

A stylized silhouette of a student walking towards the right, carrying a backpack. The silhouette is composed of various shades of blue and green, with a gradient effect. The student is wearing a cap and a jacket.

Implementing Georgia's K-12 Mathematics Standards with Fidelity

GaDOE Mathematics Team

Session Outline

- Overview of Georgia's K-12 Mathematics Standards
- Exploration of the mathematics instructional resources



Georgia's Mathematics Standards

- Based on how the new content standards are written, there is a focus on **reasoning and contextual learning** in mathematics.
- **Mathematics in context** should be the focus of future instructional lessons and assessments used in classrooms.
- Lessons should allow for students to use mathematics to explain **real-life phenomena**

Promoting Positive Mathematical Mindsets

Positive mathematical mindsets are important for all mathematics classrooms. Providing students with learning tasks that promote productive student discourse, critical thinking, perseverance, and a growth mindset leads to healthy, deep learning at all levels. These types of tasks will also engage students in the [8 Mathematical Practices](#) that help learners develop positive thinking and discourse in all mathematics classrooms.

The following resources are intended to provide support with cultivating mathematics classrooms where positive mindsets thrive:

- [Positive Mathematical Mindsets Introduction](#)
- [Mathematics Classrooms that Cultivate Positive Growth Mindsets](#)
- [Positive Mathematical Mindsets - What to Look For](#)



Important Details

Communicate flexibility in strategy selection or approach to solving mathematical problems.

Promote the use of mathematical reasoning and sense-making through research-based, effective mathematics teaching practices in all grade levels and courses.

Make mathematics learning fun and engaging while helping learners see the connection between mathematics and real-life phenomena.

Standards Structure

Georgia's K-12 Mathematics Standards - 2021 Kindergarten

Big Idea and
summary of
concepts in this
section

Standard

**Evidence of
Student Learning**
– instructional
supports

Expectations
‘breaks down’
the standard in
an instructional
progression

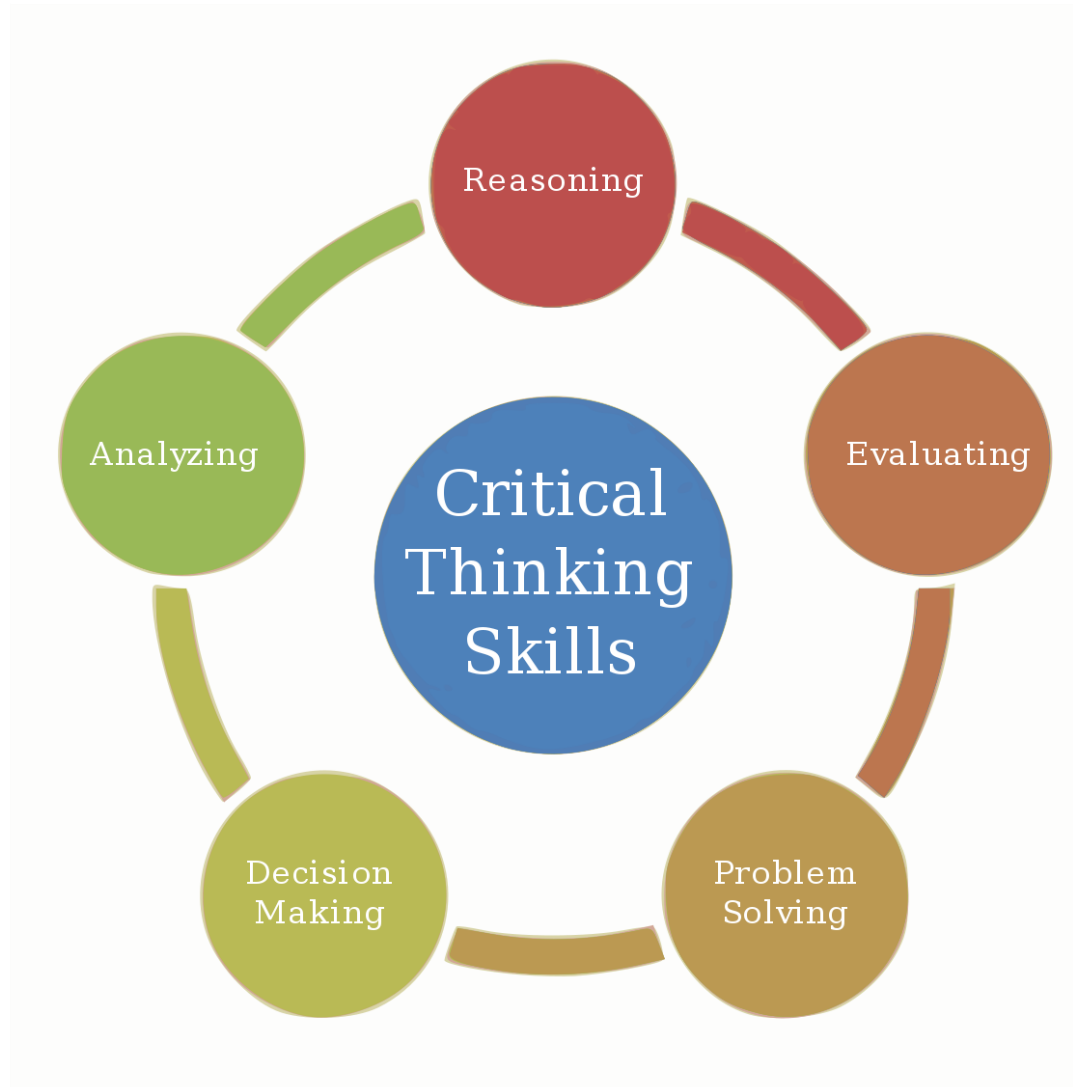
NUMERICAL REASONING – counting, money, place value, numbers to 20, addition, subtraction and fluency				
K.NR.1: Demonstrate and explain the relationship between numbers and quantities up to 20; connect counting to cardinality (the last number counted represents the total quantity in a set).				
Expectations		Evidence of Student Learning (not all inclusive; see Grade Level Overview for more details)		
K.NR.1.1	Count up to 20 objects in a variety of structured arrangements and up to 10 objects in a scattered arrangement.	Fundamentals <ul style="list-style-type: none"> This learning objective builds on the Pre-K Georgia Early Learning and Development Standard, CD-MA2.4b: Counts at least 10 objects using one-to-one correspondence. Students should count objects using one-to-one correspondence saying the number names in the standard order and communicate quantities for authentic purposes. “Authentic purposes” refers to experiences students have in their everyday lives. The overall goal is for students to be able to count up to 20 objects arranged in a line, a rectangle, or a circle, or up to 10 objects in a scattered arrangement. 	Relevance and Application <ul style="list-style-type: none"> Students should be able to count to answer “how many?” questions with up to 20 objects arranged in a variety of ways (a line, a rectangular array, or a circle), or up to 10 objects arranged in a scattered arrangement. 	Strategies and Methods <ul style="list-style-type: none"> Dot cards, five-frames, ten-frames, rekenreks, dominoes, beads, rocks, counting bears, and playing cards are some tools that can be used for subitizing.
K.NR.1.2	When counting objects, explain that the last number counted represents the total quantity in a set (cardinality), regardless of the arrangement and order.	Fundamentals <ul style="list-style-type: none"> This learning objective builds on the Pre-K Georgia Early Learning and Development Standards, CD-MA1.4e: Quickly recognizes and names how many items are in a set of up to four items. and CD-MA2.4e: With adult guidance and when counting, understands and can respond with the last number counted to represent quantity (cardinality). Students should know that the last number counted represents the total quantity in a set (cardinality), when counting objects regardless of the arrangement and order. Students should instantly see how many objects are in a group without counting (subitizing). 		Strategies and Methods <ul style="list-style-type: none"> Dot cards, five-frames, ten-frames, and rekenreks can be used for subitizing.
K.NR.1.3	Given a number from 1-20, identify the number that is one more or one less.	Fundamentals <ul style="list-style-type: none"> This learning objective builds on the Pre-K Georgia Early Learning and Development Standards, CD-MA1.4d: Describes sets as having more, less, same as/equal. and CD-MA1.4f: Tells numbers that come before and after a given number up to 10. Students should be able to understand that each successive number name refers to a quantity that is one larger and the previous number name is one less. 		
K.NR.1.4	Identify pennies, nickels, and dimes and know their name and value.	Fundamentals <ul style="list-style-type: none"> Students should be able to identify and represent coins by name and value. 	Strategies and Methods <ul style="list-style-type: none"> Students can use different types of coin manipulatives to extend their understanding of counting by ones. Coins manipulatives could be used for counting by ones. 	Age/Developmentally Appropriate <ul style="list-style-type: none"> Student is able to count five nickels. Students are not expected to find the value.

