



**Adult
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MATHEMATICS CURRICULUM FRAMEWORK

Office of Adult Education
Technical College System of Georgia

Mathematics Key

The mathematics curriculum map is intended to be used in conjunction with the College and Career Readiness Content Progressions for Mathematics, which highlights the most important CCR standards in each level on instruction.

The charts are divided by level (A-E), then by the domains in which the standards fall—Number, Geometry, Operations and Algebra, Statistics and Probability. All standards from the Content Progressions have been sorted into the appropriate Major Work of the Level domain in each level. Standard abbreviations listed in *italics* are considered supporting standards in the level.

College and Career Readiness Level-Specific Standard Key:

NBT: Number Base Ten
OA: Operations and Algebraic Thinking
G: Geometry
NF: Number and Operations—Fractions
RP: Ratios and Proportions
MD: Measurement and Data
SP: Statistics and Probability
N.RN: The Real Number System
N.Q: Number and Quantity
A.APR: Algebra: Arithmetic with Polynomials and Rational Expressions
A.CED: Algebra: Creating Equations
A.REI: Algebra: Reasoning with Equations and Inequalities
F.IF: Functions: Interpreting Functions
F.BF: Functions: Building Functions
F.LE: Functions: Linear, Quadratic, and Exponential Models
G.CO: Geometry: Congruence
G.SRT: Geometry: Similarity, Right Triangles, and Trigonometry
G.GMD: Geometry: Geometric Measurement and Dimension
G.MG: Geometry: Modeling with Geometry
S.ID: Statistics and Probability: Interpreting Categorical and Quantitative Data

Standards for Mathematical Practice

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.



Level A

Major Work of the Level	College and Career Readiness Level-Specific Standard(s)	Indicators: Knowledge <i>The learner should know...</i>	Benchmarks: Application <i>The learner will be able to...</i>	Sample Activity	Sample Assessment	Resources
<u>Number:</u> Developing understanding of whole number place values for tens and ones	1.NBT.2	How to identify numbers in ones and tens place values	Bundle and describe two-digit numbers in groups of ten (10, 20, etc.)			
<u>Number:</u> Developing understanding of addition and subtraction and the properties of these operations	1.NBT.3, 1.NBT.4, 1.NBT.5, 1.NBT.6, 1.OA.2, 1.OA.3, 1.OA.4, 1.OA.5, 1.OA.6, 1.OA.7, 1.OA.8	How to identify numbers as $>$, $=$, and $<$ How to add within 100 How to identify numbers 10 more or less than a given number How to subtract multiples of 10 from 10-90	Fluently identify and calculate numbers in bundles of 10 up to 100			
<u>Geometry:</u> Describing and reasoning about shapes and their attributes	K.G.4, 1.G.2	How to compare, identify, and compose 2D/3D shapes	Name, compare, and draw 2D and 3D shapes			
<u>Geometry:</u> Describing understanding of linear measurement	1.MD.2, 1.MD.4	How to express measurement in units	Measure an object using a given unit			

Level B

Major Work of the Level	College and Career Readiness Level-Specific Standard(s)	Indicators: Knowledge <i>The learner should know...</i>	Benchmarks: Application <i>The learner will be able to...</i>	Sample Activity	Sample Assessment	Resources
Number: Extending understanding of base-10 notation	2.NBT.1, 2.NBT.2, 2.NBT.3	Numbers within 1,000	Count, read, and write 3-digit numbers up to 1,000			
Number: Adding and subtracting to 1,000; fluency and application to 100	2.NBT.4, 2.NBT.6, 2.NBT.7, 2.NBT.8, 2.NBT.9, 2.OA.1, 2.OA.2,	How to compare, add, and subtract up to 1,000	Compare (<, =, >) and add/subtract three-digit numbers; fluently apply addition/subtraction strategies up to 100			
Number: Understanding multiplication and division of whole numbers to 100	3.NBT.3, 3.OA.1, 3.OA.2, 3.OA.3, 3.OA.4, 3.OA.5, 3.OA.6, 3.OA.7, 3.OA.8, 3.OA.9	How to multiply 1-digit numbers by multiples of 10	Use place value strategies and appropriate operations to multiply 1-digit numbers by multiples of 10			
Number: Developing understanding of fractions, especially unit fractions	3.NF.1, 3.NF.2, 3.NF.2a, 3.NF.2b, 3.NF.3a-d	How to identify, represent, and compare fractions	Identify and represent fractions appropriately on a number line, including whole numbers as fractions			
Geometry: Using standard units of measure for length, time, liquid volume, and mass	2.MD.3, 3.MD.2, 2.MD.2, 2.MD.10, 3.MD.3, 3.MD.4	How to measure time, length, volume, and mass	Recognize attributes of standard units of measure			

