

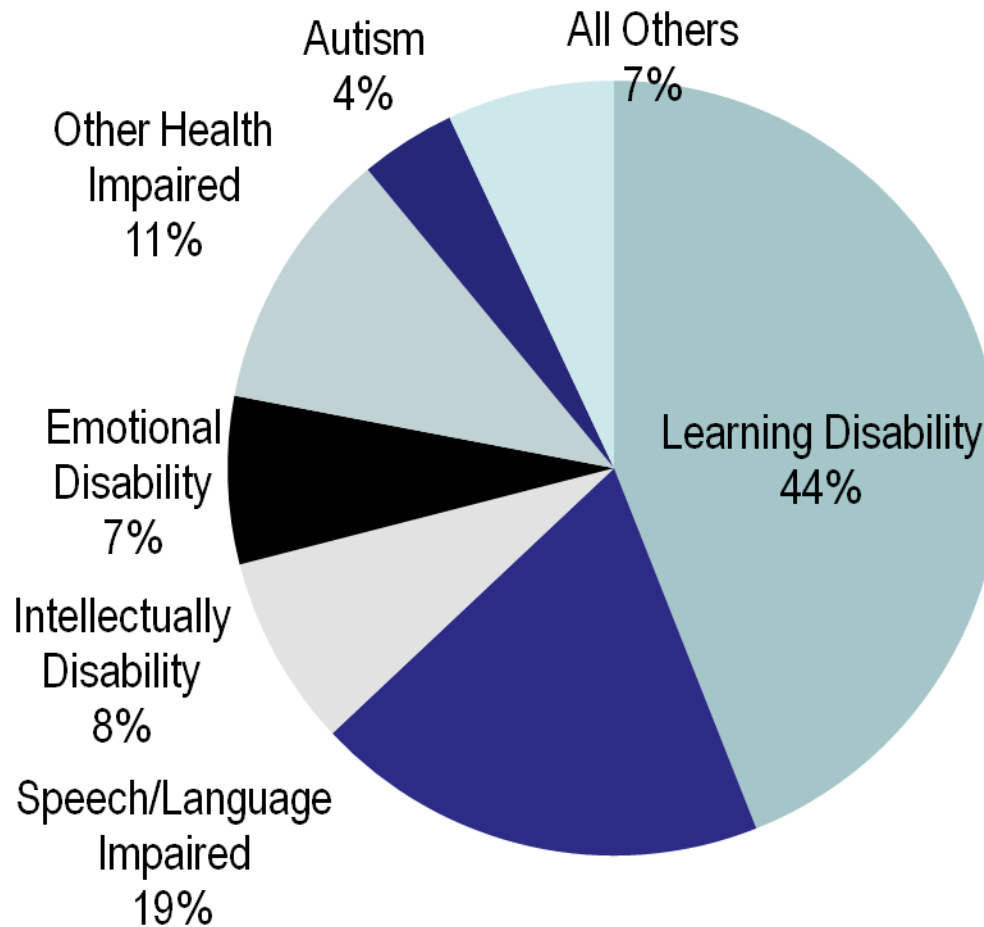


# Building Blocks of Mathematics: Remember to see it from their perspective.

**Georgia Department of Education**  
**Divisions for Special Education Services and Supports**  
**1870 Twin Towers East**  
**Atlanta, Georgia 30334**

*"We will lead the nation in improving student achievement."*

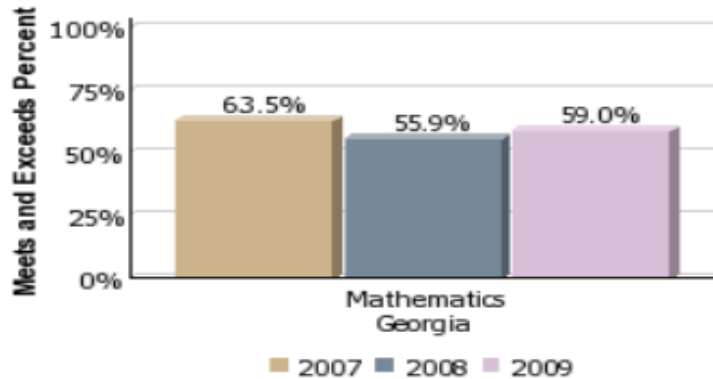
# Georgia Special Education Students by Disability Category



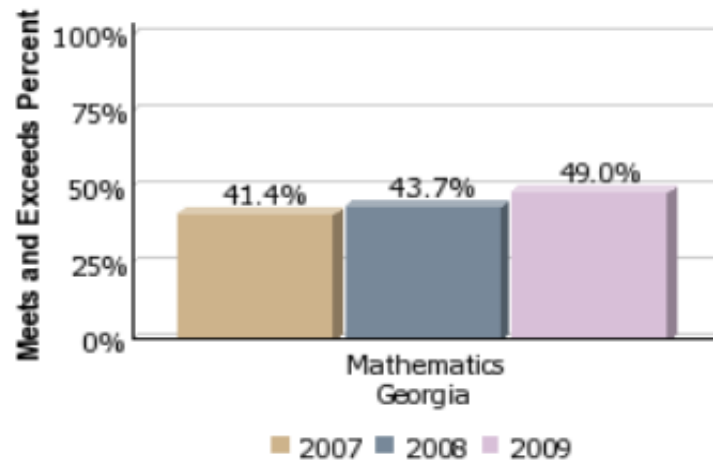
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# CRCT - Mathematics

Grades 1-5

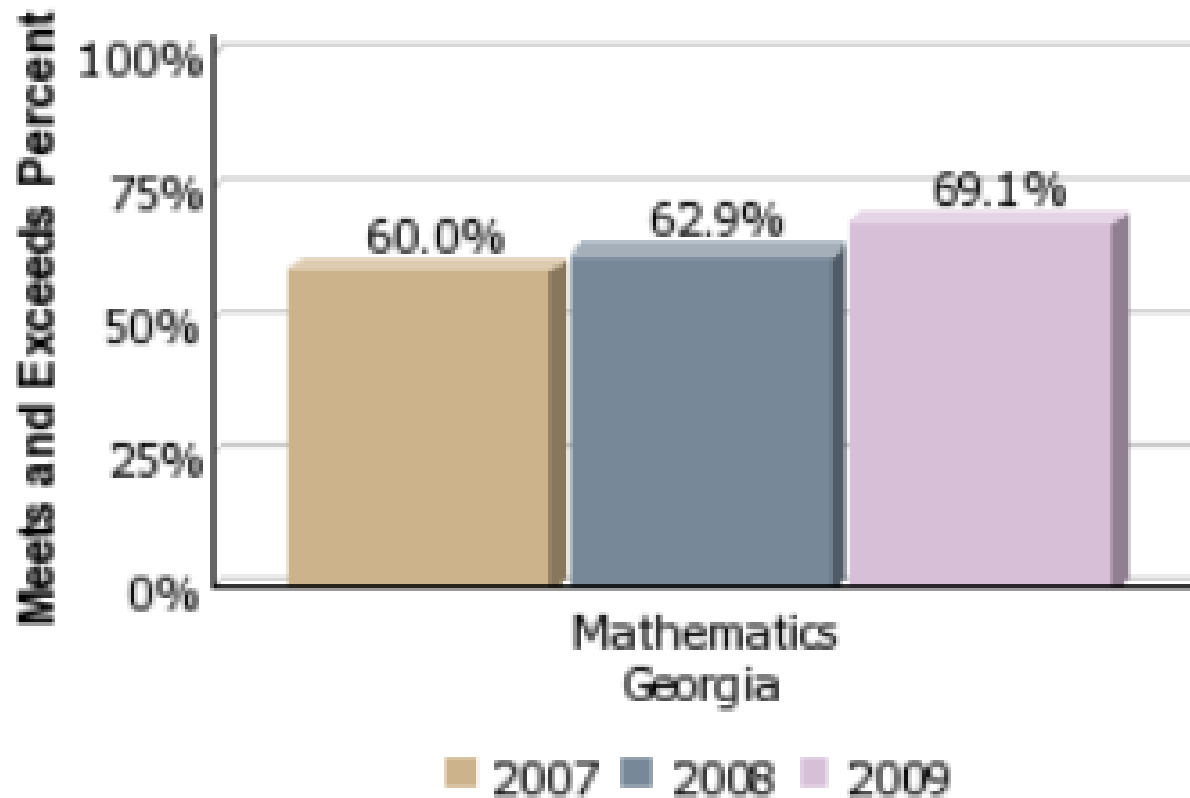


Grades 6-8



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# GHSGT - Mathematics



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# APR - CRCT and Enhanced GHSGT