Georgia's K-12 Mathematics Standards

Mathematics Big Ideas and Learning Progressions, K-12

K	1	2	3	4	5	6	7	8	HS Algebra: Concepts & Connections	HS Geometry: Concepts & Connections	HS Advanced Algebra: Concepts & Connections
Mathematical Modeling (MM)											
Mathematical Practices (MP)											
Data & Statistical Reasoning (DSR)											
Numerical Reasoning (NR)											
Patterning & Algebraic Reasoning (PAR)											
Geometric & Spatial Reasoning (GSR)											
Measurement & Data Reasoning (MDR)											
								Functional & Graphical Reasoning (FGR)			
							Probability Reasoning (PR)			Probabilistic Reasoning (PR)	

Mathematical Reasoning



Georgia's K-12 Mathematics Standards are focused on Educating Georgia's Future by cultivating critical thinkers and problem solvers who can reason and make sense of the world around them.

Georgia's K-12 Mathematics Standards



Full Implementation 2023 - 2024

ESSENTIAL INSTRUCTIONAL GUIDANCE

- Mathematical Practices
- Mathematical Modeling
- Framework for Statistical Reasoning
- Computational Strategies for Whole Numbers

Overarching Mathematical Practice Standard (all grade levels and courses)

MP: Display **perseverance** and **patience** in problem-solving. Demonstrate skills and strategies needed to succeed in mathematics, including **critical thinking**, **reasoning**, and effective **collaboration and expression**. Seek help and **apply feedback**. Set and monitor **goals**.

Mathematical Modeling Framework (K-12)

MATHEMATICAL MODELING

Teaching students to model with mathematics is engaging, builds confidence and competence, and gives students the opportunity to collaborate and make sense of the world around them, the main reason for doing mathematics. For these reasons, mathematical modeling should be incorporated at every level of a student's education. This is important not only to develop a deep understanding of mathematics itself, but more importantly to give students the tools they need to make sense of the world around them. Students who engage in mathematical modeling will not only be prepared for their chosen career but will also learn to make informed daily life decisions based on data and the models they create.

The diagram below is a mathematical modeling framework depicting a cycle of how students can engage in mathematical modeling when solving a realistic problem or task.

A Mathematical Modeling Framework

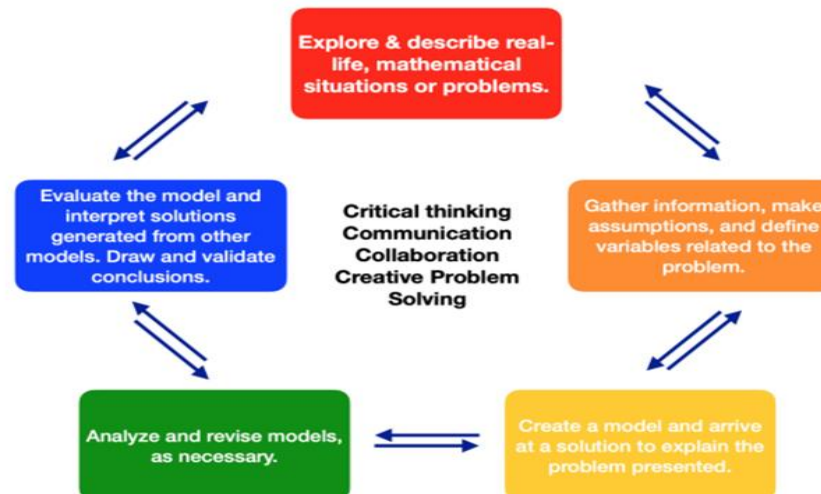



Image adapted from: Suh, Matson, Seshaiyer, 2017

Framework for Statistical Reasoning (K-12)

**GEORGIA'S K-12
MATHEMATICS STANDARDS**
Georgia Department of Education

FRAMEWORK FOR STATISTICAL REASONING

Statistical reasoning is important for learners to engage as citizens and professionals in a world that continues to change and evolve. Humans are naturally curious beings and statistics is a language that can be used to better answer questions about personal choices and/or make sense of naturally occurring phenomena. Statistics is a way to ask questions, explore, and make sense of the world around us.

The Framework for Statistical Reasoning should be used in all grade levels and courses to guide learners through the sense-making process, ultimately leading to the goal of statistical literacy in all grade levels and courses. Reasoning with statistics provides a context that necessitates the learning and application of a variety of mathematical concepts.

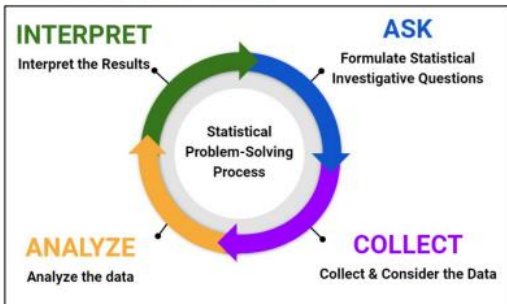


FIGURE 1: GEORGIA FRAMEWORK FOR STATISTICAL REASONING

The following four-step statistical problem-solving process can be used throughout each grade level and course to help learners develop a solid foundation in statistical reasoning and literacy:

- I. Formulate Statistical Investigative Questions**
Ask questions that anticipate variability.
- II. Collect & Consider the Data**
Ensure that data collection designs acknowledge variability.
- III. Analyze the Data**
Make sense of data and communicate what the data mean using pictures (graphs) and words. Give an accounting of variability, as appropriate.
- IV. Interpret the Results**
Answer statistical investigative questions based on the collected data.

Georgia's K-12 Mathematics Standards
August 2021

FRAMEWORK FOR STATISTICAL REASONING

Statistical reasoning is important for learners to engage as citizens and professionals in a world that continues to change and evolve. Humans are naturally curious beings and statistics is a language that can be used to better answer questions about personal choices and/or make sense of naturally occurring phenomena. Statistics is a part of our lives and is all around us.