<p><u>Geometry:</u> Developing understanding of area and its relationship to addition and multiplication</p>	<p>3.MD.5, 3.MD.6, 3.MD.7a-d, 3.MD.8</p>	<p>How to multiply and add to find total area</p>	<p>Find areas of straight-sided shapes using given units</p>			
<p><u>Geometry:</u> Analyzing and partitioning 2-dimensional shapes</p>	<p>2.G.1, 2.G.3, 3.G.1, 3.G.2</p>	<p>How to draw and equally divide shapes</p>	<p>Construct and divide shapes into equal parts</p>			

Level C

Major Work of the Level	College and Career Readiness Level-Specific Standard(s)	Indicators: Knowledge <i>The learner should know...</i>	Benchmarks: Application <i>The learner will be able to...</i>	Sample Activity	Sample Assessment	Resources
Number: Extending the number system to positive rational numbers	4.NBT.1, 4.NBT.2, 4.NBT.3, 4.NBT.4, 4.NBT.6, 5.NBT.1	Basic place value applications	Read, write, and round multi-digit whole numbers			
Number: Extending place value understanding for decimals to thousandths	5.NBT.2, 5.NBT.3, 5.NBT.3a-b	How to read, write, and compare decimals to thousandths	Demonstrate understanding of decimals to the thousandths place			
Number: Attaining fluency with operations, using multi-digit whole numbers and decimals	4.NBT.5, 5.NBT.4, 5.NBT.5, 5.NBT.7, 6.NS.2, 6.NS.3	How to multiply whole numbers and decimals	Fluently multiply whole numbers and decimals			
Number: Understanding fraction equivalence and comparison	4.NF.1, 4.NF.2, 5.NF.1	How to identify and compare fractions	Use models to compare fractions with $<$, $=$, and $>$			
Number: Developing fluency with sums and differences of fractions	4.NF.3a-b, 4.NF.3c-d, 4.NF.3d, 5.NF.1, 5.NF.2,	How to add and subtract fractions	Fluently add and subtract fractions and mixed numbers			

Number: Connecting ratio and rate to whole number multiplication and division	4.NF.4, 4.NF.4b, 4.NF.4c, 5.NF.3, 5.NF.4, 5.NF.5, 5.NF.6, 5.NF.7, 5.NF.7a-b, 5.NF.7c, 6.NS.1, 6.RP.1, 6.RP.2	How to connect fraction/decimal concepts to ratios	Solve word problems that compare fraction/decimal models with introduction to ratio and rate concepts			
Algebra: Writing, evaluating, and interpreting expressions and equations	4.OA.1, 4.OA.2, 4.OA.3, 4.OA.4, 4.OA.5, 5.OA.1, 5.OA.2, 6.EE.1, 6.EE.2a-c, 6.EE.3, 6.EE.4, 6.EE.5, 6.EE.6, 6.EE.7, 6.EE.8, 6.EE.9	How to read, write, and solve simple expressions and equations	Apply understanding of equation operations to solve simple expressions and equations			
Geometry: Developing understanding of the coordinate plane	5.G.1, 5.G.2, 6.G.3	How to describe the coordinate plane	Draw shapes on the coordinate plane			
Geometry: Classifying geometric 2-dimensional figures based on properties	4.G.1, 5.G.3, 4.MD.2, 4.MD.3, 4.MD.5, 4.MD.6, 4.MD.7, 5.MD.1	How to classify shapes	Apply understanding of geometric shape attributes to classify, measure, and draw them			
Geometry: Developing an understanding and solving problems involving volume and surface area	6.G.4, 5.MD.3, 5.MD.4, 5.MD.5, 5.MD.5a-c,	How to find surface area	Apply geometric principles to			
Statistics and Probability: Developing understanding of	5.MD.2, 6.SP.1, 6.SP.2, 6.SP.3, 6.SP.4	How to describe basic elements of statistical mathematics	Use data and plots to analyze statistical variation			

Level D

Major Work of the Level	College and Career Readiness Level-Specific Standard(s)	Indicators: Knowledge <i>The learner should know...</i>	Benchmarks: Application <i>The learner will be able to...</i>	Sample Activity	Sample Assessment	Resources
Number: Extending number sense and fluency with operations to all rational numbers	6.NS.5, 6.NS.6a-c, 6.NS.7, 6.NS.7a-d, 6.NS.8, 7.NS.1, 7.NS.1b, 7.NS.1c, 7.NS.1d, 7.NS.2, 7.NS.2a-d, 7.NS.3	How to apply properties of operations to rational numbers	Fluently apply concepts of rational and signed numbers to interpret inequalities and numerical order			
Number: Understanding ratio and rate and using them to solve problems	6.RP.3a-d, 7.RP.1, 7.RP.2a-d, 7.RP.3	How to compute unit rates	Recognize proportional relationships and compute unit rates			
Algebra: Applying proportional relationships	8.EE.5	How to compute proportional relationships	Apply proportional relationship understanding to solve proportion problems			
Algebra: Working with expressions and linear equations	7.EE.1, 7.EE.2, 7.EE.3, 8.EE.1, 8.EE.2, 8.EE.3, 8.EE.7, 8.EE.7a-b	How to apply understanding of expressions and linear equations	Compute and expand linear equations			
Algebra: Solving linear equations and systems of linear equations	7.EE.4, 7.EE.4a-b, 8.EE.4, 8.EE.8, 8.EE.8a-c	How to use basic elements of linear equations	Construct and solve systems of linear equations			
Algebra: Developing the concept of function	8.F.1, 8.F.3	How to identify and interpret functions	Describe elements of functions and interpret them			
Algebra:	8.F.4, 8.F.5	How to graph functions	Use basic understanding of			

