## Common Core State Standards for Mathematics

Recommended Manipulatives for Grades 6-8

| MANIPULATIVE | $6{ }^{\text {TH }}$ GRADE |  |
| :---: | :---: | :---: |
| Fraction bars | 6.NS. 1 <br> 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. <br> 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 $\frac{2}{3}$ ?) |  |


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


| MANIPULATIVE | $8^{\text {TH }}$ GRADE |
| :---: | :--- |
| Graphing Calculator | 8.EE.8, 8.F.2, 8.F.4 <br> Solve systems of two linear equations in two variables...estimate solutions by graphing the equations. <br> Compare properties of two functions. <br> 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 | $7^{\text {TH }}$ GRADE | $8{ }^{\text {TH }}$ GRADE |
| :---: | :---: | :---: |
| Protractor <br> NOTE: protractor should be transparent. | 7.G. 2 <br> Draw (with ruler and protractor) geometric shapes with given conditions. | 8.G. 1 - 8.G. 5 <br> Verify properties of rotations, reflections, and translations. Understand congruence and similarity. <br> 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 angleangle criterion for similarity of triangles. |

