

Math Topics in 1st-8th grade at Toco Hills Home Tutoring

The following is a brief outline of topics covered. The study of Math encompasses Arithmetic, Algebra and Geometry. We have found that one cannot truly study Mathematics without studying all three since they are interrelated.

The Story of Our Numerals

Numeration/Laws

Wooden Hierarchical Material
Commutative/Distributive Laws

Properties of Numbers

Multiples
Factors
Least Common Multiple
Greatest Common Factor

Divisibility

Measurement

Operations with Whole Numbers

Long Multiplication

Large Bead Frame
Flat Bead Frame
Bank Game
Chequer Board- Multiplication
Geometrical Form of Multiplication
Algorithm for Multiplication

Long Division

Distributive
Group
Algorithm for Division

Squares and Cubes of Numbers

Concept and Notation
Games with Squares and Cubes
Operations with Squares and Cubes

Squaring

Transformation of a Square
Passing from One Square to Another
Squaring a Sum
Extracting Rules for Squaring
Generalizations about Squaring

Cubing

Passing from One Cube to Another
Cubing a Binomial
Cubing a Trinomial

Square Root

Concept/Language & Notation
Square Root Board
Extracting the Square Root
Special cases
Abstraction and Algorithm

Cube Root

Concept/Language/Notation
Cube Root Using Chart
Extracting the Cube Root
Abstraction and Algorithm

Fractions

Concept and Notation
Equivalence
Operations
+/-/x/÷ Simple Cases
+/- with Different Denominators
x by a Fraction
÷ by a Fraction

Decimal Fractions

Presentation of Quantity & Symbol
Formation/Reading of Numbers

Operations

+/-/x/÷ Simple Cases
Conversion
Effect of x or ÷ on Powers of 10

Long Multiplication

Decimal Board
Decimal Chequer Board

Algorithm

Long Division

Distributive
Algorithm

Negative Numbers

Introduction
Operations
Rules

Powers of Numbers

Powers of Two
Exponential Notation
Powers of Ten
Operations Using Expanded Notation

Non Decimal Bases

Ratio and Proportion

Word Problems

Distance/Rate/Time
Principal/Rate/Interest/Time

Introduction to Algebra

Balancing Equations
Solving Word Problems