The Framework for Statistical Reasoning guides learners through the sense-making process across grade levels and courses. Reasoning and application of a variety of mathem



FIGURE 1: GEORGIA FRAMEWORK FOR STATISTICAL REASONING

The following four-step statistical problem-solving process can be used throughout each grade level and course to help learners develop a solid foundation in statistical reasoning and literacy:

- I. Formulate Statistical Investigative Questions**
Ask questions that anticipate variability.
- II. Collect & Consider the Data**
Ensure that data collection designs acknowledge variability.
- III. Analyze the Data**
Make sense of data and communicate what the data mean using pictures (graphs) and words. Give an accounting of variability, as appropriate.
- IV. Interpret the Results**
Answer statistical investigative questions based on the collected data.

Georgia's K-12 Mathematics Standards
August 2021

2nd Grade: Create statistical investigative questions that can be answered using data. Collect, analyze, and interpret categorical data presented as picture graphs and bar graphs (with single-unit scales) with **up to four categories** from real situations to answer questions.

Ask	Collect	Analyze	Interpret
Create a statistical question.	Determine strategies to collect data.	Create a picture graph and a line graph.	Interpret categorical data to answer the statistical investigative question created.
<p>over them based on observations, and displays to solve everyday life.</p>			<p>the current expectation and real events. in the classroom.</p> <p>illy marks can be used to organize data. four categories.</p> <p>phs, bar graphs, and tally charts.</p> <p>ered using data. Collect, the number values obtained</p>
			<p>Interpret</p> <p>Interpret categorical and numerical data to answer the statistical investigative question created.</p>
	answer a statistical investigative question.	graphical display.	

Instructional Supports

- Expectations in this grade level should be taught throughout the year and applied contextually to the current expectation and actual life events.
- In previous grade levels, students analyzed categorical data. In third grade, this is extended to include numerical data analysis.
- Students should formulate a statistical investigative question to explore a real situation in their classroom.
- Students should be provided with learning experiences to collect and analyze both numerical data and categorical data.
- Some problems should include reading bar graphs, pictographs, and dot plots, as well as customary measurements. Dot plots and line plots can be used interchangeably. Dot plots should be used for numerical data representation on a number line.
- Developing strategies for collecting data include students collaborating to determine ways to collect data. Data can be gathered from a variety of sources to answer the statistical investigative question posed. Data sets for categorical data may include several categories.
- The scales of the pictographs, bar graphs, and dot plots should depend on the data collected. On a pictograph, one symbol may stand for a value greater than 1 to allow students to apply their understanding of single digit multiplication and division facts.
- Students should use a ruler that is marked at halves and fourths only to create an evenly spaced number line for the dot plot.
- *Numerical data* - data that can be expressed in numbers rather than natural language. An example of numerical data that could be collected is the number of people who attended the movie theater over the course of a month.
- *Categorical data* - a type of data used to group information with similar characteristics. Examples of categorical data that could be collected might be marital status, favorite sport, or favorite type of movie.

Instructional Resources

The following resources are available for all grade levels and courses aligned to Georgia's K-12 Mathematics Standards:

- Curriculum Maps
- Comprehensive Grade-Level or Course Overviews
- Interactive Instructional Unit Frameworks
- Digital Learning Plans
- Professional Learning Videos
- Newly Aligned State Assessments

Georgia's New K-12 Mathematics Standards Curriculum Maps

IMPLEMENTATION 2023-2024 SCHOOL YEAR



Georgia Mathematics Course Overviews



Georgia's K-12 Mathematics Standards New Comprehensive Overviews *(for each grade level and course, K-12)*

IMPLEMENTATION BEGINNING 2023-2024 SCHOOL YEAR



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

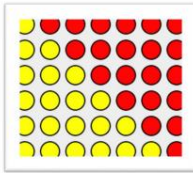
ENHANCED ADVANCED
ALGEBRA & PRECALCULUS:
CONCEPTS & CONNECTIONS

HIGH SCHOOL
FOURTH COURSE OPTIONS

Grade 7

Unit 1: Making Relevant Connections within the Number System

Students will build upon understandings of rational numbers to ultimately formalize rules for basic arithmetic operations (addition, subtraction, multiplication, and division) with rational numbers.



MATHEMATICS



THIS WORK IS LICENSED UNDER A CREATIVE COMMONS ATTRIBUTION - NONCOMMERCIAL - SHAREALIKE 4.0 INTERNATIONAL LICENSE
Georgia Department of Education Page 1 of 29 July 2023

GRADE 5

Unit 1: Investigating Volume of Solid Figures

Students will write expressions to represent volume and solve problems in a variety of contexts.



MATHEMATICS



THIS WORK IS LICENSED UNDER A CREATIVE COMMONS ATTRIBUTION - NONCOMMERCIAL - SHAREALIKE 4.0 INTERNATIONAL LICENSE
Georgia Department of Education Page 1 of 26 July 2023

**New Instructional
Units**

**AVAILABLE NOW
in INSPIRE
At NO COST to GA
Educators**

Engage

Real World Hook/ Introduction

How will you engage the students?

What is the real world “hook” that will intrigue their interest?

Explore

Student Engagement through Process Based Thinking

What will students be asked to do in each step of process-based thinking? What will students write and/or draw in journals for each step?

How will students connect new information to what they already know?

In what ways will the student engagement allow for open-ended exploration and inquiry?

Instructional Design

Apply

Student Presentation

How will students share their findings?

What form of presentation will they use?


Which community partners might provide feedback?

Reflect

Student Reflection

How will students summarize their efforts in this unit and pose questions that will lead to the next one?


Culminating Capstone Unit:

Georgia Department of Education

Educating Georgia's Future

K-12 Mathematics Capstone Project Information

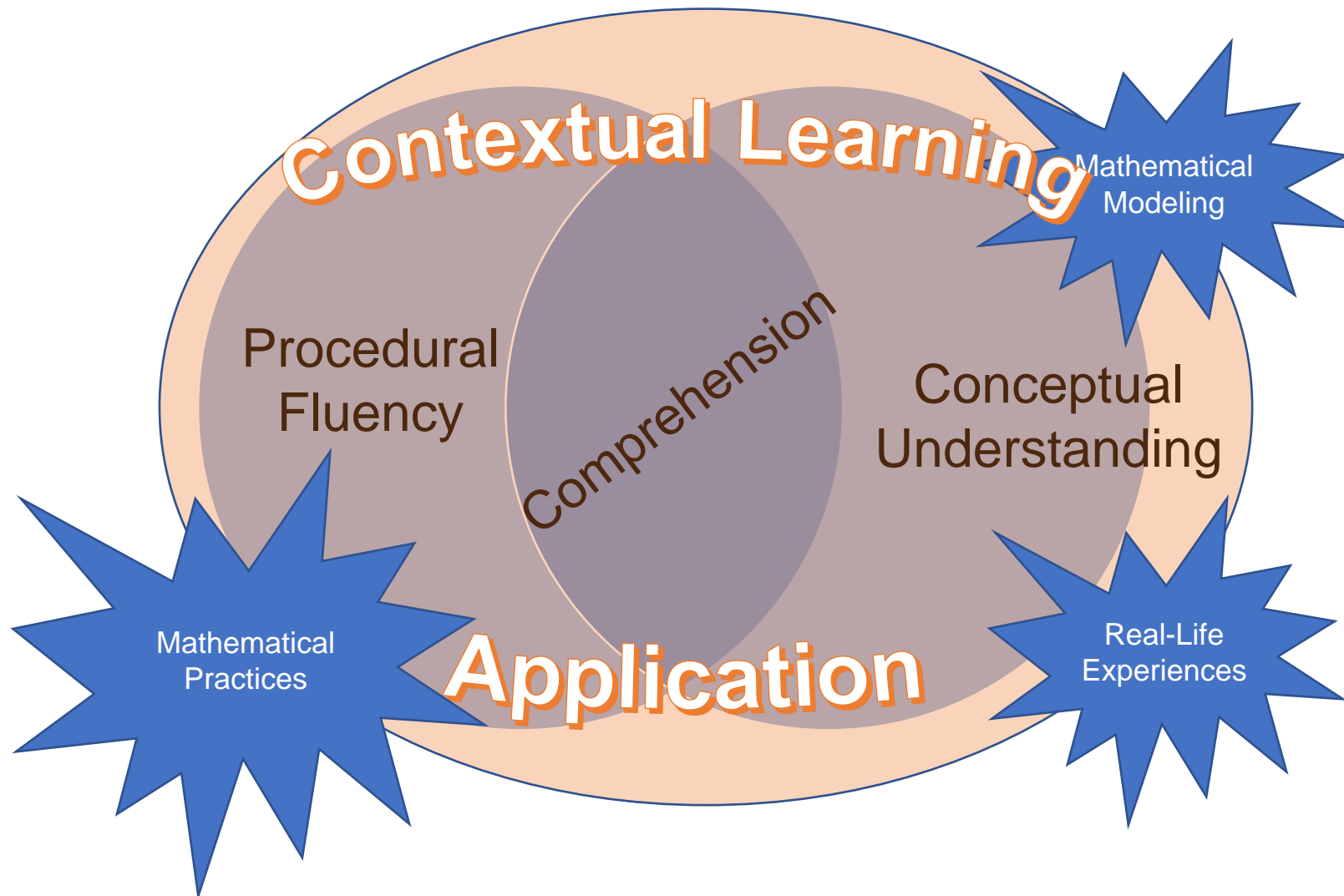
GRADE 4



MATHEMATICS

The Capstone Experience in mathematics is a culminating activity for the year designed to integrate and reflect upon the overall mathematics learning for the grade level. Students present their findings, share their models, and explore the mathematics content previously learned. They also make connections by tying together all of the learning that happened throughout the year.

Mathematics Makes Sense in Context!



Interdisciplinary Connections for All Units in all grade levels and courses

- Aligned to workforce needs (based on industry input)
- Incorporates employability skills and workforce readiness indicators at all grade levels
- Provides innovative inspiration for interdisciplinary teaching and learning with multiple content areas and disciplines

GEORGIA'S K-12 MATHEMATICS STANDARDS INTERDISCIPLINARY CONNECTIONS PLANNING TOOL EIGHTH GRADE

DRIVING QUESTION/ STATEMENT OF THE PROBLEM (REAL-LIFE PHENOMENA): How can we explore Real-Life Phenomena Through Systems of Linear Equations?		
COMPUTER SCIENCE CONTENT & CONNECTIONS	ENGLISH/ LANGUAGE ARTS CONTENT & CONNECTIONS	SCIENCE CONTENT & CONNECTIONS
<p>Possible connections:</p> <ul style="list-style-type: none"> Develop through application, logical observations relative to computational thinking procedures to analyze and solve problems current to everyday life. Understand and use the basic steps in algorithmic problem solving in computing and other authentic applications. 	<p>Possible connections:</p> <ul style="list-style-type: none"> Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content. Have students research and answer the following question: What is the impact of bringing walking, speed walking, jogging, or running into an individual exercise program on a regular basis in relation to their overall health? 	<p>Possible connections:</p> <ul style="list-style-type: none"> Obtain, evaluate, and communicate information about cause and effect relationships between force, mass, and the motion of objects. Analyze and interpret data to identify patterns in the relationships between speed and distance, and velocity and acceleration.
MATHEMATICS CONTENT & CONNECTIONS		
<p>Unit 4 Real-Life Phenomena Explored Through Systems of Linear Equations 8.FGR.7 8.MP.1-8</p> <p>In this unit, students will extend their understanding of solving equations and functional and graphical reasoning to solving systems of equations, including those created by parallel and/or perpendicular lines. Solving systems should include estimating solutions graphically, solving using substitution, and solving using elimination.</p>		
SOCIAL STUDIES CONTENT & CONNECTIONS	PHYSICAL EDUCATION CONTENT & CONNECTIONS	CTAE & WORKFORCE READINESS CONTENT & CONNECTIONS
<p>Possible connections:</p> <ul style="list-style-type: none"> Interpret timelines, charts, and tables. Identify and use primary and secondary sources. 	<p>Possible connections:</p> <ul style="list-style-type: none"> The physically educated student applies the knowledge of concepts, principles, strategies, and tactics related to movement and performance. The physically educated student demonstrates competency in a variety of motor skills and movement patterns. 	<p>Possible connections:</p> <ul style="list-style-type: none"> Use appropriate technology to collect, record, manipulate, analyze, and report data. Demonstrate the ability to recognize cause and effect when faced with projects or issues. Healthcare Science Human Services- Nutritionist <p>The interdisciplinary workforce goal is for students to explore and start to make connections to the world of work through career exploration.</p>

Customized for
School Community
and Needs

Interdisciplinary
approaches to
teaching and
learning

All content areas connected
to the mathematics
standards to provide
inspiration for teachers to
implement interdisciplinary
instruction.

Strong
connections with
mathematical
modeling

Interdisciplinary Challenges

MATHEMATICS INTERDISCIPLINARY CONNECTIONS

Unit 1

Making Relevant Connections with Place Value Understanding, Addition and Subtraction of Whole Numbers

4.NR.1, 4.NR.2, 4.MDR.6, 4.MP.1-8

Previously, students worked within 10,000 for place value, addition, and subtraction. In this unit students will be building on this understanding to add, subtract, and round numbers within 100,000. This unit also incorporates problem solving with money, intervals of time, and metric measurements for liquid volume, distance, and weight. Students will engage in the framework for statistical reasoning to ask and answer questions in order to solve problems.

Interdisciplinary Challenge: Buying Time

Students will explore the relationship between time, money, and weather. Many factors impact our daily lives in multiple manners. But three variables that may have a tremendous amount of impact on our lives can be traced back to time, money, and the ever changing weather. Industry depends on their products to be delivered on time, under budget, and without the impact of weather delaying shipments. If one of these three factors are not in balance with the other two, companies are going to be impacted adversely. Leaders of large corporations and companies depend on teams of people to make sure products are created, shipped, and delivered on time daily and without weather delaying shipping trips. In the instance of bad weather, alternate plans can be made.

The same principle can be shared with students and the impact of weather, time, and money impacting their daily lives. This unit's question is "Does weather impact students and their ability to sleep and make money based on their time of rest?"

The industry product here is each student and their amount (time) and quality of sleep based on the nightly weather. Students will figure out exactly how much time would be gained by waking up at 6:15 am rather than 7 am for five school days. Students have been told by their parents that they can earn \$2 if it is an even number of minutes or \$3 if it is an odd number of minutes by waking up earlier. Students calculate how much they can earn in a day and a week with their new allowance by waking up earlier. Students will also chart their amount of sleep and the weather for 10 days to gather the data needed to answer the following questions:

- Does the change in weather impact the quality of your sleep?
- Does weather impact your sleep patterns?

