



Georgia's K-12 Mathematics Standards

Mathematics Manipulatives and Materials Lists (K-12)



This document provides a list of manipulatives and materials to support the implementation of Georgia's K-12 Mathematics Standards using the state frameworks and learning plans provided for each unit in each grade level and course.

**last updated 4/10/2023*



Georgia's K-12 Mathematics Standards

Mathematics Manipulatives and Materials Lists

The purpose of this document is to identify mathematics manipulatives and materials that can be incorporated in mathematics classrooms to support conceptual teaching and learning aligned to Georgia's K-12 Mathematics Standards. The manipulatives and materials included in these lists align with the learning plans and units of study provided by the Georgia Department of Education. These lists are not all inclusive, but are intended to provide a general overview of the types of materials that can be used to teach mathematics conceptually and contextually. Decisions about instructional materials used in the classroom are left to the sole discretion of the local school district.

- [Kindergarten](#)
- [1st Grade](#)
- [2nd Grade](#)
- [3rd Grade](#)
- [4th Grade](#)
- [5th Grade](#)
- [6th Grade](#)
- [7th Grade](#)
- [8th Grade](#)
- [Algebra: Concepts & Connections](#)
- [Geometry: Concepts & Connections](#)
- [Advanced Algebra: Concepts & Connections](#)
- [HS Precalculus](#)
- [High School 4th Course Options](#)

Important Reference Documents:

[Standards Documents](#) | [Curriculum Maps](#) | [Comprehensive Grade Level and Course Overviews](#)



K-12 Mathematics Manipulatives and Materials List

Kindergarten

Manipulatives	
3-D Shape Blocks	Foam Pattern Blocks
100 bead Rekenrek demonstration	Foam Attribute Blocks
100 Number Board Set	Graphing Mat
Base Ten Blocks	Grid Paper on a Roll – 1 inch grid
Code & Go Robot Activity Mouse Set	Magnetic ten frame boards
Coin Sets (Pennies, Nickels, and Dimes)	Magnetic two-color counters
Coin Tiles Sets	Snap Cubes (also known as Linking Cubes)
Color Links	Student Rekenreks
Color Tiles	Teacher Rekenrek
Counting Bears	Ten Frames
Cuisenaire Rods	Two-Color Counters
Foam Dot Cubes (Dice)	Unifix cubes

Resources
<i>Becoming a Teacher of Mathematical Modeling, Grades K-5, by Elizabeth Arnold et.al.</i>
Math Learning Center Website
Mathigon Website
<i>Mindset Mathematics: Visualizing and Investigating Big Ideas, Grade K, by Jo Boaler</i>
<i>Number Talks</i> by Sherry Parrish
<i>Teaching Student-Centered Mathematics Pre-K-2</i> by John Van de Walle et. al.

Mathematical Modeling Materials
Cups
Different types of seeds (radish, beets, bean, and peas)
Famous paintings of night and/or day
Hanger
Real coins (Pennies, Nickels, and Dimes)
Rocks
String
Tape
Various solid objects made of different materials

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K-12 Mathematics Manipulatives and Materials List

1st Grade

Manipulatives		
0 – 99 Chart	Counting Bears	Magnetic ten frame boards
3-D Shape Blocks	Cuisenaire Rods	Magnetic Time Activity Set
120-Bead Rekenrek	Dry Erase Boards (with or without grid) with Dry-Erase Markers and Erasers	Magnetic two-color counters
100 Number Board Set	Empty Number Line	Number Line Clock
Assorted Coins Set	Foam Attribute Blocks	Snap Cubes (also known as Linking Cubes)
Balance Scale	Foam Dot Cubes (Dice)	Student Rekenreks
Base Ten Blocks	Foam Pattern Blocks	Teacher Rekenrek
Code & Go Robot Activity Mouse Set	Foam Tangrams	Teaching Clock
Coin Tiles Sets	Graphing Mat	Ten Frames
Color Links	Grid Paper on a Roll – 1 inch grid	Two-Color Counters
Color Tiles	Interactive Clock	Unifix cubes

Resources
<i>Clothesline Math, by Chris Shore</i>
Clothesline Math Website
Math Learning Center Website
Mathigon Website
Mindset Mathematics: Visualizing and Investigating Big Ideas, Grade 1, by Jo Boaler
Number Talks, by Sherry Parrish
Teaching Student-Centered Mathematics Pre-K-2, by John Van de Walle et. al.
Becoming a Teacher of Mathematical Modeling, Grades K-5, by Elizabeth Arnold, et. al.

