Georgia Department of Education

Georgia's K-12 Mathematics Standards New Comprehensive Overviews

(for each grade level and course, K-12)

IMPLEMENTATION BEGINNING 2023-2024 SCHOOL YEAR

Georgia Department of Education

Standards Explanation

(including description of standards/key competencies as clusters)

The grade level/course key competencies represent the standard expectation of learning for students in each grade level and course. The standards presented for each grade level and course represent the ultimate expectation for mastery at each grade level for each big idea. The standards are presented through a logical progression and provide detailed information as students work toward mastery of the key competencies/standards of the grade level/course. The standards are each followed by more detailed learning objectives that further explain the expectations for learning in the specific grade level/course standards. More details can be found in the Georgia's K-12 Mathematics Standards Explanation of Changes and Improvements document. Additionally, the K-12 Curriculum Maps provide teachers with instructional support and guidance on how the standards can be clustered to support deeper student learning.

Standards Structure, K-12

Georgia's K-12 Mathematics Standards

7TH Grade

NUMERICAL REASONING *– integers, percentages, fractions, decimal numbers*

7.NR.1: Solve relevant, mathematical problems, including multi-step problems, involving the four operations with rational numbers and quantities in any form (integers, percentages, fractions, and decimal numbers).

Expectations		Evidence of Student Learning (not all inclusive; see Grade Level Overview for more details)			
7.NR.1.1	Show that a number and its opposite have a sum of 0 (are additive inverses). Describe situations in which opposite quantities combine to make 0.	***Terminology*** • In the equation 3 + –3 = 0, 3 and –3 are additive inverses of each other.	***Example*** • Your bank account balance is – $25.00. You deposit $25.00 into your account. The new balance is $0.00.		
7.NR.1.2	Show and explain p + q as the number located a distance |q| from p, in the positive or negative direction, depending on whether q is positive or negative. Interpret sums of rational numbers by describing applicable situations.	***Strategies and Methods*** • Students should be able to add and subtract integers and other rational numbers presented within relevant, mathematical problems, using strategic thinking and a variety of tools.	***Example*** • 6 + (–4) is 4 units to the left of 6 on a horizontal number line or 4 units down from 6 on a vertical number line.		
7.NR.1.3	Represent addition and subtraction with rational numbers on a horizontal or a vertical number line diagram to solve authentic problems.	***Strategies and Methods*** • Students should represent a variety of types of rational numbers on a number line diagram presented both horizontally and vertically.			
7.NR.1.4	Show and explain subtraction of rational numbers as adding the additive inverse, p – q = p + (–q). Show that the distance between two rational numbers on the number line is the absolute value of their difference and apply this principle in contextual situations.	***Examples*** • Find the distance between a submarine submerged at a depth of $27\frac{3}{4}$ feet below sea level and an airplane flying at an altitude of $1262\frac{1}{2}$ feet above sea level. • $-\frac{1}{2} - (-2)$ is the same expression as $-\frac{1}{2} + -(-2)$, which is 2 units to the right of $-\frac{1}{2}$ on a horizontal number line or 2 units up from $-\frac{1}{2}$ on a vertical number line.			
7.NR.1.5	Apply properties of operations, including part-whole reasoning, as strategies to add and subtract rational numbers.	***Fundamentals*** • Students should be allowed to explore the signs of integers and what they really mean to discover integer rules.	***Strategies and Methods*** • Students should be able to use the Commutative and Associative properties to combine more than two rational numbers flexibly.	***Terminology*** • Part-whole reasoning refers to how numbers can be split into parts to add and subtract numbers more efficiently.	***Example*** • (–8) + 5 + (–2) may be solved as (–8) +(–2) + 5 to first make –10 by using the Commutative Property.

Big Idea – includes summary of concepts for grade level

Standard – grade level/course key competency; represents what students should ultimately master

Learning objectives/ expectations - "breaks down" the standard in an instructional progression

Evidence of Student Learning - instructional supports

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K-12 Learning Progressions

The K-12 Learning Progressions provide a visual progression of mathematics expectations within Georgia's K-12 Mathematics Standards. The progressions show the connection of concepts across all grade levels as students move from Kindergarten to high school. These progressions were developed for students, parents, and educators to make connections among key concepts in each instructional big idea.

The K-12 Learning Progressions can be found within each standards document, as well as in the document titled Georgia's K-12 Mathematics Standards: Learning Progressions.

Georgia's New K-12 Mathematics Standards Grade Level and Course Overviews

IMPLEMENTATION 2023-2024 SCHOOL YEAR

- K-12 Mathematical Practices
- K-12 Mathematical Modeling Framework
- K-12 Statistical Reasoning Framework
- Whole Child Supports for Learner Variability

ELEMENTARY (K-5)

- KINDERGARTEN
- FIRST GRADE
- SECOND GRADE
- THIRD GRADE
- FOURTH GRADE
- FIFTH GRADE

MIDDLE (6-8)

- SIXTH GRADE
- SEVENTH GRADE
- EIGHTH GRADE
- ENHANCED ALGEBRA: CONCEPTS & CONNECTIONS

HIGH (9-12)

- ALGEBRA: CONCEPTS & CONNECTIONS
- GEOMETRY: CONCEPTS & CONNECTIONS
- ADVANCED ALGEBRA: CONCEPTS & CONNECTIONS
- ENHANCED ADVANCED ALGEBRA & AP PRECALCULUS: CONCEPTS & CONNECTIONS
- HIGH SCHOOL FOURTH COURSE OPTIONS