Students will need to write a persuasive paper on their sleep patterns based on the nightly weather, and if they are able to function daily in school and if they are able to make money by getting more sleep.

INDUSTRY INTERDISCIPLINARY CONNECTIONS

These suggested industry connections could be great places for you to go for guest speakers, industry visits, and class presentations or activities. This connection would also be a great opportunity for industry partners to collaborate during teacher planning for this unit activity. If industry partners are not available, please reach out to your local high school and their Career, Technical and Agriculture Education (CTAE) programs for high school students to visit and present to students. Relate the Buying Time Interdisciplinary Challenge to but not limited to:

- Business, Management and Administration- Health Information Technology
- Manufacturing
- Transportation, Distribution and Logistics
- Health Science

Each industry can relate with students some of the objects they work with on a daily basis in their careers. Industry partners can bring some of these items to share with students in the class demonstrations. Students can then categorize each item accordingly, ask questions about the items and related pieces, and then discover more about possible careers in each industry. Career Discovery will be the primary component of this connection and presentation to fourth graders.

THIS WORK IS LICENSED UNDER A CREATIVE COMMONS ATTRIBUTION – NONCOMMERCIAL – SHAREALIKE 4.0 INTERNATIONAL LICENSE

© 2023 Georgia Department of Education
All Rights Reserved
Page 2 of 2

Model PBL

Constructive and Destructive Processes

Grade 5 Unit 6

Develop simple interactive models to collect data.



Interdisciplinary Investigative Research Task

King-Sized Candy Bars

How can we use knowledge of polynomial operations to construct candy packaging from stock material that maximizes the volume?



Interdisciplinary Investigative Research Task

Probability on the Farm

Students will develop probability models that allow them to predict the possible outcomes of crosses in a selective breeding program.

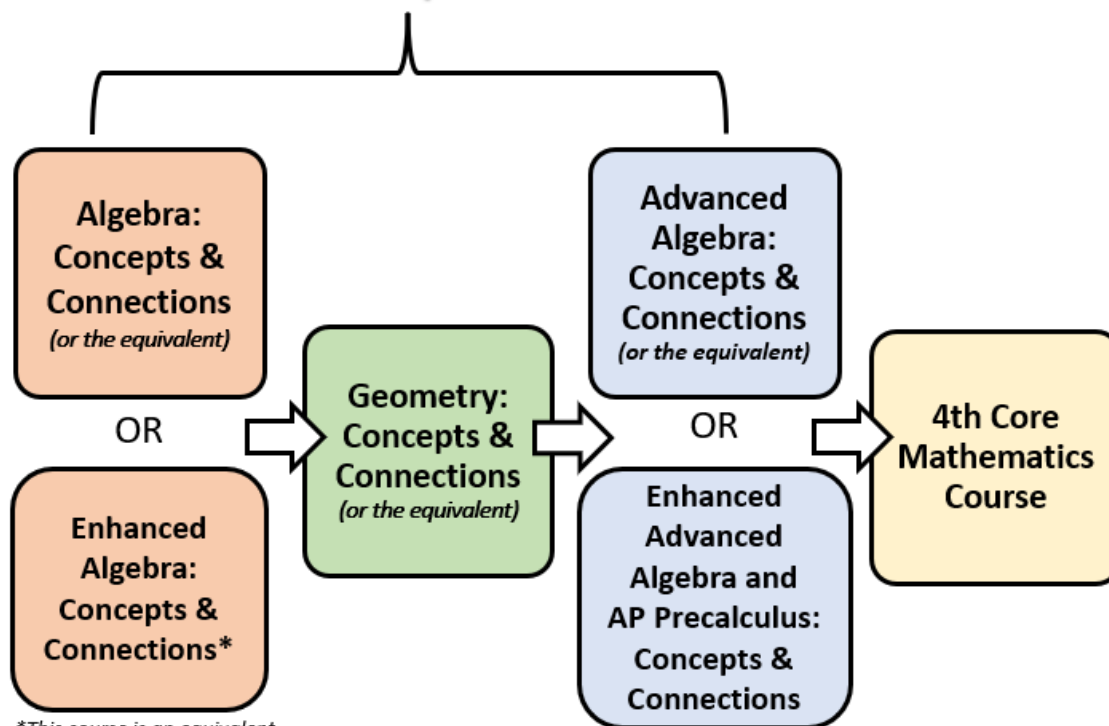


Personalized Mathematics Pathways: Opportunities for ALL Georgia Students

- Open access for all pathways for all students
- Prepares students for any path they choose aligned with their unique college and career goals
- Includes secondary courses for support and enhancement
- Multiple on-ramps and off-ramps for learners participating in the accelerated pathway

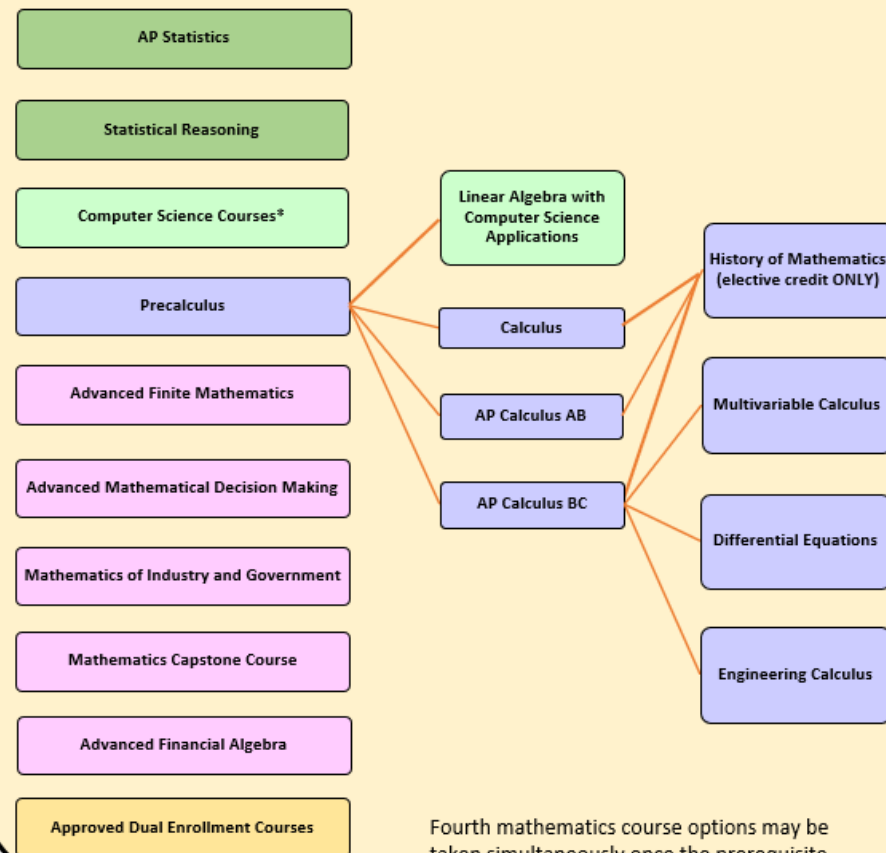
Mathematics Graduation Requirements for High School

First Three Required Courses



**This course is an equivalent course to high school Algebra: Concepts and Connections for eligible Grade 8 students.*

4th Mathematics Course Options



Fourth mathematics course options may be taken simultaneously once the prerequisite for each course is satisfied.

