar Models 1 | 112 | 5.OA.2 5.NBT.6 5.NBT.7 |
| Problem Solving with Bar Models 2 | 115 | |
| Problem Solving with Bar Models 3 | 117 | 5.OA.2 5.NBT.6 5.NBT.7 |
| Problem Solving with Bar Models 4 | 119 | 5.OA.2 5.NBT.6 5.NBT.7 |
| Mixed Review Chapter 3 | 123 | 5.OA.1 5.NBT.2 5.NBT.5 5.NBT.6 |
| Chapter 3 Review | 125 | 5.NBT.6 5.NBT.7 |

# Chapter 4: Decimals

| Lesson | page | Standards |
|---|---|---|
| Review: Tenths and Hundredths | 135 | 5.NBT.1 5.NBT.3 |
| More Decimals: Thousandths | 138 | 5.NBT.1 5.NBT.3 |
| Comparing Decimals | 143 | 5.NBT.3 |
| Rounding 2 | 145 | 5.NBT.4 |
| Add and Subtract Decimals | 147 | 5.NBT.7 |
| Multiplying Decimals by Whole Numbers | 151 | 5.NBT.7 |
| Multiplying Decimals in Columns | 155 | 5.NBT.7 |

# Chapter 4, continued

| Lesson | page | Standards |
|---|---|---|
| Multiplying Decimals by Decimals | 157 | 5.NBT.7 5.NF.5 |
| More Decimal Multiplication | 161 | 5.NBT.7 5.NF.5 |
| Long Multiplication | 164 | 5.NBT.7 |
| Dividing Decimals—Mental Math | 165 | 5.OA.2 5.NBT.7 |
| Long Division with Decimals | 170 | 5.OA.2 5.NBT.7 |
| More Long Division with Decimals | 174 | 5.OA.1 5.OA.2 5.NBT.4 5.NBT.7 |
| Multiply and Divide by Powers of Ten | 177 | 5.NBT.2 5.NBT.7 |
| Divide Decimals by Decimals 1 | 182 | 5.NBT.7 |
| Divide Decimals by Decimals 2 | 185 | 5.NBT.4 5.NBT.7 |
| Decimals in Measuring Units and More | 189 | 5.NBT.4 5.MD.1 |
| Rounding and Estimating | 193 | 5.NBT.4 5.MD.1 |
| The Metric System | 195 | 5.MD.1 |
| Converting Between Customary Units of Measurement | 198 | 5.NBT.4 5.MD.1 |
| Number Rule Puzzles | 202 | 5.OA.3 |
| Problem Solving | 203 | 5.NBT.7 |
| Mixed Review Chapter 4 | 207 | 5.OA.1 5.NBT.1 5.NBT.6 |
| Review Chapter 4 | 209 | 5.NBT.1 5.NBT.2 5.NBT.3 5.NBT.4 5.NBT.7 5.NF.5 5.MD.1 |

# Math Mammoth Grade 5-B

## Chapter 5: Statistics and Graphing

*Note: this chapter exceeds the CCS for 5th grade, as statistics topics are not included in the 5th grade standards. However, I feel students will benefit from being introduced to some of the concepts (line graph, histogram, mean, and mode), and from being used to analyzing graphs in order to prepare them for 6th grade statistics topics, which are somewhat advanced. In 6th grade, students will study for example interquartile range and/or mean absolute deviation, and will need to relate the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.*

| Lesson | page | Standards |
|---|---|---|
| Coordinate Grid | 10 | 5.G.1 |
| Number Patterns in the Coordinate Grid | 13 | 5.OA.2 |
| More Number Patterns in the Coordinate Grid | 17 | 5.OA.2 |
| Line Graphs | 21 | 5.G.2 6.SP.4 |
| Reading Line Graphs | 25 | 5.G.2 |
| Double and Triple Line Graphs | 27 | 5.G.2 |
| Making Bar Graphs | 29 | |
| Making Histograms | 31 | 6.SP.4 |
| Double Bar Graphs | 33 | |
| Average (Mean) | 35 | 6.SP.3 6.SP.5 |
| Mean, Mode, and Bar Graphs | 38 | 6.SP.3 6.SP.5 |
| Statistics Project (optional) | 40 | |
| Mixed Review Chapter 5 | 41 | 5.NBT.2 5.NBT.6 5.NBT.7 |
| Chapter 5 Review | 44 | 5.OA.2 |