Mathematical Modeling Materials
Flashlights
Graph paper
Magnets
Puppets
Thermometer

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K-12 Mathematics Manipulatives and Materials List

2nd Grade

Manipulatives		
0 – 99 Chart	Double-Sided Hundreds Boards	Magnetic two-color counters
3-D Shape Blocks	Dry Erase Boards (with or without grid) with Dry-Erase Markers and Erasers	Number Line Clock
120-Bead Rekenrek	Elapsed Time Ruler	Pattern Blocks Geoboard
100 Number Board Set	Empty Number Line	Place Value Dice
Assorted Coins Set	Foam Attribute Blocks	Place Value Disks
Balance Scale	Foam Dot Cubes (Dice)	Snap Cubes (or Linking Cubes)
Base Ten Blocks	Foam Pattern Blocks	Student Rekenreks
Beginner Ruler	Foam Tangrams	Teacher Rekenrek
Code & Go Robot Activity Mouse Set	GeoMirrors or Miras	Teaching Clock
Coin Tiles Sets	Graphing Mat	Ten Frames
Color Links	Grid Paper on a Roll – 1 inch grid	Two-Color Counters
Color Tiles	Interactive Clock	Unifix Cubes
Counting Bears	Magnetic Array Set	
Cuisenaire Rods	Magnetic Time Activity Set	

Resources
<i>Becoming a Teacher of Mathematical Modeling, Grades K-5, by Elizabeth Arnold et. al.</i>
<i>Clothesline Math, by Chris Shore</i>
Clothesline Math Website
Math Learning Center Website
Mathigon Website
<i>Mindset Mathematics: Visualizing and Investigating Big Ideas, Grade 2, by Jo Boaler</i>
<i>Number Talks, by Sherry Parrish</i>
<i>Teaching Student-Centered Mathematics Pre-K-2, by John Van de Walle, et. al.</i>

Mathematical Modeling Materials
Digital tools (e.g., computers, tablets, cameras, software, 3D printers, etc.)
Handheld Tally Counter
Ingredients for trail mix
Measuring tools
Recyclable items (water bottles, paper products, etc.)
Timer

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K-12 Mathematics Manipulatives and Materials List

3rd Grade

Manipulatives		
0 – 99 Chart	Double-Sided Write & Wipe cm grid board with Dry-Erase Markers and Erasers	Magnetic Time Activity Set
3-D Shape Blocks	Dry Erase Boards (with or without grid)	Number Line Clock
120-Bead Rekenrek	Elapsed Time Ruler	Pattern Blocks Geoboard
100 Number Board Set	Empty Number Line	Place Value Dice
Assorted Coins Set	Flexible 12" Ruler	Place Value Disks
Balance Scale	Foam Attribute Blocks	Playing Cards (Standard Size)
Base Ten Blocks (Plastic or Foam)	Foam Dot Cubes (Dice)	Power Polygons
Beginner Ruler	Foam Pattern Blocks	Snap Cubes (or Linking Cubes)
Code & Go Robot Activity Mouse Set	Foam Tangrams	Student Rekenreks
Coin Tiles Sets (Form or Plastic)	GeoMirrors or Miras	Teacher Rekenrek
Color Links	Graphing Mat	Teaching Clock
Color Tiles (Stand-alone and/or Connecting)	Grid Paper on a Roll – 1 inch grid	Ten Frames
Counting Bears	Interactive Clock	Time Rods
Cuisenaire Rods	Magnetic Array Set	Two-Color Counters
Double-Sided Hundreds Boards	Magnetic Demonstration Two-Color Counters	Unifix cubes

Resources
<i>Becoming a Teacher of Mathematical Modeling, Grades K-5, by Elizabeth Arnold, et.al.</i>
<i>Clothesline Math, by Chris Shore</i>
Clothesline Math Website
Math Learning Center Website
Mathigon Website
<i>Mindset Mathematics: Visualizing and Investigating Big Ideas, Grade 3, by Jo Boaler</i>
<i>Number Talks, by Sherry Parrish</i>
<i>Teaching Student-Centered Mathematics 3-5, by John Van de Walle et.al.</i>

Mathematical Modeling Materials	
Rocks	Soil Probe
Seeds or small plants	Tape Measure or Yard stick
Soil	Thermometer

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K-12 Mathematics Manipulatives and Materials List

