
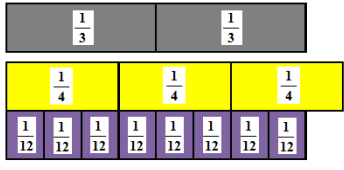


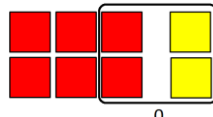
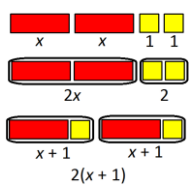
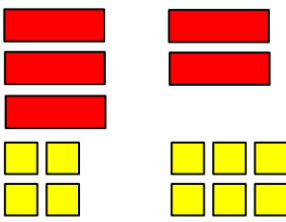
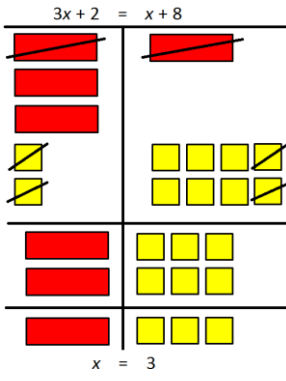




Common Core State Standards for Mathematics
Recommended Manipulatives for Grades 6 – 8

MANIPULATIVE	6 TH GRADE	
<p>Fraction bars</p> 	<p>6.NS.1</p> <p><i>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.</i></p> <p>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 $\frac{2}{3}$?)</p>	 <p style="text-align: center;">$\frac{3}{3}$ or 1 + $\frac{3}{3}$ or 1 + $\frac{2}{3}$ = $\frac{8}{3}$ or 2 $\frac{2}{3}$</p>

MANIPULATIVE	6 TH GRADE	7 TH GRADE	8 TH GRADE
<p>Algebra tiles</p> 	<p>6.NS.5</p> <p><i>Understand that positive and negative numbers are used together to describe quantities having opposite directions or value...</i></p> <p style="text-align: center;">  $-1 + +1 = 0$ </p>	<p>7.NS.1</p> <p><i>Add and subtract rational numbers...</i></p> <p style="text-align: center;">  $-6 + +2 = -4$ </p>	
	<p>6.EE.2, 6.EE.3, 6.EE.4</p> <p><i>Write expressions that record operations with numbers and with letters standing for numbers.</i></p> <p><i>Apply properties of operations to generate equivalent expressions.</i></p> <p><i>Identify when two expressions are equivalent.</i></p> <p style="text-align: center;">  </p>	<p>7.EE.1</p> <p><i>Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.</i></p> <p style="text-align: center;">  $(3x + 4) + (2x + 6) = 5x + 10$ </p>	<p>8.EE.7</p> <p><i>Solve linear equations in one variable.</i></p> <p style="text-align: center;"> $3x + 2 = x + 8$  $x = 3$ </p>

MANIPULATIVE	8 TH GRADE	
<p>Graphing Calculator</p> 	<p>8.EE.8, 8.F.2, 8.F.4</p> <p><i>Solve systems of two linear equations in two variables...estimate solutions by graphing the equations.</i></p> <p><i>Compare properties of two functions.</i></p> <p><i>Construct a function to model a linear relationship between two quantities.</i></p>	<p>8.SP.1, 8.SP.2</p> <p><i>Construct and interpret scatter plots.</i></p> <p><i>Informally fit a straight line.</i></p>

MANIPULATIVE	7 TH GRADE	8 TH GRADE
<p>Protractor</p>  <p><i>NOTE: protractor should be transparent.</i></p>	<p>7.G.2</p> <p><i>Draw (with ruler and protractor) geometric shapes with given conditions.</i></p>	<p>8.G.1 – 8.G.5</p> <p><i>Verify properties of rotations, reflections, and translations.</i></p> <p><i>Understand congruence and similarity.</i></p> <p><i>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.</i></p>