## Chapter 6: Fractions: Add and Subtract

*Note: The standard 5.NF.1 being in parenthesis for the two lessons on equivalent fractions has to do with the fact that the topic of equivalent fractions is a necessary prerequisite for adding and subtracting unlike fractions.*

| Lesson | page | Standards |
|---|---|---|
| Review: Mixed Numbers | 51 | |
| Adding Mixed Numbers | 55 | 5.NF.2 |
| Subtracting Mixed Numbers 1 | 58 | 5.NF.2 |
| Subtracting Mixed Numbers 2 | 62 | 5.NF.2 |
| Equivalent Fractions 1 | 64 | (5.NF.1) |
| Equivalent Fractions 2 | 67 | (5.NF.1) |
| Adding and Subtracting Unlike Fractions | 69 | 5.NF.1 |
| Finding the (Least) Common Denominator | 72 | 5.NF.1 |
| Add and Subtract: More Practice | 75 | 5.NF.1 5.NF.2 |
| Adding and Subtracting Mixed Numbers | 78 | 5.NF.1 5.NF.2 |
| Comparing Fractions | 83 | |
| Measuring in Inches | 87 | 5.NF.2 5.MD.2 |
| Mixed Review Chapter 6 | 92 | 5.NBT.1 5.NBT.2 5.NBT.5 5.NBT.7 5.MD.1 |
| Chapter 6 Review | 95 | 5.NF.1 5.NF.2 |

## Chapter 7: Fractions: Multiply and Divide

*Note: While simplification of fractions is not mentioned in the Common Core Standards as a topic under any specific standard (in any grade), it is obviously a necessary part of fraction arithmetic, and thus included in 5th grade.*

*Introduction to Ratios is just that: an introduction, and can be omitted. Ratios are studied in detail in 6th grade.*

| Lesson | page | Standards |
|---|---|---|
| Simplifying Fractions 1 | 102 | |
| Simplifying Fractions 2 | 106 | |
| Multiply Fractions by Whole Numbers | 110 | 5.MD.2 5.NF.4 5.NF.6 |
| Multiplying Fractions by Fractions | 114 | 5.NF.4 5.NF.6 |
| Fraction Multiplication and Area | 119 | 5.NF.4 |
| Simplifying Before Multiplying | 125 | 5.NF.4 5.NF.6 |
| Multiplying Mixed Numbers | 129 | 5.NF.6 |
| Multiplication as Scaling/Resizing | 134 | 5.NF.5 5.NBT.4 |
| Fractions Are Divisions | 138 | 5.NF.3 |
| Dividing Fractions 1: Sharing Divisions | 142 | 5.NF.7 5.MD.2 |
| Dividing Fractions 2: Fitting the Divisor | 147 | 5.NF.7 |
| Introduction to Ratios | 151 | 6.RP.1 |
| Mixed Review Chapter 7 | 155 | 5.OA.2 5.NBT.3 5.NBT.7 5.NF.2 5.MD.1 |
| Chapter 7 Review | 158 | 5.NF.4 5.NF.5 5.NF.6 5.NF.7 |

## Chapter 8: Geometry

*Note: I have included lessons for angles, drawing polygons, and area & perimeter for review purposes. Also, the standards do not specifically mention about learning parts of a circle or learning to draw circles in any grade. I decided to include a lesson on those circle topics here in 5th grade.*

| Lesson | page | Standards |
|---|---|---|
| Review: Angles | 166 | 4.MD.5 |
| Review: Drawing Polygons | 168 | 4.G.1 |
| Star Polygons (*optional*) | 170 | |
| Circles | 172 | 5.G.1 |
| Quadrilaterals | 175 | 5.G.3 5.G.4 |
| Equilateral, Isosceles, and Scalene Triangles | 179 | 5.G.4 |
| Area and Perimeter Problems | 184 | 4.MD.3 |
| Volume | 187 | 5.MD.3 5.MD.4 |
| Volume of Rectangular Prisms (Cuboids) | 192 | 5.MD.4 5.MD.5 |
| A Little Bit of Problem Solving | 196 | 5.NBT.7 5.OA.3 5.MD.5 |
| Mixed Review Chapter 8 | 198 | 5.NBT.6 5.NBT.7 5.NF.1 5.NF.4 5.NF.6 |
| Chapter 8 Review | 201 | 5.MD.4 5.MD.5 5.G.1 5.G.4 |