4th Grade

Manipulatives	
Angles	Graph Paper on a Roll – cm grid
Assorted Coins	Graphing Mat
Balance Scale	Magnetic Time Activity Set
Base Ten Blocks Factor Tracks	Pattern Blocks (Foam or Plastic)
Base Ten Blocks (Foam, Plastic, or Wooden)	Pattern Blocks Geoboard
Color Tiles (Foam or Plastic, Separated or Connecting)	Picture Grids for Fractions and Decimals
Cuisenaire Rods	Playing Cards Standard Size
Decimal Squares	Protractor, 360 degree - Orange, Solid scale
Double-Sided Write and Wipe cm grid board with Dry-Erase Markers and Erasers	Snap Cubes (or Connecting Cubes)
Elapsed Time Ruler	Student Rekenreks
Elapsed Time Ruler	Teacher Rekenrek
Empty Number Line	Two-Color Counters
GeoMirrors or Miras	

Resources
<i>Becoming a Teacher of Mathematical Modeling, Grades K-5, by Elizabeth Arnold et.al.</i>
<i>Clothesline Math, by Chris Shore</i>
Clothesline Math Website
Math Learning Center Website
Mathigon – The Mathematical Playground Website
<i>Mindset Mathematics: Visualizing and Investigating Big Ideas, Grade 4, by Jo Boaler</i>
<i>Number Talks, by Sherry Parrish</i>
PhET Interactive Simulations Website
<i>Teaching Student-Centered Mathematics 3-5, by John Van de Walle et.al.</i>

Mathematical Modeling Materials
Coding software
Directional Compasses (angle measure)
Maps
Paper of various sizes

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K-12 Mathematics Manipulatives and Materials List

5th Grade

Manipulatives	
Angles	Graph Paper on a Roll – cm grid
Assorted Coins	Graphing Mat
Balance Scale	Magnetic Time Activity Set
Base Ten Blocks Factor Tracks	Pattern Blocks (Foam or Plastic)
Base Ten Blocks (Foam, Plastic, or Wooden)	Pattern Blocks Geoboard
Color Tiles (Foam or Plastic, Separated or Connecting)	Picture Grids for Fractions and Decimals
Cuisenaire Rods	Playing Cards (Standard Size)
Decimal Squares	Protractor, 360 degree - Orange, Solid scale
Double-Sided Write and Wipe cm grid board with Dry-Erase Markers and Erasers	Snap Cubes or Connecting Cubes
Elapsed Time Ruler	Student Rekenreks
Elapsed Time Ruler	Teacher Rekenrek
Empty Number Line	Tangrams
Flexible 12" Ruler	XY Coordinate Pegboards
GeoMirrors or Miras	

Resources
<i>Becoming a Teacher of Mathematical Modeling, Grades K-5, by Elizabeth Arnold et.al.</i>
<i>Clothesline Math, by Chris Shore</i>
Clothesline Math Website
Math Learning Center Website
Mathigon – The Mathematical Playground Website
<i>Mindset Mathematics: Visualizing and Investigating Big Ideas, Grade 5, by Jo Boaler</i>
<i>Number Talks Fractions, Decimals, and Percentages, by Sherry Parrish</i>
PhET Interactive Simulations Website
<i>Teaching Student-Centered Mathematics 3-5, by John Van de Walle et.al.</i>

Mathematical Modeling Materials
Food thermometer
Health tracker
Ingredients for s'mores (marshmallows, graham crackers, chocolate)
Various types of lunch bags (paper, insulated, etc.)

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K-12 Mathematics Manipulatives and Materials List

6th Grade

Manipulatives
Angle Classroom Kit
Balance Scale
Color tiles
Cuisenaire Rods
Dice
Double-Sided Write and Wipe cm grid board with Dry-Erase Markers and Erasers
Empty Number Line
GeoMirrors or Miras
Geometry Nets (Polydron Geometry Shapes)
Graphing Mat
Graph Paper on a Roll – cm grid
Magnetic Algebra Tiles Demo
Playing Cards (Standard Size)
Tangrams
Two-Color Counters
X and Y Axis Double-Sided Dry-Erase Mats with Dry-Erase Markers and Erasers
XY Coordinate Pegboards

Resources
Big Data, Small Devices - Book from NSTA
<i>Clothesline Math</i> , by Chris Shore
Clothesline Math Website
Math Learning Center Website
Mathigon – The Mathematical Playground Website
<i>Mindset Mathematics: Visualizing and Investigating Big Ideas, Grade 6</i> , by Jo Boaler
<i>Number Talks Fractions, Decimals, and Percentages</i> , by Sherry Parrish
PhET Interactive Simulations Website
<i>Teaching Student-Centered Mathematics 5-8</i> , by John Van de Walle et.al.