Percentage of Students Meeting  
or Exceeding Standards

Georgia

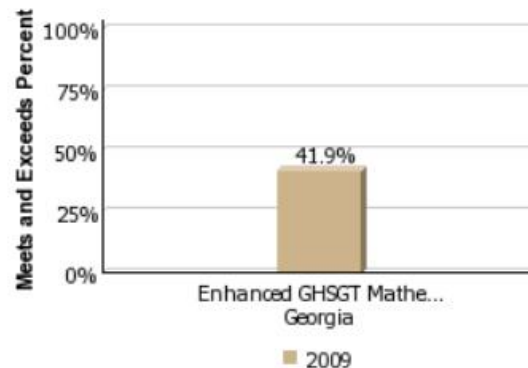
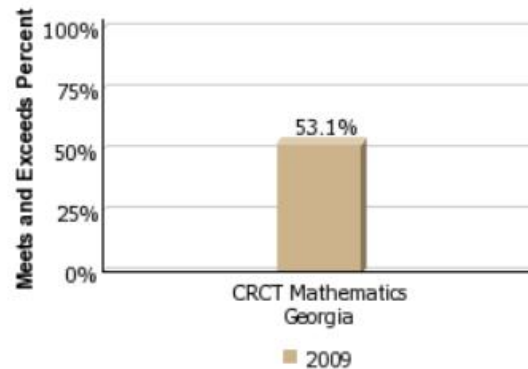
2009

CRCT Mathematics

53.1%

Enhanced GHSGT Mathematics

41.9%



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# Students with Disabilities?

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# The Essential Questions

- A. What's behind the struggle?
- B. Why does acceleration work?
- C. How can we best transform SWD into capable math students?
- D. What resources are available?

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# Processing

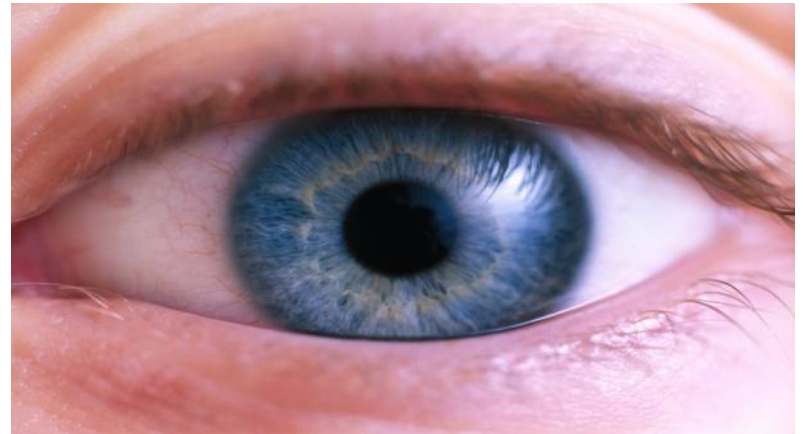
- **Processing Deficits** are problems with the processes of recognizing and interpreting information taken in through the senses.
- The two most common areas of processing difficulty associated with learning disabilities are **visual** and **auditory perception**.
- Other processing difficulties are **memory** (working, factual, and procedural), **distractibility**, **attention**.

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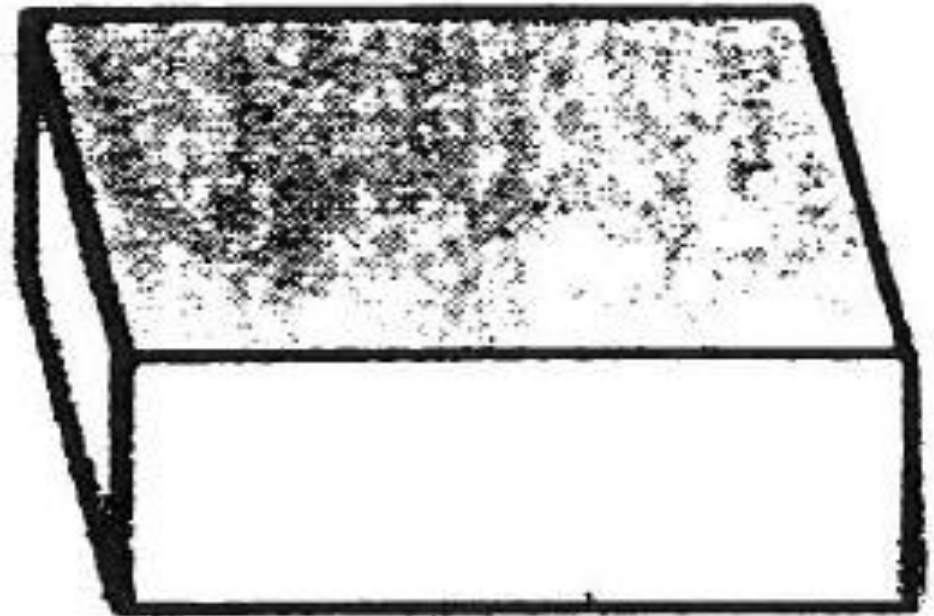
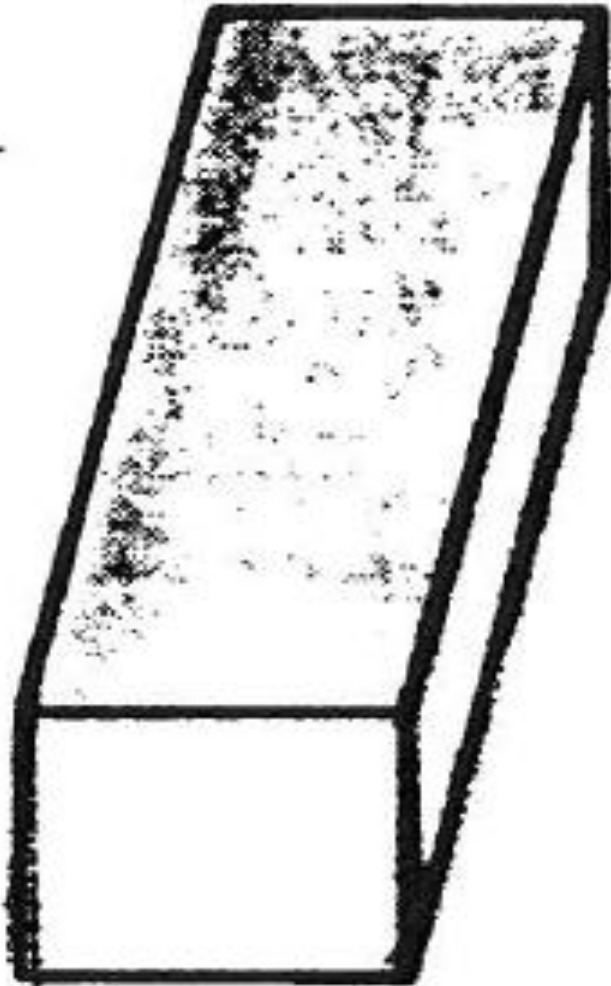
# Visual Processing Disorder

- Spatial relation
- Visual discrimination
- Visual closure
- Visual agnosia
  - (object recognition)
- Whole/part relationships
- Visual motor integration



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# Which block has the larger dimension?



*we will lead the nation in improving student achievement.*

Which letter is it? Which number is it?

b d p q

14 1 4 41

4 + 1

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# Activity

- Misunderstood Minds
  - Spatial activity
  - <http://www.pbs.org/wgbh/misunderstoodminds>

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# Auditory Processing Disorder

- Phonological awareness
- Auditory discrimination
- Auditory memory
- Auditory sequencing
- Auditory blending



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# Got Memory?

- Working Memory
- Factual Memory
- Procedural Memory



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# Try This

- 6 5 8 7 4 5 6 8 4
- 3 2 1 9 5 6 4 2 1
- 6 5 1 5 1 3 2 3 5

- A. Multiply the third number in the first row by the seventh number in the third row.
- B. Add this result to the fifth number in the second row.
- C. Add to this total ten times the fourth number in the third row.
- D. Subtract the eighth number in the first row from the result.