Graphing functions in the coordinate plane and analyzing their graphs			functions to graph them			
Geometry: Solving problems involving scale drawings	7.G.1	How to create and compute scale drawings	Reproduce and analyze scale drawings in multiple scales			
Geometry: Solving problems involving 2- and 3-dimensional figures: area, surface area, and volume	7.G.4, 7.G.5, 7.G.6	How to solve problems using basic area, surface area, and volume formulas	Find area, surface area, and volume of 2D and 3D shapes			
Geometry: Analyzing 2- and 3-dimensional shapes using side length and angle measurements, similarity, and congruence	8.G.2, 8.G.4, 8.G.5,	The characteristics of similar and congruent shapes	Identify similar and congruent shapes			
Geometry: Applying the Pythagorean theorem	8.G.7, 8.G.8	How to solve the Pythagorean Theorem	Apply the Pythagorean Theorem to solve a variety of problems			
Statistics and Probability: Understanding patterns of association for bivariate data and describing them with a linear	8.SP.2, 8.SP.3, 8.SP.4	How to describe patterns using data	Use bivariate measurement data to describe patterns			

equation, when appropriate						
Statistics and Probability: Summarizing and interpreting data and data distributions	6.SP.5, 7.SP.3, 7.SP.4, 8.SP.1	How to summarize numerical sets	Observe given sets of data to describe patterns and summarize trends			
Statistics and Probability: Understanding and applying probability concepts	7.SP.5, 7.SP.6, 8.SP.4	How to calculate probability	Apply problem-solving concepts to determining and calculating probability			
Statistics and Probability: Drawing inferences about populations based on random samples (probability distributions)	7.SP.1, 7.SP.2, 7.SP.6, 7.SP.7a-b, 7.SP.8a-b	How to use data from random sampling	Make inferences about a population based on random samples from the population			

Level E

Major Work of the Level	College and Career Readiness Level-Specific Standard(s)	Indicators: Knowledge <i>The learner should know...</i>	Benchmarks: Application <i>The learner will be able to...</i>	Sample Activity	Sample Assessment	Resources
Number: Extending understanding of number systems to the set of real numbers	N.Q.1	How to use units consistently	Interpret and apply understanding of units to solve multi-step problems and data displays			
Number: Writing equivalent expressions involving radicals and rational exponents	N.RN.2	How to solve expressions	Use properties of exponents and roots			
Number: Reasoning quantitatively and the use of units and appropriate levels of precision	N.Q.3	How to measure accurately	Fluently calculate measurements with precision			
Algebra: Defining, evaluating, comparing, and modeling with linear, quadratic, and exponential functions and equations	A.SSE.3, A.SSE.3a, A.APR.6, F.IF.9, F.BF.1	How to solve multiple types of equations	Interpret and solve various expressions and equations			
Algebra: Building, interpreting, and	A.SSE.1, A.SSE.1a, A.SSE.2, F.IF.1, F.IF.2, F.IF.4,	How to interpret functions in different ways	Apply multiple methods to understanding and interpreting functions			

analyzing functions using different representations	F.IF.8b, F.BF.1, F.LE.1, F.LE.1b, F.LE.1c, F.LE.5					
Algebra: Reasoning with and solving linear, quadratic, and exponential equations and linear inequalities	A.CED.1, A.CED.2, A.CED.3, A.REI.1, A.REI.2, A.REI.3, A.REI.4, A.REI.6, A.REI.10	How to solve linear equations and inequalities	Employ multiple strategies to solve equations and inequalities			
Algebra: Interpreting and using the structure of expressions to solve problems	A.SSE.1, A.SSE.1a, A.SSE.2, A.SSE.3	How to solve expressions	Analyze expressions' structure to choose the best method for solving it			
Algebra: Operating with algebraic expressions, including polynomials and rational expressions	A.APR.1, A.APR.6	How to interpret polynomials	Fluently add, subtract, and multiply polynomials			
Geometry: Applying similarity and congruence concepts to geometric figures, including triangles	G.SRT.5	How to determine congruent and similar triangles	Identify and prove similarities/congruencies in triangles			
Geometry: Using geometric models and volume formulas to solve measurement problems	G.CO.1, G.GMD.3, G.MG.2	How to solve shape measurement problems	Apply concepts of measurement and formulas to determine shape attributes			

Statistics and Probability: Summarizing, representing, and interpreting one- and two-variable data, including using frequency tables	S.ID.1, S.ID.3, S.ID.5, S.ID.7, S.ID.9	How to represent data in multiple ways	Display trends in data on the number line, dot plots, histograms, and box plots; interpret slope and intercept			
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