Mathematical Modeling Materials
Data collection probes
Statistical analysis tools (MS Excel, R, etc.)
Productivity technology tools

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K-12 Mathematics Manipulatives and Materials List

7th Grade

Manipulatives	
Angles Classroom Kit	GeoMirrors (or Miras)
Algebra Tiles	Graph Paper on a Roll – cm grid
Balance Scale	Graphing Mat
Color tiles	Protractors
Compasses	Playing Cards (Standard Size)
Cuisenaire Rods	Spinners
Dice	Two-color counters
Double-Sided Write and Wipe cm grid board with Dry-Erase Markers and Erasers	X and Y Axis Double-Sided Dry-Erase Mats with Dry-Erase Markers and Erasers
Geoboards	XY Coordinate Pegboards

Resources
<i>Clothesline Math, by Chris Shore</i>
Clothesline Math Website
Math Learning Center Website
Mathigon – The Mathematical Playground Website
<i>Mindset Mathematics: Visualizing and Investigating Big Ideas, Grade 7, by Jo Boaler</i>
<i>Number Talks Fractions, Decimals, and Percentages, by Sherry Parrish</i>
PhET Interactive Simulations Website
<i>Teaching Student-Centered Mathematics 5-8, by John Van de Walle et.al.</i>

Mathematical Modeling Materials
Chalk
Cones
Fossils and interesting items found in the earth
Long pieces of string or yarn
Measuring tape
Removable tape
Stopwatch

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K-12 Mathematics Manipulatives and Materials List

8th Grade

Manipulatives	
6-sided dice & 10-sided dice	GeoMirrors or Miras
Algeblocks	Graph Paper on a Roll – cm grid
Algebra Tiles (magnetic or non-magnetic)	Graphing Mat
Angle's Classroom Kit	Graphing Technology
Balance Scale	Playing Cards Standard Size
Color Tiles	Two-Color Counters
Cuisenaire Rods	X and Y Axis Double-Sided Dry-Erase Mats with Dry-Erase Markers and Erasers
Double-Sided Write and Wipe cm grid board with Dry-Erase Markers and Erasers	XY Coordinate Pegboards

Resources
<i>Clothesline Math</i> , by Chris Shore
Clothesline Math Website
Desmos Website
Math Learning Center Website
Mathigon – The Mathematical Playground Website
<i>Mindset Mathematics: Visualizing and Investigating Big Ideas, Grade 8</i> , by Jo Boaler
<i>Number Talks Fractions, Decimals, and Percentages</i> , by Sherry Parrish
PhET Interactive Simulations Website
<i>Teaching Student-Centered Mathematics 5-8</i> , by John Van de Walle et.al.

Mathematical Modeling Materials
100 ml graduated cylinder
Balance (scale)
Clinometers
Hershey's miniature candy bars (or similar)
Meter Stick
Tape
Timer

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HS Algebra: Concepts & Connections

Manipulatives
6-sided dice & 10-sided dice
Algeblocks
Algebra Tiles (magnetic or non-magnetic)
Angle Classroom Kit
Color Tiles
Double-Sided Write and Wipe cm grid board with Dry-Erase Markers and Erasers
Balance Scale
GeoMirrors (or Miras)
Graph Paper on a Roll – cm grid
Graphing Mat
Graphing Technology
Playing Cards Standard Size
Two-Color Counters
XY Axis Pegboards (Movable axes) with Rubberbands
X and Y Axis Double-Sided Dry-Erase Mats with Dry-Erase Markers and Erasers

Resources
<i>Teaching Student-Centered Mathematics 5-8, by John Van de Walle et.al.</i>
<i>Clothesline Math, by Chris Shore</i>
Clothesline Math Website
Desmos Website
Geogebra Website
Math Learning Center Website
Mathigon – The Mathematical Playground Website
<i>Number Talks Fractions, Decimals, and Percentages, by Sherry Parrish</i>
PhET Interactive Simulations Website

Mathematical Modeling Materials
Audio programming software and tools to create sound design
Design Software
Statistical analysis tools (MS Excel, R, etc.)