[www.pbs.org/wgbh/misunderstoodminds](http://www.pbs.org/wgbh/misunderstoodminds)

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# Distractibility vs Attention

- Distractibility
  - Visual distractibility
  - Auditory distractibility
  - Tactile distractibility
- Attention

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# Activity

- Misunderstood Minds  
visual  
auditory

<http://www.pbs.org/wgbh/misunderstoodminds>

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# Got the Vocabulary?

93%

of teachers assume if you read the word in the passage you will understand the paragraph.

## COMPREHENSION

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# Foundations for Success

National Mathematics Advisory Panel  
Final Report, March 2008

- Children's goals and beliefs about learning are related to their mathematics performance.
  - Children's beliefs about the relative importance of effort and ability can be changed.
  - Experimental studies have demonstrated that changing children's beliefs from a *focus on ability* to a *focus on effort* increases their engagement in mathematics learning, which in turn improves mathematics outcomes.

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# Motivational Research Indicates

- “...the beliefs that individuals create and develop and hold to be true about themselves...are vital forces in their success or failure at school.”

Frank Pajares, *Self-efficacy Beliefs in Academic Contexts*, 2002

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# Self-efficacy & Tasks

- “...those who feel self-efficacious about learning or performing a task competently are apt to participate more **readily**, **work harder**, **persist longer** when they encounter difficulties, and achieve at higher levels.”

Schunk & Meece, Self-Efficacy Beliefs of Adolescents, 2005

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# Foundations for Success

National Mathematics Advisory Panel

Final Report, March 2008

- Scientific Knowledge on Learning and Cognition Needs to be Applied to the classroom to Improve Student Achievement:
  - To prepare students for Algebra, the curriculum must **simultaneously** develop conceptual understanding, computational fluency, factual knowledge and problem solving skills.
  - Limitations in the ability to keep many things in mind (working memory) can hinder mathematics performance.

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# The challenge is...

- To create an environment that fosters math self-efficacy, support processing deficits while utilizing instructional strategies that maximize math potential.

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# So? Where do we start?

- “You see, in life, lots of people know what to do, but few people actually do what they know. Knowing is not enough! You must take action.”

Anthony Robbins

- “Too often we give our children answers to remember rather than problems to solve.”

Roger Lewis

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# Critically Important

These gaps have to be closed in tandem:

1. Self-efficacy
2. Processing deficits
3. Math knowledge
4. Strategies



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# Acceleration can close both gaps

- Students move forward, not backward
- Gaps in math education filled in context while moving forward
- The largest indicator of student success is self-efficacy, not I.Q. Acceleration builds success!
- Scaffolding, vocabulary, & remediation “Just in time,” not “Out of Context”
- Two days ahead, not years behind
- Remediation in context when they need the skill, rather than in isolation.

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# Characteristics of an Environment that Builds Self-Efficacy

- Choices (Provides a sense of autonomy & control)
- Non-competitive (evaluated on task, not compared to other students.)
- Accommodate processing deficits (Stimulate all the senses , but not necessarily all at once)
- Descriptive, quick feedback
- Builds success early
- Promote an active participant rather than a passive observer.

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# Co-Teaching

- **General Educators** have knowledge of the curriculum
- **Special Educators** have knowledge of instructional processes for students who learn atypically

**Blending Co-Teaching structures  
with Research based Instruction**

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# What makes Co-Teaching SPECIAL?

- Collect student data, monitor and support student behavior
- Jigsaw instruction
- Think-out-louds
- Explicit instruction – Solve It! Program.
- CRA
- Cover, Copy, Compare technique
- Visual Mnemonic technique

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# Research shows the biggest gains with the following strategies:

1. Systematic and explicit instruction (large effect)
2. Student think-alouds (large effect)
3. Visual and graphic depiction of problems (moderate effect)

Effect size of .80 = Large

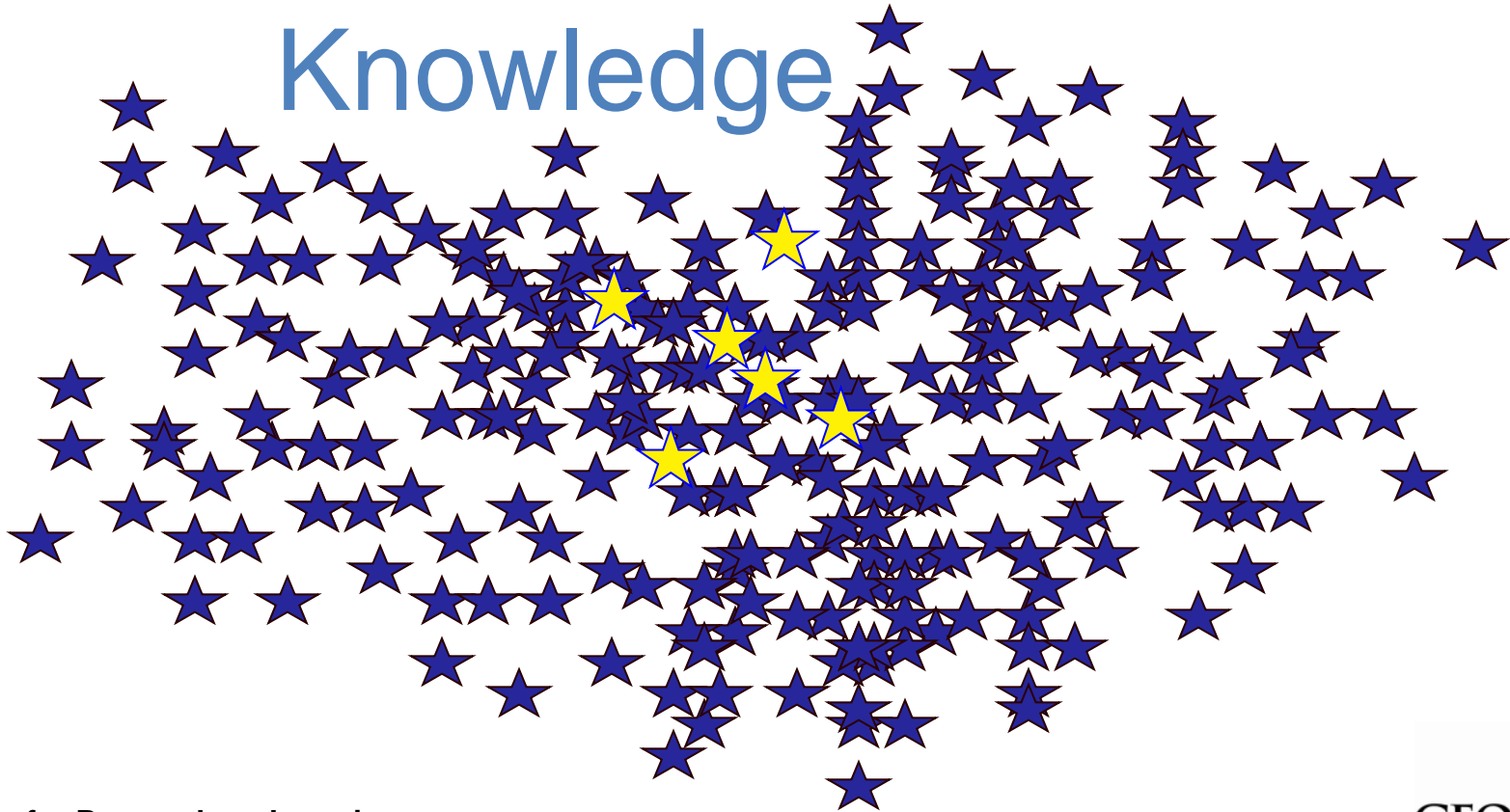
Effect size of .50 = Moderate

Effect size of .25 = Small

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# Thinking about the curriculum:

## Knowledge



Center for Research on Learning

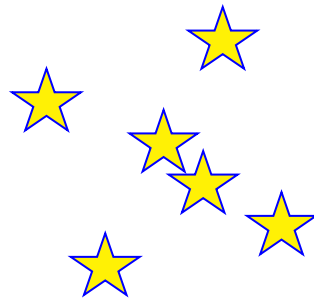
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# Thinking About the Curriculum...