- Multiple choices for 4th core mathematics courses
- Co-Requisite Support courses offered, as needed.

Georgia Department of Education
All Rights Reserved

Additional Pathways for Students interested in Advanced Calculus Options in High School

Middle and High School Course-Taking Sequences and Pathways for All Students

Open Access for ANY interested student

NOTE:
Local Districts have the flexibility to create additional pathways that support student success based on the needs in their individual districts.

Personalized, Student-Centered Decision Points

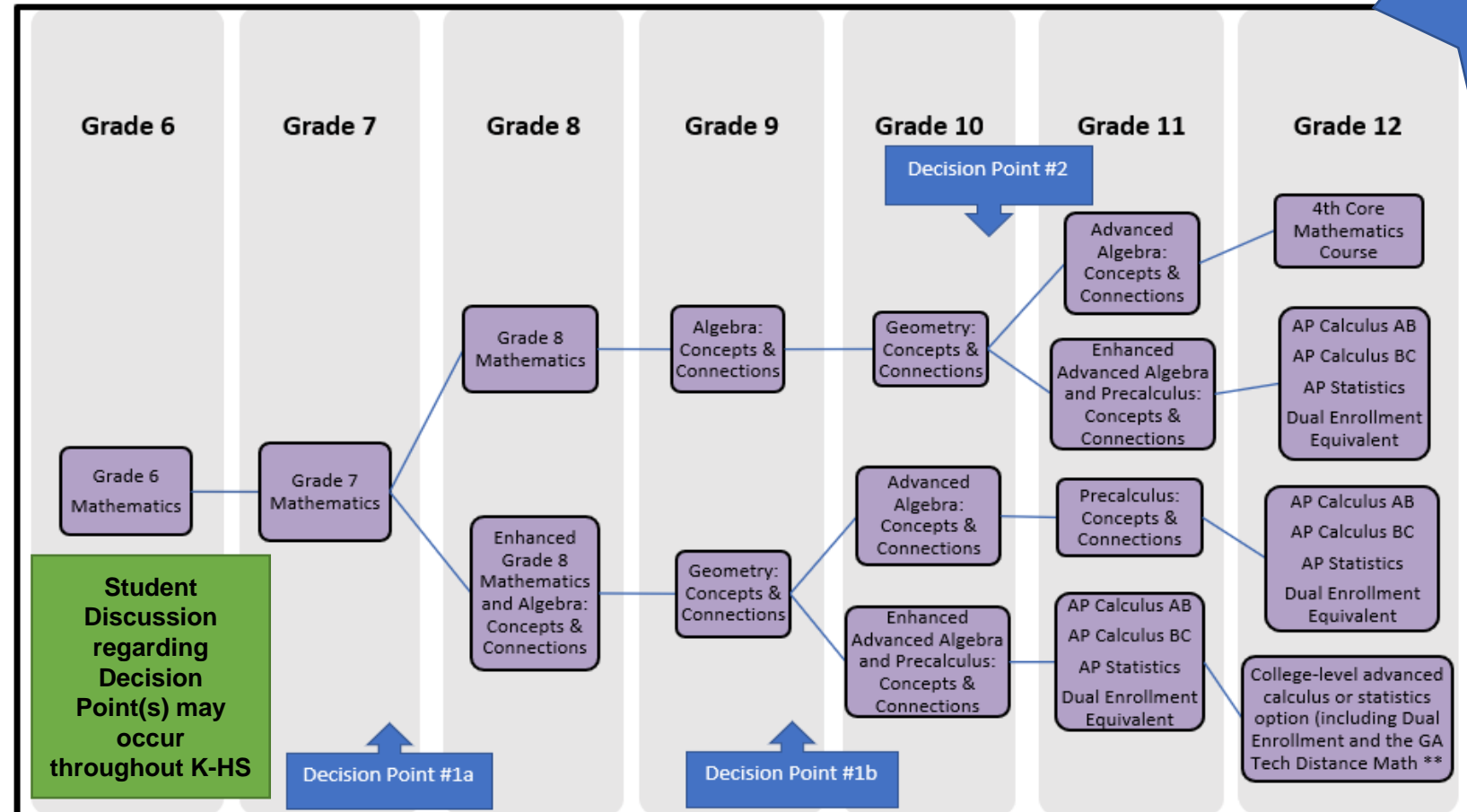


Figure 3. Mathematics Pathways to Graduation

**AP Calculus BC is required for the Georgia Tech Distance Mathematics Program



Quality Assurance Instructional Resources Rubric



Georgia's K-12 Mathematics Standards Mathematics Instructional Materials Quality Assurance Rubric

Focus	4 Fully Aligned	2 Minimally Aligned	0 Not aligned
Alignment	The resource is in direct alignment to key competencies/ overarching standards for the grade level. The resource is also directly aligned to the Essential Instructional Guidance components included within the standards. The information and tools within the resource connect to the GaDOE resources through a cluster-based approach to the key competencies/ standards and learning objectives.	The resource shows alignment with the mathematics learning objectives with limited alignment to the key competencies/overarching standard. OR The resource shows limited alignment to the Essential Instructional Guidance components of the standards.	The resource is not aligned with all components of Georgia's K-12 Mathematics Standards, including the Essential Instructional Guidance.
Instruction through a lens of Mathematical Modeling	Interdisciplinary learning tasks are provided in this resource to help students learn the mathematics through real-life contexts and phenomena.	Real-world problems and word problems are included in the resource with limited emphasis on process-based thinking through the use of the Mathematical Modeling Framework.	There is no evidence that this resource has a focus on teaching mathematics through relevant situations.
Student Actions	The tasks and learning resources included in this resource are student-centered and regularly engage students in creative and patient problem-solving provoking thought leading to understanding. The resource includes lessons and activities that regularly engage students in productive discourse and collaboration when learning mathematics. The materials in the resource help students build a positive attitude toward and an appreciation for mathematics through engaging, student-centered classroom tasks and lessons.	The resource is student-centered with some activities that involve students in the student actions that lead to understanding; however, there are some lessons that limit student thinking and ownership.	The resource is largely teacher-centered with limited or no guidance on how to create environments that promote student thinking and sense-making.
Mathematical Practices	The tasks, activities, and lessons included in the resource help bring to life the 8 Mathematical Practices. There is direct alignment to multiple mathematical practices in each lesson.	The tasks, activities, and lessons included in the resource are aligned to the 8 Mathematical Practices at a surface level. There is indicated alignment to one or two mathematical practices in some lessons.	There is no attempted alignment with the 8 Mathematical Practices. The tasks, activities, and lessons included in the resource are not aligned to any mathematical practice.
Student Supports for Learner Variability	The resource supports students' prior knowledge by building upon the previous skills maintained and providing the necessary scaffolds of support to access the new content. The resource includes embedded tiered supports for all lessons.	The resource includes some supports for learner variability, but these supports are not tiered to benefit all learners.	The resource does not include targeted, specific supports for learner variability embedded within the lessons.
Mathematical Reasoning and Sense-Making	The concepts presented in the resource are not overly procedural and encourage higher-order thinking and mathematical modeling through the instructional lessons outlined. All lessons include a focus on mathematical reasoning and sense-making.	Some concepts presented foster a focus on answer-getting in isolation of reasoning and sense-making	The concepts presented in the resource focus on procedures and answer-getting in isolation of comprehension and understanding.
Flexibility in Strategy Selection and Problem Solving	<ul style="list-style-type: none">The resource is developed to promote student-centered teaching and learning of mathematics based on the tasks and activities included.The tasks and activities encourage students to use their own reasoning flexibly allowing choice in their strategy selection and problem-solving methods.	The tasks and activities limit student voice and choice in the selection of strategies and problem-solving methods.	The tasks and activities are teacher-centered and include limited to no involvement from students with regards to computation and problem-solving.

