Beast Academy Level 4

CCSS Alignment

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

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

Beast Academy Level 4 Chapters 1-12:

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

Grade 4 Common Core Standards	4A			4B			4C			4D		
Operations & Algebraic Thinking	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
4.OA.A.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.A.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.A.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.B.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.							✓					

4.OA.C.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.		✓										
Number & Operations in Base Ten	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
4.NBT.A.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. [1]			✓									
4.NBT.A.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.	Included in Chapter 10 of Beast Academy Level 2.											
4.NBT.A.3 Use place value understanding to round multi-digit whole numbers to any place.	Included in Chapter 11 of Beast Academy Level 3.											
4.NBT.B.4 Fluently add and subtract multi-digit whole numbers using the standard algorithm.	Included in Chapters 10 & 11 of Beast Academy Level 2.											
4.NBT.B.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.NBT.B.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.A.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.								✓		✓		

[1] Introduced in Chapter 10 of Beast Academy Level 2.

4.NF.A.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. [2]								✓		✓		
4.NF.B.3 Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$.								✓				
4.NF.B.4 Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.										✓		
4.NF.C.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.											✓	
4.NF.C.6 Use decimal notation for fractions with denominators 10 or 100.											✓	
4.NF.C.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.A.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. [3]	Included in Chapter 9 of Beast Academy Level 3.											
4.MD.A.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]		✓			✓			✓		✓	✓	

[2] Introduced in Chapter 10 of Beast Academy Level 3.
[3] Beast Academy does not include generating conversion tables.
[4] Beast Academy does not include line diagrams.

4.MD.A.3 Apply the area and perimeter formulas for rectangles in real world and mathematical problems.		✓								✓		
4.MD.B.4 Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots.	Beast Academy does not include line plots.											
4.MD.C.5 Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement.	✓											
4.MD.C.6 Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.	✓											
4.MD.C.7 Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.	✓											
Geometry	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
4.G.A.1 Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	✓											
4.G.A.2 Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.	✓											
4.G.A.3 Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.	✓											

Other Grades

The following Grade 5 goals of the Common Core State Standards are included in the content of Beast Academy Level 4.

Grade 5 Common Core Standards	4A			4B			4C			4D		
Number & Operations in Base Ten	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
5.NBT.A.1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.											✓	
5.NBT.A.3 Read, write, and compare decimals to thousandths.											✓	
5.NBT.A.4 Use place value understanding to round decimals to any place.											✓	
5.NBT.B.5 Fluently multiply multi-digit whole numbers using the standard algorithm.		✓										
5.NBT.B.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-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.					✓						✓	
5.NBT.B.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.											✓	
Number & Operations – Fractions	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
5.NF.B.3 Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem.										✓		
5.NF.B.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.										✓		

5.NF.B.5 Interpret multiplication as scaling (resizing).										✓		

The following Grade 6 goals of the Common Core State Standards are included in the content of Beast Academy Level 4.

Grade 6 Common Core Standards	4A			4B			4C			4D		
The Number System	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
6.NS.B.4 Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1-100 with a common factor as a multiple of a sum of two whole numbers with no common factor.							✓					
6.NS.C.6 Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.									✓			
6.NS.C.7 Understand ordering and absolute value of rational numbers.									✓			
Expressions & Equations	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
6.EE.A.1 Write and evaluate numerical expressions involving whole-number exponents.			✓									

The following Grade 7 goals of the Common Core State Standards are included in the content of Beast Academy Level 4.

Grade 7 Common Core Standards	4A			4B			4C			4D		
The Number System	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
7.NS.A.1 Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.									✓			

Statistics & Probability	1	2	3	4	5	6	7	8	9	10	11	12
7.SP.C.5 Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.												✓
7.SP.C.6 Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability.												✓
7.SP.C.8 Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.												✓

The following Grade 8 goals of the Common Core State Standards are included in the content of Beast Academy Level 4.

Grade 8 Common Core Standards	4A			4B			4C			4D		
Expressions & Equations	1	2	3	4	5	6	7	8	9	10	11	12
8.EE.A.1 Know and apply the properties of integer exponents to generate equivalent numerical expressions. For example, $3^2 \times 3^{-5} = 3^{-3} = 1/3^3 = 1/27$.			✓									