Dice Activities for Algebraic Thinking
Correlation to Common Core State Standards

Standard	Activity
Grade 3	
Measurement & Data (3.MD.)	
3.MD.7. Relate area to the operations of multiplication and addition.	pp. 112–113
3.MD.8. Solve real world and mathematical problems involving perimeters of polygons.	pp. 112–113
Grade 4	
Operations & Algebraic Thinking (4.OA)	
4.OA.4. Determine whether a given whole number in the range 1–100 is prime or composite.	p. 9
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.	pp. 67–75, 112–113
Grade 5	
Operations & Algebraic Thinking (5.OA)	
5.OA.1. Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.	pp. 2–3, 7–10, 67–75, 79–87
5.OA.2. Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.	pp. 2–3, 112–113
5.OA.3. Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms.	pp. 48–54, 79–87
Number & Operations in Base Ten (5.NBT)	
5.NBT.7. Add, subtract, multiply, and divide decimals to hundredths.	pp. 2–3, 24–32, 35–43
Number & Operations – Fractions (5.NF)	
5.NF.4. Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.	pp. 24–32, 35–43
Grade 6	
The Number System (6.NS)	
6.NS.1. Interpret and compute quotients of fractions… e.g., by using visual fraction models and equations to represent the problem.	pp. 24–32, 35–43
6.NS.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.	pp. 7–10
6.NS.5. Understand that positive and negative numbers are used together to describe quantities having opposite directions or values.	pp. 2–3

Grade 6 (cont.)	
Expressions and Equations (6.EE)	
6.EE.1. Write and evaluate numerical expressions involving whole-number exponents.	pp. 7–10, 27–32, 36–43, 67–75, 79–87, 112–113
6.EE.2a. Write expressions that record operations with numbers and with letters standing for numbers.	pp. 56–64, 79–87, 112–113
6.EE.2c. Evaluate expressions at specific values of their variables… Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations).	p. 11, 48–54
6.EE.3. Apply the properties of operations to generate equivalent expressions.	pp. 7–10, 67–75, 79–87
6.EE.5. Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.	pp. 24–32, 35–43
6.EE.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.	pp. 79–87, 92–104
6.EE.9. Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable.	pp. 92–104
Grade 7	
The Number System (7.NS)	
7.NS.1. Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers.	pp. 16–19
7.NS.2. Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.	pp. 20–21
Grade 8	
Expressions & Equations (8.EE)	
8.EE.2. Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes.	pp. 7–10, 24–32, 35–43, 67–75, 79–87