

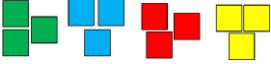
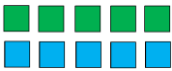
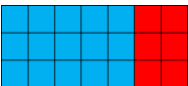
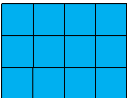
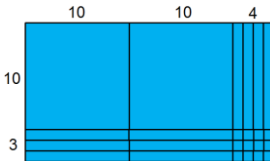
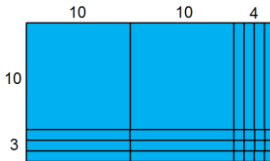
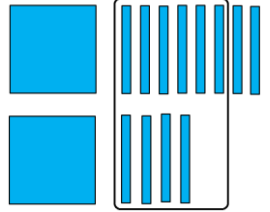
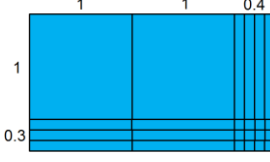









Common Core State Standards for Mathematics
Recommended Manipulatives for Grades 3 – 5

| MANIPULATIVE | 3 RD GRADE | 4 TH GRADE | 5 TH GRADE |
|---|---|--|--|
| <p>Colored square inch tiles (acrylic/plastic ones are cheaper than the wooden ones)</p>  <p>Base-10 manipulatives</p>  | <p>3.OA.1, 3.OA.2, 3.OA.3, 3.OA.5</p> <p><i>Represent multiplication as equal groups; represent division as partitioning into equal groups.</i></p>  <p><i>Represent multiplication and division as array</i></p>  <p><i>Represent multiplication with an area model. Use different colors to illustrate the distributive property.</i></p> <p>$[7 \times 3 = (5 \times 3) + (2 \times 3)]$</p>  <p>3.MD.5, 3.MD.6</p> <p><i>Measure area by counting unit squares.</i></p>  | <p>4.NBT.5, 4.NBT.6</p> <p><i>Illustrate multiplication with an area model.</i></p>  <p style="text-align: center;">$24 \times 13 = 312$</p> | <p>5.NBT.6</p> <p><i>Illustrate division with an area model.</i></p>  <p style="text-align: center;">$312 \div 24 = 13$</p> <p>5.NBT.7</p> <p><i>Illustrate addition and subtraction of decimals.</i></p>  <p style="text-align: center;">$1.8 + 1.4 = 3.2$</p> <p>5.NBT.7</p> <p><i>Illustrate multiplication and division of decimals with an area model.</i></p>  <p style="text-align: center;">$2.4 \times 1.3 = 3.12$</p> |
| <p>Fraction bars</p>  <p>Fraction circles</p>  | <p>3.NF.1, 3.NF.2, 3.NF.3</p> <p><i>Understand fractions and unit fractions.</i></p> <p><i>Understand equivalent fractions.</i></p> <p><i>Compare fractions with same numerators or same denominators.</i></p> | <p>4.NF.1, 4.NF.2, 4.NF.3</p> <p><i>Explain fraction equivalencies.</i></p> <p><i>Compare fractions with different numerators and denominators.</i></p> <p><i>Decompose fractions into unit fractions.</i></p> | <p>5.NF.1, 5.NF.2</p> <p><i>Add and subtract fractions with unlike denominators.</i></p> <p><i>Solve word problems involving addition and subtraction of fractions.</i></p> |

| MANIPULATIVE | 3 RD GRADE | 4 TH GRADE | 5 TH GRADE |
|--|--|--|---|
| <p>Judy Clock (or similar clock that has an hour hand that moves accordingly with the minute hand)</p>  | <p>3.MD.1</p> <p><i>Tell time to the minute</i></p> | | |
| <p>Graduated cylinders, beakers</p>  | <p>3.MD.2</p> <p><i>Measure liquid volumes using standard units of liters.</i></p> <p><i>Solve one-step word problems involving volumes given in the same units.</i></p> | <p>4.MD.1</p> <p><i>Know relative sizes of units: liter and milliliter.</i></p> <p><i>Solve word problems involving liquid volumes, including problems involving simple decimals.</i></p> | <p>5.MD.1</p> <p><i>Convert among different-sized standard measurement units: grams ↔ kg, lbs. ↔ oz.</i></p> |
| <p>Spring scale</p>  | <p>3.MD.2</p> <p><i>Measure masses of objects using standard units of grams and kilograms.</i></p> <p><i>Solve one-step word problems involving masses given in the same units.</i></p> | <p>4.MD.1</p> <p><i>Know relative sizes of units: grams and kilograms; pounds and ounces.</i></p> <p><i>Solve word problems involving masses, including problems involving simple fractions and decimals.</i></p> | <p>5.MD.1</p> <p><i>Convert among different-sized standard measurement units: mL to liters, liters to m</i></p> |
| <p>Centimeter and inch cubes</p>  | | | <p>5.MD.3, 5.MD.4, 5.MD.5</p> <p><i>Measure volumes by counting unit cubes (using cubic cm, cubic inches).</i></p> <p><i>NOTE: Recommend using cm or inch grid paper to construct the prisms, then have students fill the prisms with the cubes.</i></p> |
| <p>Ruler (inch and centimeter), yardstick, meter stick, measuring tape</p> | <p>3.MD.4</p> <p><i>Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch.</i></p> | <p>4.MD.1, 4.MD.2, 4.MD.4</p> <p><i>Know relative sizes of units within the same system: meter and cm; inch, foot, and yard.</i></p> <p><i>Solve word problems involving distance.</i></p> <p><i>Use measurements in fractions of 1/2, 1/4, and 1/8 as part of a line plot.</i></p> | <p>5.MD.1, 5.MD.2</p> <p><i>Convert among different-sized standard measurement units: cm ↔ m, inch ↔ foot ↔ yard</i></p> <p><i>Use measurements in fractions of 1/2, 1/4, and 1/8 as part of a line plot.</i></p> |
| <p>Protractor</p>  <p><i>NOTE: protractor should be transparent.</i></p> | | <p>4.MD.5, 4.MD.6, 4.MD.7</p> <p><i>Measure angles in whole-number degrees using a protractor.</i></p> | |