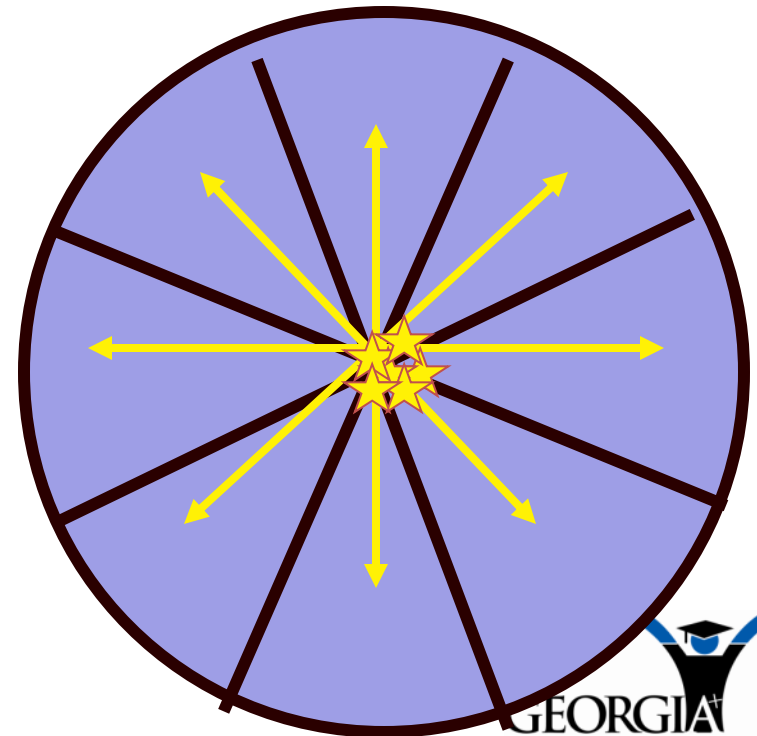
Knowledge



Critical Content



Course



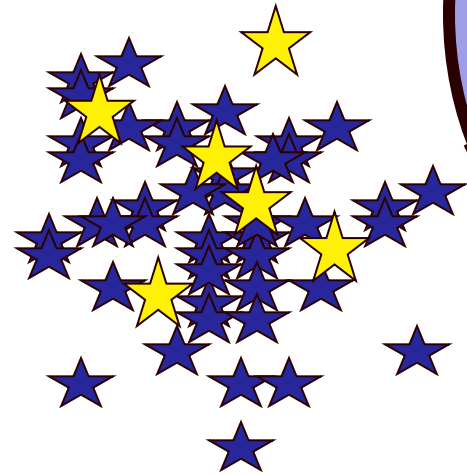
Center for Research on Learning

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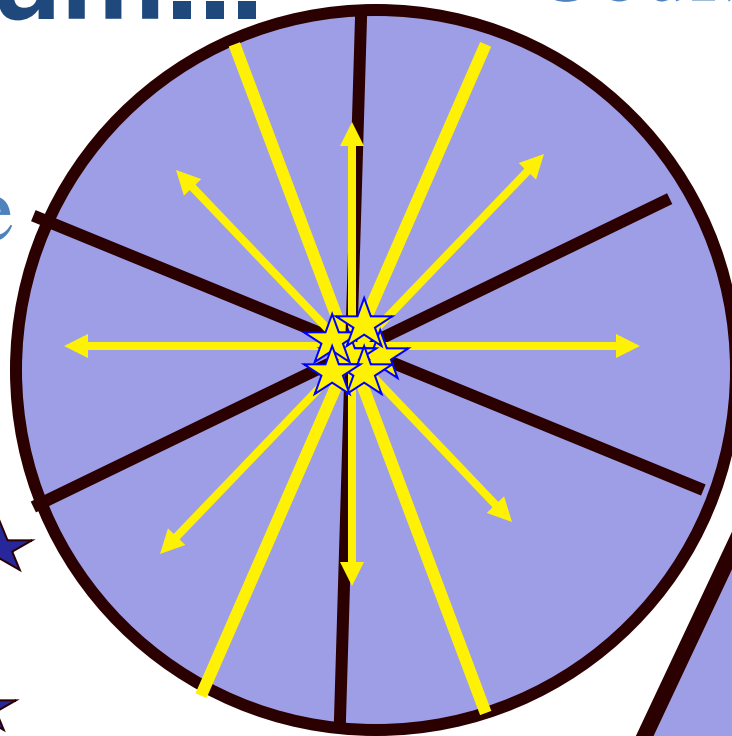