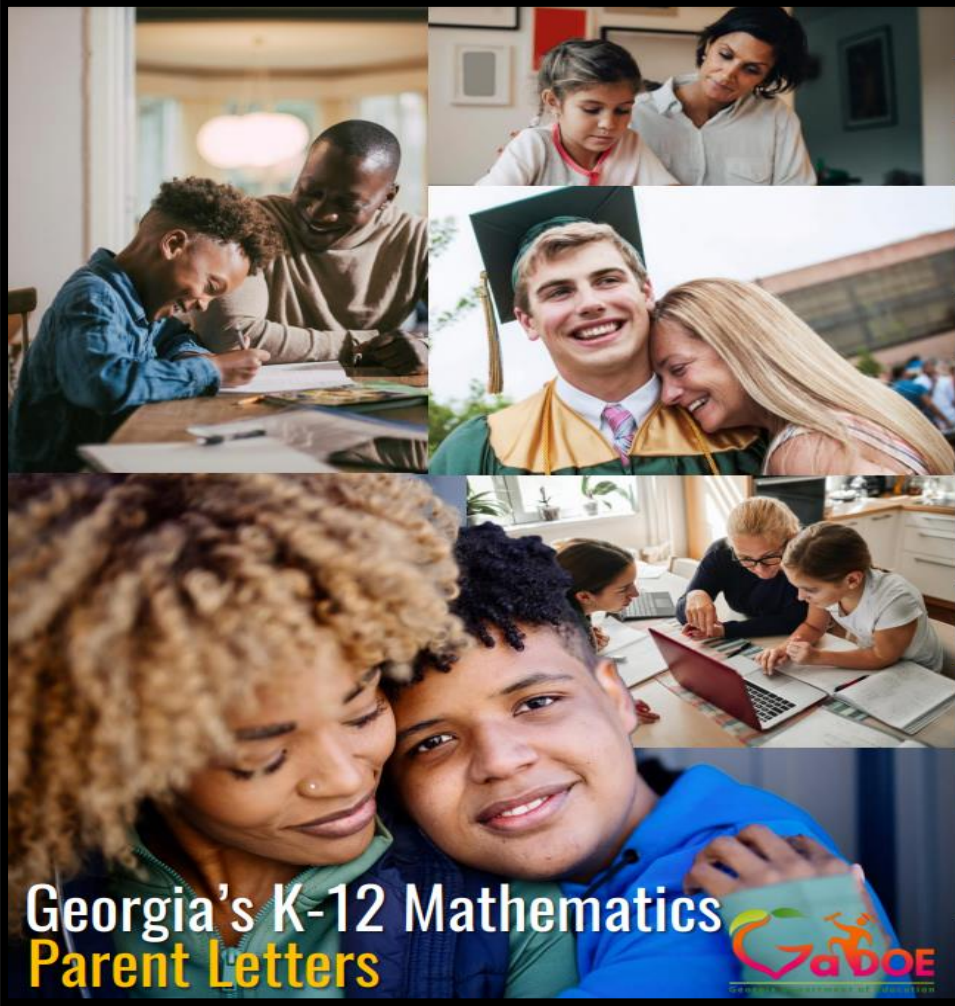
©2023 Georgia Department of Education
All Rights Reserved

1






K-12 Mathematics Parent Letters



Georgia's K-12 Mathematics
Parent Letters



KINDERGARTEN	
1 ST GRADE	
2 ND GRADE	
3 RD GRADE	
4 TH GRADE	
5 TH GRADE	
6 TH GRADE	
7 TH GRADE	
8 TH GRADE	ENHANCED ALGEBRA: CONCEPTS & CONNECTIONS
ALGEBRA: CONCEPTS & CONNECTIONS	
GEOMETRY: CONCEPTS & CONNECTIONS	
ADVANCED ALGEBRA: CONCEPTS & CONNECTIONS	ENHANCED ADVANCED ALGEBRA & AP PRECALCULUS: CONCEPTS & CONNECTIONS
HIGH SCHOOL 4 TH COURSE OPTIONS	



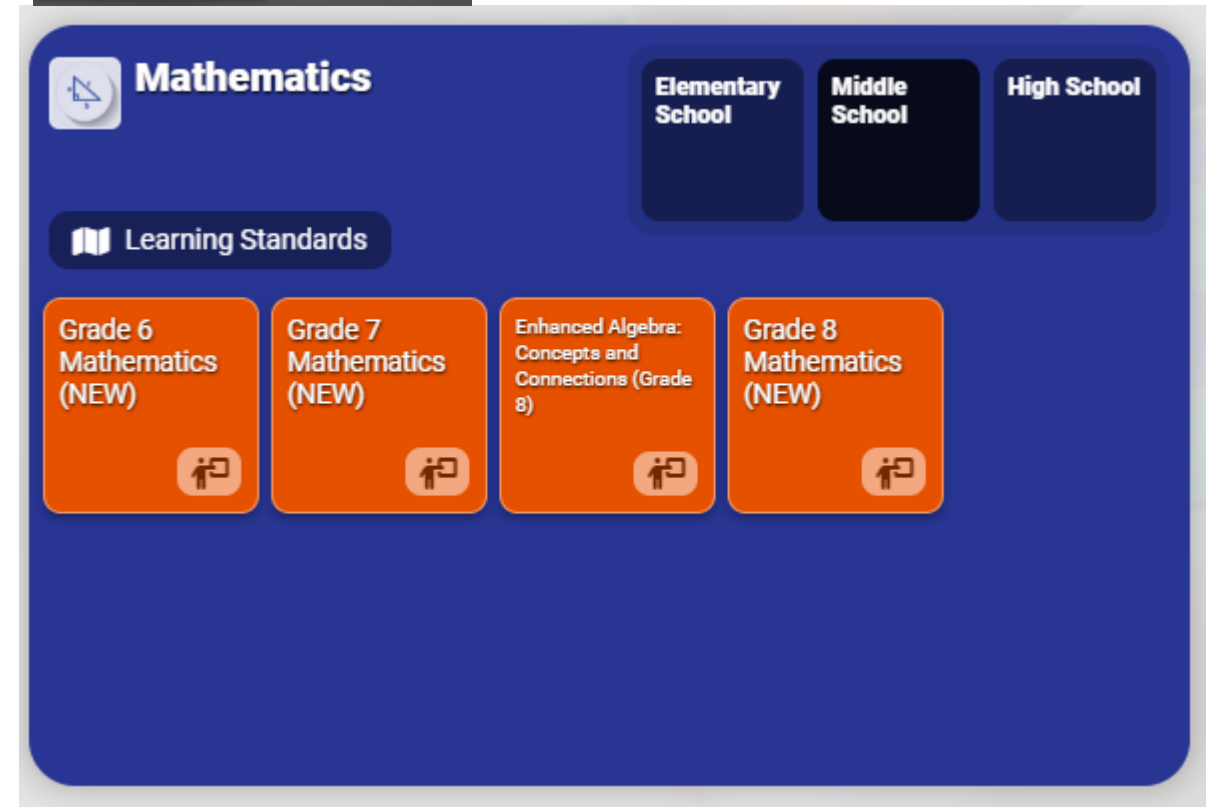
Georgia Standards



[Georgia's K-12 Mathematics Standards](https://georgiastandards.org)
 [\(georgiastandards.org\)](https://georgiastandards.org)



inspire.gadoe.org



BINGO!

