

Beast Academy Scope and Sequence for Grade 4 (books 4A through 4D).

The content covered in Beast Academy Grade 4 is loosely based on the standards created by the Common Core State Standards Initiative.

The table below relates the goals of the Common Core State Standards to the content of the 12 chapters in Beast Academy books 4A through 4D.

For more information on the Common Core State Standards, visit www.corestandards.org.

Beast Academy Grade 4 Chapters 1-12:

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|-------------------|-------------------------------------|
| 1. Shapes | 7. Factors |
| 2. Multiplication | 8. Fractions (+ & -) |
| 3. Exponents | 9. Integers |
| 4. Counting* | 10. Fractions (\times & \div) |
| 5. Division | 11. Decimals |
| 6. Logic* | 12. Probability |

*Chapters 4 and 6 cover Counting and Logic, two areas of mathematics that we feel are woefully underrepresented in the Common Core State Standards.

Grade 4 Common Core Standards	4A			4B			4C			4D		
	1	2	3	4	5	6	7	8	9	10	11	12
Operations & Algebraic Thinking												
4.OA.1. Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.		✓			✓							
4.OA.2. Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.		✓										
4.OA.3. Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.		✓			✓							
4.OA.4. Find all factor pairs for a whole number in the range 1-100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1-100 is prime or composite.							✓					

	4A			4B			4C			4D		
Grade 4 Common Core Standards	1	2	3	4	5	6	7	8	9	10	11	12
4.OA.5. Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.	Included in Chapter 7 of Beast Academy 3C.											
Number & Operations in Base Ten	1	2	3	4	5	6	7	8	9	10	11	12
4.NBT.1. Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division.			✓								✓	
4.NBT.2. Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.											✓	
4.NBT.3. Use place value understanding to round multi-digit whole numbers to any place.											✓	
4.NTB.4. Fluently add and subtract multi-digit whole numbers using the standard algorithm.	Included in Beast Academy grade 2.											
4.NTB.5. Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.		✓										
4.NTB.6. Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.					✓							
Number & Operations—Fractions	1	2	3	4	5	6	7	8	9	10	11	12
4.NF.1. Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.								✓		✓		
4.NF.2. Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $1/2$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.	Included in Chapter 10 of Beast Academy 3D. Reviewed in Chapter 8 of Beast Academy 4C.											

Grade 4 Common Core Standards	4A			4B			4C			4D		
	1	2	3	4	5	6	7	8	9	10	11	12
4.NF.3. Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$.								✓				
4.NF.4. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.										✓		
4.NF.5. Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express $3/10$ as $30/100$, and add $3/10 + 4/100 = 34/100$.											✓	
4.NF.6. Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as $62/100$; describe a length as 0.62 meters; locate 0.62 on a number line diagram.											✓	
4.NF.7. Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual model.											✓	
Measurement & Data	1	2	3	4	5	6	7	8	9	10	11	12
4.MD.1. Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...	Included in Chapter 9 of Beast Academy 3C. Items in red are not included.											
4.MD.2. Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.		✓			✓			✓		✓	✓	
4.MD.3. Apply the area and perimeter formulas for rectangles in real world and mathematical problems. For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.		✓			✓					✓		