# Thinking About the Curriculum...

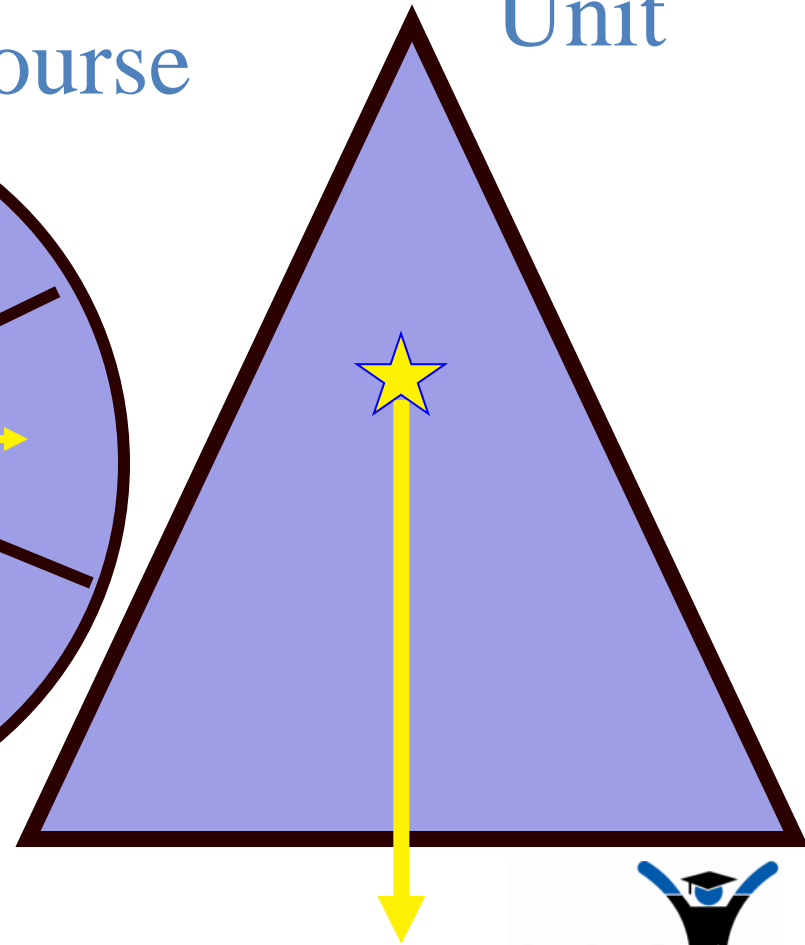
Knowledge



Course

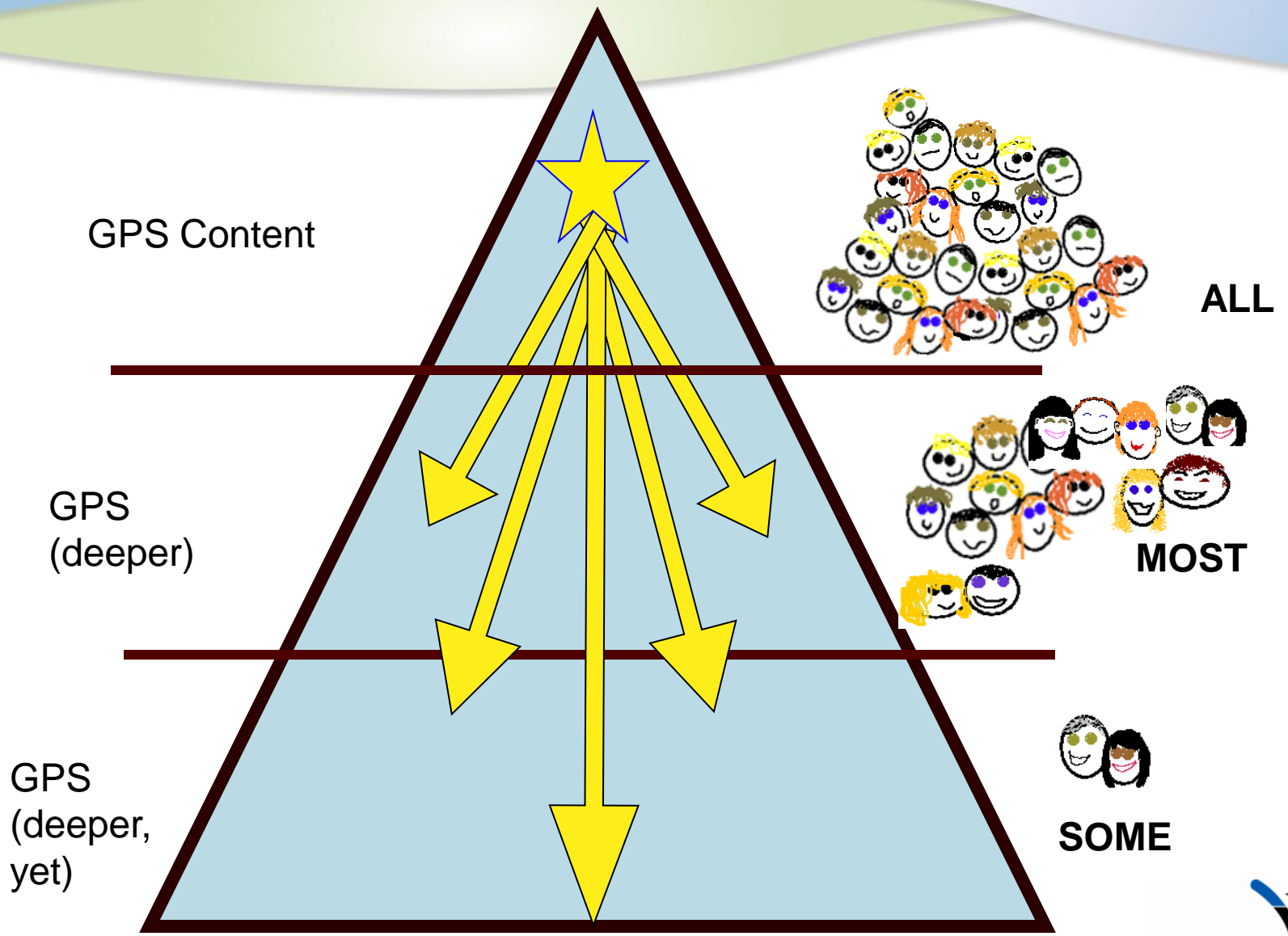


Unit



Center for Research on Learning

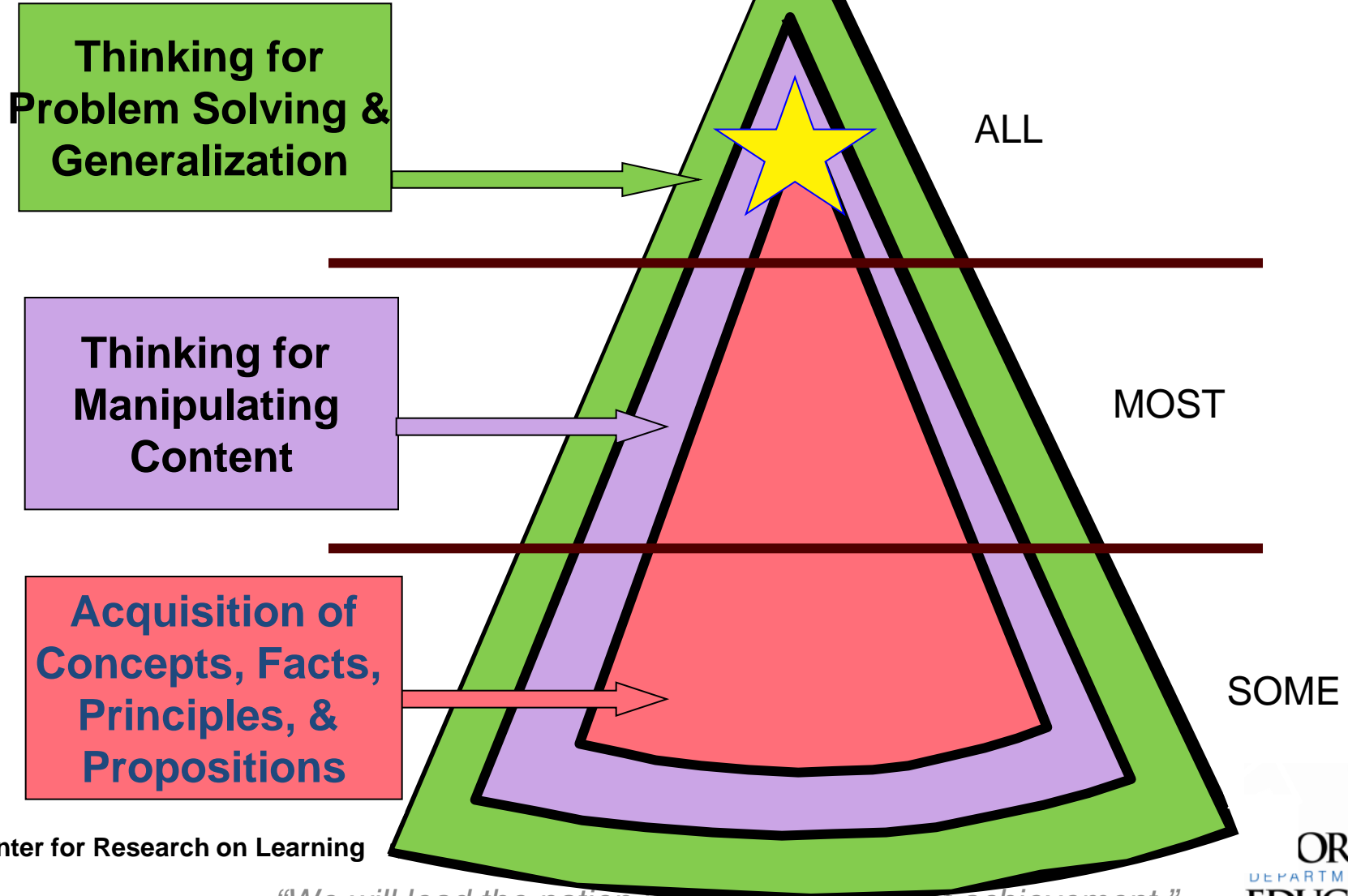
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Adapted from Center for Research on Learning

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# A Unit



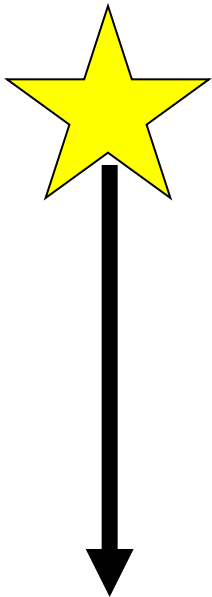
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# Backward Design

*What is sufficient evidence for demonstrating understanding of the critical content?*

# ***Start with the end in mind***



- **Start with unit/lesson questions that are derived from standards and benchmarks.**
- **Design assessment procedures.**
- **Select/construct teaching devices, activities, and routines that ensure students meet assessment criteria.**

# Map the critical content

“If I stopped one of your students in the hallway as they left your class after taking the unit test and asked, “What was that unit about?” What would you want them to say?”



