DragonBox Algebra 12+: Key Standards Supported

ALGEBRA

Use: DragonBox Algebra 12+ is a digital manipulative. It is designed to be used as a teaching tool together with classroom instruction and discussion. The following standards are covered if combined with classroom instruction and discussion. See wewanttoknow.com/teachers for teacher manuals and worksheets.

6.NS.B:	Compute fluently with multi-digit numbers and find common factors and multiples..
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. For example, express 36+8 as 4(9+2)
6.EE.A:	Apply and extend previous understandings of arithmetic to algebraic expressions.
6.EE.A.2	Write, read, and evaluate expressions in which letters stand for numbers.
6.EE.A.3.	Apply the properties of operations to generate equivalent expressions.*For example, apply the distributive property to the expression 3(2+x) to produce the equivalent expression 6+3x; apply the distributive property to the expression 24x+18y to produce the equivalent expression 6(4x+3y); apply properties of operations to y+y+y to produce the equivalent expression 3y.*
6.EE.B:	Reason about and solve one-variable equations and inequalities

6.EE.B.4	Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them).
6.EE.B.6	Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.
6.EE.B.7	Solve real-world and mathematical problems by writing and solving equations of the form x+p=q and px=q for cases in which p, q and x are all nonnegative rational numbers.
7.NS.A.1.c	Understand subtraction of rational numbers as adding the additive inverse, $p-q=p+(-q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.
7.NS.A.1.d.	
7.NS.A.2.	Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.
7.RP.A.2.c.	Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. For example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so.
7.NS.A.3.	Solve real-world and mathematical problems involving the four operations with rational numbers.

7.EE.A.	Use properties of operations to generate equivalent expressions.
7.EE.A.1	Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.
7.EE.B.	Solve real-life and mathematical problems using numerical and algebraic expressions and equations.
7.EE.B.3	Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies
7.EE.B.4	Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.
7.EE.B.4.a	Solve word problems leading to equations of the form px+q=r and p(x+q)=r, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.
8.EE.C.7	Solve linear equations in one variable.
8.EE.C.7.a	Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x=a, a=a, or a=bresults (where a and b are different numbers).
8.EE.C.7.b	Solve linear equations with rational number coefficients, including equations whose solutions require expanding

	expressions using the distributive property and collecting like terms.
HSA.REI.A.1	Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.
HSA.REI.A.2	Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.
HSA.REI.B.3	Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.