Visit

inspire.gadoe.org

to complete the
bingo game!

Implementing Georgia's K-12 Mathematics Standards with Fidelity

B	I	N	G	O
Find one interdisciplinary challenge aligned to Unit 1 for any grade level or course of your choice	Find the peer feedback rubric embedded within the Culminating Capstone Unit	Find the Comprehensive Course Overview for one grade level or course	Find one Student Reproducible for your favorite learning plan	Find the pacing guide for any grade level or course
Find one example of how to collaborate with industry and workforce professionals	Find a Diagnostic Assessment for any learning plan of your choice	Find the Culminating Capstone Unit for a grade level of choice	Find the connection to the CTAE Employability Standard	Find the Georgia Early Numeracy Project GloSS Assessment
Choose any grade level and course and find the Intervention Table for Unit 1	Find the Georgia Early Numeracy Project IKAN Assessment	I ❤️ MATH	Find one idea for engaging families in the student's learning	Find the Framework for Statistical Reasoning
Find an Evidence of Student Success for one learning plan	Find the Mathematical Modeling Framework	Find the Georgia Secondary Numeracy Project Diagnostic Assessment	Find the Parent Letter for one grade level or course	Find one language support for a learning plan in Unit 1
Find the Georgia Numeracy Project Tasks and Activities	Find the Mathematical Practice Standard within one grade level	Find an investigative PBL for any grade level or course of your choice	Find the academic vocabulary embedded in any unit	Find one idea for differentiation for any learning plan



Let's Talk Math, GA!

MONTHLY PROFESSIONAL LEARNING SESSIONS FOR DISTRICT MATHEMATICS SPECIALISTS

The Georgia Department of Education Mathematics Team invites mathematics leaders throughout the state to join a virtual professional learning series. These monthly sessions began on January 30, 2023, and continued on the third Friday of each subsequent month. Important updates will be provided monthly to support district leaders with the implementation of Georgia's K-12 Mathematics Standards.

August 25, 2023 (Session 8)
September 22, 2023 (Session 9)
October 20, 2023 (Session 10)
November 17, 2023 (Session 11)
December 15, 2023 (Session 12)

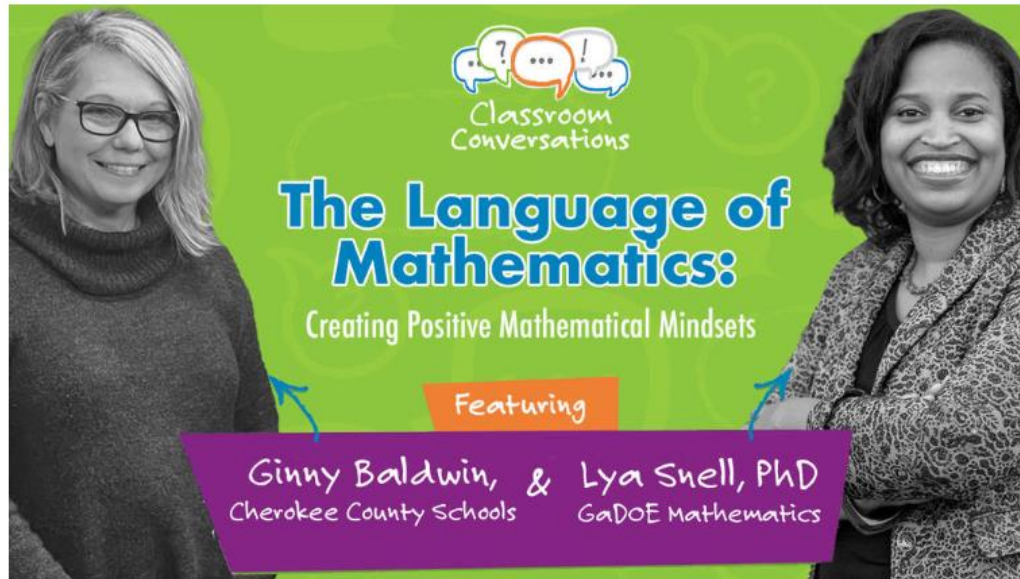
1:00 PM – 2:00 PM
Monthly Virtual Sessions

Register online to receive additional information and details.
[Click HERE to Register!](https://community.gadoe.org)
community.gadoe.org



Classroom Conversations

NEW
PODCASTS



<https://www.gpb.org/blogs/classroom-conversations/2023/07/10/episode-317-the-language-of-mathematics-creating-positive>



<https://www.gpb.org/blogs/classroom-conversations/2023/07/10/episode-318-flexibility-in-problem-solving-making>

GaDOE Community



For more information visit
[GaDOE Community Website](#)



GaDOE Community provides:

- **GaDOE Professional Learning Catalog** – recorded and on-demand options; both virtual and in person
- GaDOE hosted collaborative groups – **Virtual Specialists**

GaDOE Mathematics Team Members



Lya Snell, Ph.D.
Mathematics & Computer
Science Program Manager
lsnell@doe.k12.ga.us



Karla Cwetna, Ph.D.
Secondary Mathematics
Program Specialist
kcwetna@doe.k12.ga.us



Kenneth Golden
Secondary Mathematics
Program Specialist
kenneth.golden@doe.k12.ga.us

**YOUR GADOE MATHEMATICS
TEAM IS HERE TO SERVE YOU!**



Follow us:
@GaDOEMath

Important Websites

Georgia Mathematics
Program Updates:

www.gadoe.org/mathematics

Professional Learning
Communities:



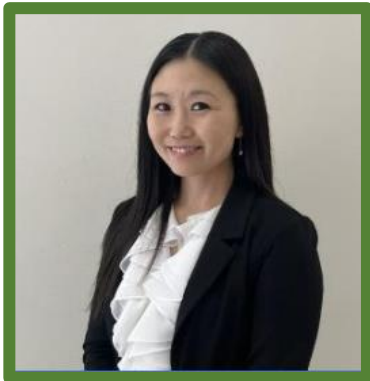
<https://community.gadoe.org>

Curriculum Resources:

www.georgiastandards.org

Professional Learning
Conferences:

www.gadoe.org/mathcon



Ye Na Parrett
Mathematics & ESOL
Program Specialist
yena.parrett@doe.k12.ga.us



Jenise Sexton
Mathematics Content
Integration Specialist
jsexton@doe.k12.ga.us



Denise Castleberry
Mathematics Interdisciplinary
Content Specialist
felicia.castleberry@doe.k12.ga.us



Jacqueline Hennings
Mathematics Interdisciplinary
Content Specialist
jacqueline.hennings@doe.k12.ga.us

Thank You for Your Commitment to Georgia's Learners!