# RESOURCES

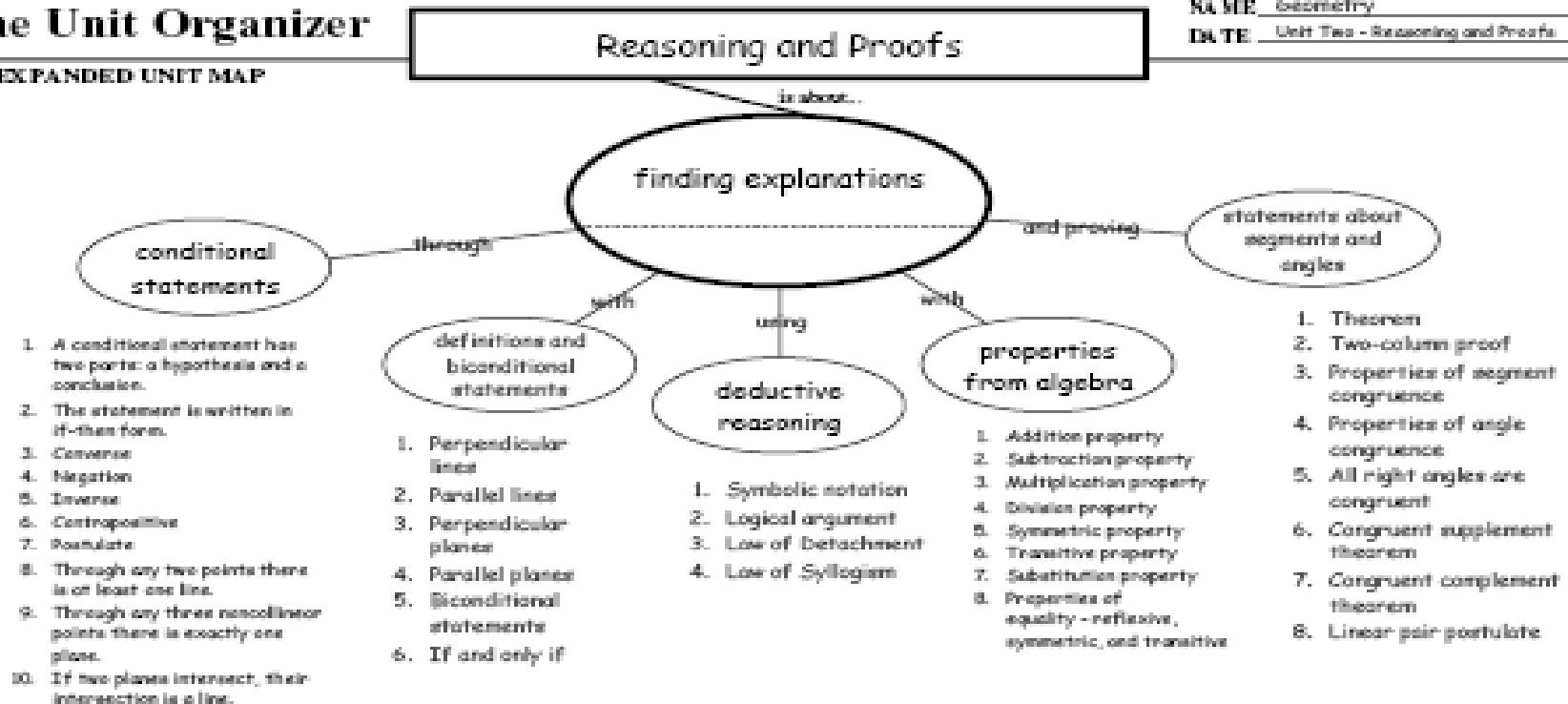
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# Graphic Organizers

## The Unit Organizer

NAME Geometry  
DATE Unit Two - Reasoning and Proofs

### 9 EXPANDED UNIT MAP



### 10 NEW UNIT SELF-TEST QUESTIONS

1. How do you use deductive reasoning to prove that lines are parallel or perpendicular?



# COMPARISON TABLE

② OVERALL CONCEPT

## Triangles

① CONCEPT

### Congruent Triangles

① CONCEPT

### Similar Triangles

③ CHARACTERISTICS

Corresponding angles are congruent  
 Corresponding sides are congruent  
 Logic  
 CPCTC  
 Four ways of proving the triangles are congruent: SSS, SAS, ASA, AAS, HL  
 Theory

③ CHARACTERISTICS

Corresponding angles are congruent  
 Corresponding sides are proportional  
 Scale Factor  
 Three ways to show the triangles are similar: SSS, AA, SAS (Similarity Theorems)  
 Applications  
 Find the measure of the missing side  
 Proportions

⑨ EXTENSIONS

FRAME : One proof and one measurement problem

④ LIKE CHARACTERISTICS

Corresponding angles are congruent

⑤ LIKE CATEGORIES

Corresponding angles

⑥ UNLIKE CHARACTERISTICS

Corresponding sides are congruent  
 Four ways to prove the triangles are congruent  
 CPCTC

Corresponding sides are proportional  
 3 ways to prove similar  
 Similarity Theorem

⑦ UNLIKE CATEGORIES

Sides  
 Ways to prove Theorems

⑧ SUMMARY

Congruent and similar triangles both have congruent corresponding angles, but they differ in their sides (congruent vs. proportional), ways to prove, and theorems.

Step 1: Communicate targeted concepts

Step 2: Obtain Overall Concept

Step 3: Make lists of known characteristics

Step 4: Pin down Like Characteristics

Step 5: Assemble Like Categories

Step 6: Record Unlike Characteristics

Step 7: Identify Unlike Categories

Step 8: Nail down a summary

Step 9: Go beyond the basics

# MATH FRAME

## Key Topic Deductive Reasoning

is about...

process of reasoning in which the argument supports the conclusion based on a rule  
(making conclusions based on known facts).

Main Idea

Symbolic notation

Essential details

conditional statements  
 $p \rightarrow q$   
converse  $q \rightarrow p$

$\sim$   
negation  
 $\sim p$

biconditional statements  
 $p \leftrightarrow q$

$p$  is hypothesis  
 $q$  is conclusion

Main Idea

Logical argument

Essential details

using if-then statements

using givens

using algebra concepts  
and properties

using postulates and  
theorems

Main Idea

Law of Detachment

Essential details

if  $p \rightarrow q$  is a true statement and  
 $p$  is a true statement, then we  
can conclude that  $q$  is true.

Example: If Jon gets 2 weeks  
of vacation, he will go to Europe.

He gets 2 weeks of  
vacation.

Therefore, we can conclude  
that Mark is going to Europe.

Main Idea

Law of Syllogism

Essential details

if  $p \rightarrow q$  and  $q \rightarrow r$  are both  
true, then we can conclude that  
 $p \rightarrow r$ .

Example: If Susan earns  
her course credits, she will  
graduate.

If she graduates, she  
will go to college.

Therefore, if Susan earns her  
course credits, she will go to  
college.

So What? (Whats important to understand about this?)

When we use deductive reasoning, we can make logical arguments in geometry.

# Paul Riccomini

- Workshops
  - Building Strategies to Help Students with Disabilities Graduate: Improving Academic Success in Math (SPDG)
  - Strategies for Making AYP for Math (SPDG)
- Elluminates
  - Error Analysis Procedures
- Video

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# Eluminates

- ❖ **Teacher Talk** (Talking about Learning and Kids)
  - Grade level
  - Math Support I bi-monthly talks
- ❖ **Special Education with General Education**
  - 10-15-08 Improving Academic Performance of SWD's for Elementary Mathematics
  - 11-12-08 Improving Academic Performance of SWD's for Secondary Mathematics
  - 01-14-09 SIA Mathematics Vocabulary & Interleave Strategies
  - 02-11-09 SIA Mathematics 1 and Mathematics Support, Space Learning
  - 03-18-09 SIA Mathematics: Graphic representation & Flexible groups (PAL)

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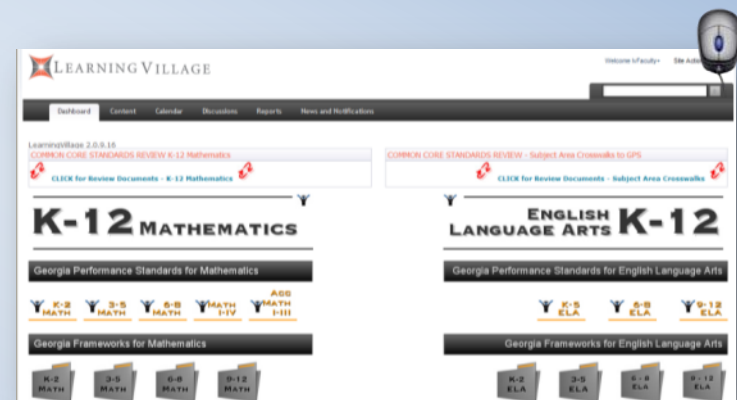


# LEARNING VILLAGE

Learning Village, a resource in alignment to the Georgia Performance Standards, has been designed to achieve a balance among concepts, problem solving, and skill development in Georgia's Mathematics classrooms. This resource stresses rigorous concept development, presents realistic and relevant tasks, and keeps a strong emphasis on computational skills.

