

Mathematics

Pre Algebra

Core Texts:

Algebra Unplugged, Jim Loats

Algebra Concepts and Applications, Glencoe McGraw-Hill

Algebra Concepts and Skills, McDougal Littell

Transition Mathematics, Scott, Foresman and Company

Core Concepts

Trimester One

Notation

- Decimals for whole numbers and between.
- Estimating.
- Integers.
- Inequality.
- Decimals and fractions.
- Decimals and mixed numbers.
- Equal fractions.

Large and Small Numbers

- Multiplying by 10.
- Powers.
- Scientific Notation.
- Percent.
- Percents, decimals, and fractions.

Variables

- Order of operations.
- Describing patterns with variables.
- Translating expressions.
- Evaluating algebraic expressions.
- Grouping symbols.
- Formulas.
- Inequalities.

Patterns Leading to Addition

- Putting things together as a model.
- Adding fractions.
- The slide model of addition.
- Zero and opposites.
- Adding integers.
- Turns.
- Solving $x + a = b$.
- The commutative property.
- Adding lengths.

Trimester Two:

Patterns Leading to Subtraction

- Taking things away as a model.
- The slide model for subtraction.
- The comparison model for subtraction.
- Solving $x - a = b$.
- Solving $a - x = b$.
- Equivalent sentences and formulas.

- Angles and lines.
- Special quadrilaterals.
- The triangle sum property.

Displays

- Bar graphs.
- Coordinate graphs.
- Graphing equations.
- Translations.
- Reflections.
- Line symmetry.
- Tessellations.

Patterns Leading to Multiplication

- The area model for multiplication.
- Surface area.
- Volumes of rectangular solids..
- Properties of multiplication.
- Size changes—expansions, contractions.
- Multiplying by $1/n$.
- Multiplying fractions.

Multiplication

- Solving $ax = b$.
- The multiplication property of equality.
- Using $ax = b$.
- The rate factor model of multiplications.
- Multiplying integers.
- Multiplying by 0 and 1.
- Solving $ax = b$ when a is negative.
- Solving $ax + b = c$.
- Picturing multiplications with integers.

Trimester Three

Patterns leading to division

- The rate model for division.
- Dividing fractions.
- Dividing integers.
- The ratio comparison model for division.
- Properties of probability.
- Proportions.
- The means-extremes property.
- Proportions in similar figures.

Combining Operations

- The distributive property.
- Patterns for repeating decimals.
- Situations leading to linear combinations..
- Solving $ax + b = cx + d$
- Graphing lines.

Formulas and Real Numbers

- Area of right triangle.
- Square roots.
- The Pythagorean theorem.

- Area of any triangle.
- Areas of polygons.
- Area of circle
- Circle graphs