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HIGH SCHOOL FOURTH COURSE OPTIONS

- ADVANCED FINANCIAL ALGEBRA
- ADVANCED MATHEMATICAL DECISION MAKING
- COLLEGE READINESS MATHEMATICS (CAPSTONE COURSE)
- MATHEMATICS OF INDUSTRY AND GOVERNMENT
- HISTORY OF MATHEMATICS
- ADVANCED FINITE MATHEMATICS
- PRECALCULUS
- STATISTICAL REASONING
- LINEAR ALGEBRA WITH COMPUTER SCIENCE APPLICATIONS
- ENGINEERING CALCULUS
- DIFFERENTIAL EQUATIONS
- CALCULUS
- AP CALCULUS AB
- AP CALCULUS BC
- AP STATISTICS
- MULTIVARIABLE CALCULUS
- INTERNATIONAL BACCALAUREATE

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SPECIALIZED SUPPORTS FOR STUDENTS

- Co-Requisite Support for Algebra: Concepts & Connections
- Co-Requisite Support for Geometry: Concepts & Connections
- Co-Requisite Support for Advanced Algebra: Concepts & Connections
- Supports for Learner Variability (K–12)
- Georgia Numeracy Project (K–HS)
- Foundations of Algebra *(*Middle or High School)*
- Technical College Readiness (ACCUPLACER® Prep Course)
- Supports for English Learners (K–12)

Preparing students

for life.

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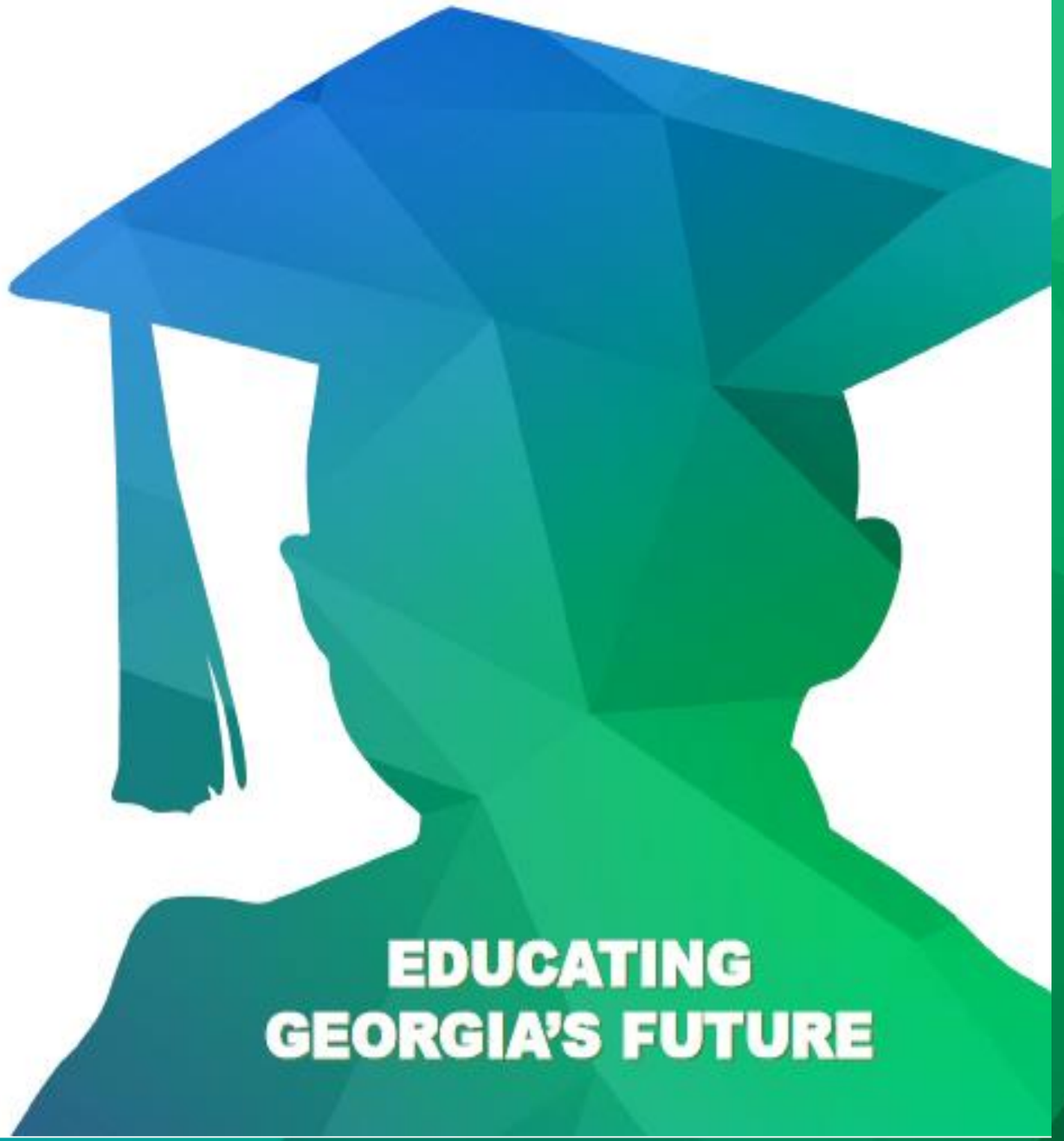

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