*This website includes:*

- standards
- REVISED framework units
- classroom and training videos
- mathematics parent letters
- vertical alignment charts
- webinars
- middle school mathematics webcasts
- PowerPoint unit overviews (coming soon)




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# GeorgiaStandards.org...

Kathy Cox, State Superintendent of Schools

Home | Georgia Performance Standards | Frameworks | Resources & Videos | Training | GSO Builder

About Us | Teachers | Administrators | Parents | Contact Us




teachers administrators parents

**Please Pardon Our Progress**

The Advanced Search feature has been temporarily disabled. Any search currently performed on this site will not return relevant results, including use of the search engine above. We apologize for any inconvenience this may cause. Please review these helpful links:

- How to Access Standards
- How to Access Frameworks

**Quick Links**



**Announcements**

- NEW CTAE Middle School Instructional Resources
- NEW Lexile Framework for Reading in Action
- NEW Fine Arts Performance Standards
- NEW Health Education Standards
- Proposed REVISED Performance Standards for Eight High School CTAE Courses
- Proposed NEW Science Performance Standards

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# Accessing Learning Village

Kathy Cox, State Superintendent of Schools

Home | Georgia Performance Standards | Frameworks | Resources & Videos | Training | GSO Builder

About Us | Teachers | Administrators | Parents | Contact Us

Please Pardon Our Progress

## MyGaDOE

**teachers**

Quick Links

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**Helpful links**

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- ◆ [Information Systems](#)
- ◆ [AYP & NCLB](#)
- ◆ [Georgia Standards](#)
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**LEXILE**

**OAS**  
Georgia's Online Assessment System

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If you do not have a GaDOE portal login, please click on the "sign up for an account" link to gain access to Learning Village.

# Dashboard of Instructional sources ...



Welcome IvFaculty+ Site Actions

Dashboard Content Calendar Discussions Reports News and Notifications

LearningVillage 2.0.9.16

COMMON CORE STANDARDS REVIEW K-12 Mathematics

[CLICK for Review Documents - K-12 Mathematics](#)

COMMON CORE STANDARDS REVIEW - Subject Area Crosswalks to GPS

[CLICK for Review Documents - Subject Area Crosswalks](#)

## K-12 MATHEMATICS

Georgia Performance Standards for Mathematics



Georgia Frameworks for Mathematics



## ENGLISH LANGUAGE ARTS K-12

Georgia Performance Standards for English Language Arts



Georgia Frameworks for English Language Arts



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# Revised Elementary Frameworks

## Revised frameworks include:

Updated Standards

Differentiation

Essential Questions

Updated Tasks

Background Knowledge

The collage displays four pages from the Georgia Department of Education's Grade 1 Mathematics Frameworks. The top-left page is the title page for 'Grade 1 Mathematics Frameworks', Unit 3: Shapes and Fractions. The middle-left page is a 'Performance Task: Graphing Attributes' featuring a drawing of a person and a blue square. The top-right page shows 'Standard 1.G.A.1' and 'Standard 1.G.A.2' with associated essential questions. The bottom-right page lists 'Essential Questions' for the unit, such as 'How are shapes related?' and 'How are shapes used in our world?'.

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# Revised Middle School Frameworks

## Revised frameworks include:

Teacher's Edition

Student Edition

Essential Questions

Updated Tasks

Background Knowledge

**M A T H E M A T I C S**

Grade 8  
Mathematics  
Frameworks

Unit 2  
The Powers That Be

Teacher's Edition

**M A T H E M A T I C S**

Grade 8  
Mathematics  
Frameworks

Unit 2  
The Powers That Be

Student Edition

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Kathy Cox, State Superintendent of Schools

Georgia Department of Education  
State Capitol Building, 200 West Peachtree Street, N.W.  
Atlanta, Georgia 30334  
November 2, 2009 • Page 12 of 12  
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**Task: A Few Folds**

**ESSENTIAL QUESTIONS**

- What are exponents used and why are they important?
- How do I simplify and evaluate algebraic expressions involving integer exponents and roots?

**TASK COMMENTS**

In this task, students will explore with integer exponents to describe and continue patterns. Students may want to create and use a table to organize their work and findings. Allow students time to explore, discover, and generalize the properties of exponents and practice simplifying expressions with integer exponents.

**A Few Folds**

**Part 1:**

Repeatedly fold one piece of paper in half, recording the number of folds and the resulting number of layers of paper. Assuming that you could continue the pattern, how many layers of paper would there be for 10 folds, 100 folds,  $n$  folds? How do you know?

**Solution**

Number of folds	1	2	3	4	5	100	$n$
Number of layers of paper	2	4	8	16	32	1024	$2^n$
Number of layers of paper written using integer exponents	$2^1$	$2^2$	$2^3$	$2^4$	$2^5$	$2^{100}$	$2^n$

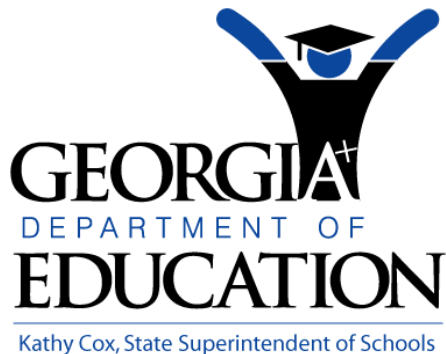
Students should see that each fold resulted in twice as many layers of paper as the previous fold.

Georgia Department of Education  
State Capitol Building, 200 West Peachtree Street, N.W.  
Atlanta, Georgia 30334  
November 2, 2009 • Page 12 of 12  
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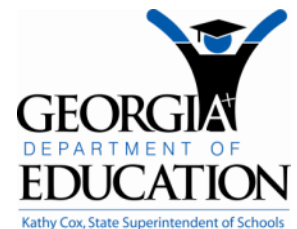
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# PBS TeacherLine

PBS TeacherLine is an online tool that offers low-cost, high-quality professional development classes to teachers so they can improve their abilities and earn the Professional Learning Units -- or PLUs -- they need to maintain their certification.



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# Mathematics Newsletters

## Mathematics Newsletters include:

Content Articles

Resources

Illuminate Calendar

Professional Learning  
Opportunities

Assessment Articles

Instructional Articles

**GEORGIA DEPARTMENT OF EDUCATION**

8-MONTHLY MATHEMATICS NEWSLETTER

# Mathematics

Issue 1 September 15, 2009

**In this Issue...**

- Assessment [P.1](#)
- Training [P.1](#)
- Learning Village [P.2](#)
- Featured GPS Classroom [P.2](#)

**Calendar**

September 15, 2009

- Math Supervisors webinar
- Mathematics I Support webinar

September 23, 2009

- Collaborative Math I & II webinar

October 1, 2009

- Grades 3-5 webinar
- Grades 6-8 webinar
- Mathematics I Support webinar

October 6, 2009

- Grades K-2 webinar
- Mathematics I webinar

October 13, 2009

- Mathematics I webinar

**MATHEMATICS TRAINING**

The Georgia Department of Education Mathematics Department, in collaboration with the Regional Education Service Agencies (RESA) and the Educational Technology Centers (ETC), will offer a one-day training session *Assessing for Mathematics EOCT Success: Part II* during the fall semester of the 2009-2010 school year.

This one day training session is built around the Mathematics I EOCT released items. Mathematics I and II teachers will be able to discuss and model the construction of test items, use Depth of Knowledge (DOK) in daily planning, and analyze results that will impact instruction in Tier 1 general classes and Tier 2 Mathematics Support classes.

Please remember that local school systems and/or RESA's will be responsible for managing the professional learning units (PLU) that may be connected with this session.

Registration is now open.  
Click [here](#) to register for *Assessing for Mathematics EOCT Success*.

**ASSESSMENT**

You may know that standardized tests are made up of items that reflect a variety of Georgia Performance Standards (GPS) for each grade level. But did you know that items also reflect different levels of cognitive complexity? Each item has a depth of knowledge (DOK) assigned to it in addition to a standard and element.

In assessing students, there are three possible DOK levels:

- Level 1 requires a student to recall information. Items may ask students to order, compute, estimate, or read from data displays.
- Level 2 requires a student to engage in mental processing beyond recall. Items may ask students to extend, solve, compare, explain, analyze, or construct data displays.
- Level 3 requires a student to reason using evidence and a higher level of thinking than Level 1 and Level 2. Items may ask students to predict, justify, convince, generalize, or translate knowledge into new context.