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HS Geometry: Concepts & Connections

Manipulatives	
6-sided dice & 10-sided dice	GeoStix
Advanced Geometric Shapes	Graphing Mat
Algeblocks	Graph Paper on a Roll – cm grid
Algebra Tiles (magnetic or non-magnetic)	Graphing Technology
Angle Classroom Kit	Hands-On Trigonometry Proofs
Balance Scale	Pattern Numbers
Color tiles	Playing Cards Standard Size
Compasses	Polyhedra Sets
Cubed Cubes	The Irrational Puzzle
Cube Puzzle	Two-color counters
Dodecahedron Puzzles	X and Y Axis Double-Sided Dry-Erase Mats with Dry-Erase markers and Erasers
Dodecaplex Puzzle	XY Axis Pegboards (Movable axes) with Rubberbands
Geometric Magic Squares	Double-Sided Write and Wipe cm grid board with Dry-Erase Markers and Erasers
GeoMirrors (or Miras)	

Resources
Clothesline Math Website
Desmos Website
Geogebra Website
Math Learning Center Website
Mathigon – The Mathematical Playground Website
PhET Interactive Simulations Website

Mathematical Modeling Materials
Accordion Figures (pre-made or hand made with recyclable materials)
Cones and other 3-D shapes found in the real world
Design Software
Dodecahedron Solids and Minerals
Long pieces of string or yarn
Measuring tape
Removable tape or chalk

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HS Advanced Algebra: Concepts & Connections

Manipulatives	
6-sided dice & 10-sided dice	Graphing Mat
Advanced Geometric Shapes	Graph Paper on a Roll – cm grid
Algebra Tiles (Magnetic or Non-Magnetic)	Hands-On Trigonometry Proofs
Algeblocks	Pattern Numbers
Angle Classroom Kit	Playing Cards Standard Size
Balance Scale	Two-Color Counters
Color Tiles	X and Y Axis Double-Sided Dry-Erase Mats with Dry-Erase Markers and Erasers
Double-Sided Write and Wipe cm grid board with Dry-Erase Markers and Erasers	XY Axis Pegboards (Movable axes) with Rubberbands
GeoMirrors (or Miras)	

Resources
Clothesline Math Website
Desmos Website
Geogebra Website
Math Learning Center Website
Mathigon – The Mathematical Playground Website
PhET Interactive Simulations Website

Mathematical Modeling Materials
Clinometer
Long pieces of string or yarn
Measuring tools such as rulers or yardsticks
Thermometers

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HS Precalculus

Manipulatives
6-sided dice & 10-sided dice
Advanced Geometric Shapes
Algebra Tiles (Magnetic or Non-Magnetic)
Angle Classroom Kit
Balance Scale
Color tiles
Double-Sided Write and Wipe cm grid board with Dry-Erase Markers and Erasers
GeoMirrors (or Miras)
Graph Paper on a Roll – cm grid
Graphing Mat
Graphing Technology Tools
Hands-on Trigonometry Proofs
Pattern Numbers
Playing Cards Standard Size
Two-Color Counters
X and Y Axis Double-Sided Dry-Erase Mats with Dry-Erase Markers and Erasers
XY Axis Pegboards (Movable axes) with Rubberbands

Resources
3D Models into Active Learning (Harvard Active Learning Labs)
Clothesline Math Website
Desmos Website
Geogebra Website
Math Learning Center Website
Mathigon – The Mathematical Playground Website
PhET Interactive Simulations Website

Mathematical Modeling Materials
Accordion Figures (pre-made or hand made with recyclable materials)
Bouncing Ball
Clinometer
Paper Mache' for Surfaces

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High School 4th Math Courses

Manipulatives	
6-sided dice & 10-sided dice	Graphing Mat
Advanced Geometric Shapes	Graphing Technology Tools
Algebra Tiles (Magnetic or Non-Magnetic)	Hands-on Trigonometry Proofs
Angle Classroom Kit	Pattern Numbers
Balance Scale	Playing Cards Standard Size
Color tiles	Two-color counters
Double-Sided Write and Wipe cm grid board with Dry-Erase Markers and Erasers	X and Y Axis Double-Sided Dry-Erase Mats with Dry-Erase Markers and Erasers
GeoMirrors (or Miras)	XY Axis Pegboards (Movable axes) with Rubberbands
Graph Paper on a Roll – cm grid	

Resources
3D Models into Active Learning (Harvard Active Learning Labs)
Clothesline Math Website
Desmos Website
Geogebra Website
Math Learning Center Website
Mathigon – The Mathematical Playground Website
PhET Interactive Simulations Website

Mathematical Modeling Materials
Accordion Figures (pre-made or hand made with recyclable materials)
Bouncing Ball
Clinometer
Paper Mache' for Surfaces

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