Common Core State Standards for Mathematics Recommended Manipulatives for Grades 6 – 8

MANIPULATIVE	6 [™] GRADE	
Fraction bars	6.NS.1 Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. Ex) Use a visual model to show $\frac{2}{3} \div \frac{1}{4}$. (In other words, how many $\frac{1}{4}$ s are there in $\frac{2}{3}$?)	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$

MANIPULATIVE	6 [™] GRADE	7 [™] GRADE	8 [™] GRADE
Algebra tiles	6.NS.5 Understand that positive and negative numbers are used together to describe quantities having opposite directions or value -1 + + 1 = 0	7.NS.1 Add and subtract rational numbers 0 -6 + +2 = -4	
	6.EE.2, 6.EE.3, 6.EE.4 Write expressions that record operations with numbers and with letters standing for numbers. Apply properties of operations to generate equivalent expressions. Identify when two expressions are equivalent. x x 1 $12x$ $2x$ 1 $12x$ 22222222	7.EE.1 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficiencts.	8.EE.7 Solve linear equations in one variable. 3x + 2 = x + 8

MANIPULATIVE	8 [™] GRADE	
Graphing Calculator	8.EE.8, 8.F.2, 8.F.4	
	Solve systems of two linear equations in two variablesestimate solutions by graphing the equations. Compare properties of two functions. Construct a function to model a linear relationship between two quantities. 8.SP.1, 8.SP.2 Construct and interpret scatter plots.	
	Informally fit a straight line.	

MANIPULATIVE	7 [™] GRADE	8 [™] GRADE
Protractor	7.G.2	8.G.1 – 8.G.5
NOTE: protractor should be transparent.	Draw (with ruler and protractor) geometric shapes with given conditions.	Verify properties of rotations, reflections, and translations. Understand congruence and similarity. Use informal language 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.