For more information on DOK levels, please click [here](#) and go to pages 24 and 25.

**Illuminate Level!**

Click [here](#) to access Illuminate.

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# Mathematics Newsletters

To subscribe to the bi-monthly newsletter, send an email with no message to the appropriate email address listed below:

<mailto:join-mathematics-k-5@list.doe.k12.ga.us>

<mailto:join-mathematics-6-8@list.doe.k12.ga.us>

<mailto:join-mathematics-9-12@list.doe.k12.ga.us>

<mailto:join-mathematics-districtsupport@list.doe.k12.ga.us>

<mailto:join-mathematics-administrators@list.doe.k12.ga.us>

<mailto:join-mathematics-resa@list.doe.k12.ga.us>



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# Parent Letters

## Mathematics Parent Letters include:

Each letter provides glimpses of the content investigated in class, suggestions for activities to explore at home, vocabulary used in the unit, grade-appropriate readings related to the math content, and links to websites that contain additional background information or practice opportunities for skills development.

**CSI Unit Diagram**

**Further Investigations**  
In this section, the reader can find activities that parents can do with their students at home to extend or enrich the learning from the classroom.

**Terminology**  
Vocabulary for the unit is defined in this section of the Unit.

**Book 'em**  
Non-math books (or chapters in higher grades) are listed in this section. These references provide pictures of the math content being used, or they suggest the need or usefulness of the mathematics.

**Related Files**  
If the user clicks on this section (or enters the address in his browser), he will be referred to links for student practice and background information for topics addressed in the unit.

**Classroom cases and Case closed-evidence**  
These sections provide sample problems or activities that might be investigated in class along with typical solutions or results.

**Clues**  
In the Clues section are hints for understanding and appreciating the mathematics. For example, this section tells the reader that circle graphs are often called pie charts.

**CSI: MATHEMATICS Curriculum Support Information**  
A mathematics resource for parents, teachers, and students

**Fractions and Decimals**  
Students will:

- Recognize that the numerator of a fraction is the top number and that it represents the number of parts of the set or whole.
- Recognize that the denominator is the bottom number of a fraction and that it represents the total number of parts of the set or the whole.
- Explain the context that the larger the denominator, the smaller the size of the parts.
- Compare unlike fractions and help each other to make them like fractions or unlike the other.
- Recognize halves, thirds, fourths, eighths, tenths using various fraction models.

**Classroom Cases:**

- Use a number line to represent  $\frac{3}{5}$ .

**Case Closed - Evidence:**

$\frac{3}{5} = \frac{6}{10} = \frac{3}{5}$

- You have 18 balls in a game of the lot and you only get 5 in the bucket. Check a representation of your score and write your score as a fraction and a decimal fraction.

**Case Closed - Evidence:**

Fraction:  $\frac{3}{5}$       Decimal: 0.6


- If you cut it into two different size pieces with the denominator remaining the same, halves, thirds, fourths, and tenths will represent the pieces of each. Draw pictures to represent your answer.

**Case Closed - Evidence:**

**Clues:**  
A circle graph is just another name for a circular fraction.  
The relationship is understood by the relationship between the total and the part. The whole should be equal to the sum of the parts. For example,  $1 + 2 + 1 + 1 + 1 = 5$ .  
Students get confused when they see a half always written as half. Show different ways that a half can be represented. Use a number line to show that a half is equal to two tenths. The whole denominator is half the numerator.

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# GPS Mathematics Classroom Videos




**GeorgiaStandards.Org**  
Kathy Cox, State Superintendent of Schools

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  - GPS for K-5 Math Polycom
  - Math I: Algebra/Geometry/Statistics
  - Math I: Assessing for Math Success
  - Math II: Geometry/Algebra II/Statistics
  - Effective Math Instruction for Students with Diverse Needs
  - GPS in Action
  - Tips from the Trenches
- Science
- Social Studies
- Special Education
- Career, Technical, and Agricultural Education (CTAE)
- GSO to GO Videos & Podcasts

Home » Resources & Videos » Browse Videos » Mathematics » Georgia Classroom Instructional Videos

## Georgia Classroom Instructional Videos

<p><b>Kindergarten</b></p> <ul style="list-style-type: none"> <li>• Chrysanthemum is My Name (Unit 4)</li> <li>• How Heavy Is It? (Unit 4)</li> <li>• It's All in the Bag (Unit 6)</li> <li>• Take it to the Store! (Unit 6)</li> <li>• Math Tubs</li> <li>• Calendar</li> </ul> <p><b>Grade 3</b></p> <ul style="list-style-type: none"> <li>• Shopping for Healthy Snacks (Unit 1)</li> <li>• Making "Cents" of Division (Unit 2)</li> <li>• Twenty-four Kids All in Rows (Unit 2)</li> <li>• A Giraffe Named Stretch (Unit 2)</li> <li>• Family Reunion (Unit 2)</li> <li>• Guess Who's Coming to Dinner (Unit 3)</li> <li>• Math Centers</li> </ul> <p><b>Grade 6</b></p> <ul style="list-style-type: none"> <li>• Arrays, Factors, and Number Theory (Unit 2)</li> <li>• Cupid Targets Fractions and Recipes (Unit 3)</li> <li>• Re-carpeting the Classroom (Unit 7)</li> </ul>	<p><b>Grade 1</b></p> <ul style="list-style-type: none"> <li>• Jelly Bean Grab (Unit 1)</li> <li>• Creating Story Problems (Unit 2)</li> <li>• Which One Doesn't Belong! (Unit 3)</li> <li>• It's Time (Unit 4)</li> <li>• Measurement Masters (Unit 4)</li> <li>• How Many Ways? (Unit 5)</li> </ul> <p><b>Grade 4</b></p> <ul style="list-style-type: none"> <li>• Grocery Shopping (Unit 1)</li> <li>• Using Arrays to Multiply Bigger Number 2)</li> <li>• Kilogram Scavenger Hunt (Unit 3)</li> <li>• Quadrilateral Challenge (Unit 4)</li> <li>• Flag Fractions (Unit 5)</li> <li>• Balance Scales (Unit 6)</li> <li>• Balance Scale Algebra (Unit 6)</li> </ul> <p><b>Grade 7</b></p> <ul style="list-style-type: none"> <li>• The "eyes" have it! (Unit 1)</li> <li>• A Second Challenge (Unit 4)</li> <li>• A Final Challenge (Unit 4)</li> <li>• Seesaw Nickels (Unit 6)</li> </ul>
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01:00

- Multiplication and Division of Fractions Book (Unit 3)
- Number Riddles (Unit 3)
- The Sieve of Eratosthenes (Unit 3)
- It's as Easy as Pi (Unit 4)

**Grade 8**

- Is it Fair? (Unit 1)
- Expanding Space Station (Unit 3)
- Walk the Graph (Unit 5)
- Cara's Candles & DVD Club (Unit 7)

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# Mathematics Videos

[www.georgiastandards.org](http://www.georgiastandards.org)

- Administrator's Mathematics Toolkit
- Georgia Classroom Instructional Videos
- Webcasts: Using Manipulatives, Gr. 6-8
- GPS for K-5 Math Polycom, March, 2009
- Mathematics I: Algebra/Geometry/Statistics
- Mathematics I: Assessing for Mathematics Success
- Mathematics II: Geometry/Algebra II/Statistics
- Effective Mathematics Instruction for Students with Diverse Needs
- Georgia Performance Standards In Action
- Tips From the Trenches

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# What is georgiamath.org?

From  
<http://www.gadoe.org>

Look for the calculator!

Or go directly to:  
[georgiamath.org](http://georgiamath.org)

The screenshot shows the Georgia Department of Education website. At the top left is the logo for the Georgia Department of Education, featuring a graduation cap and the text "GEORGIA DEPARTMENT OF EDUCATION". To the right of the logo is a navigation menu with links: Home, About GaDOE, State Board of Ed., School Improvement, Curriculum, and Data Reporting. Below the navigation menu is a banner with the text "Shaping brighter futures." and "Georgia Department of Education" next to a photo of a young girl. A search bar is located below the banner. The main content area is divided into several sections: "GaDOE Website HIGHLIGHT" with links for About GaDOE, State Board of Education, School Improvement, Curriculum, and Data Reporting; "FEATURE" with a "Strategic Plan.. Mission and Goals" graphic; "Georgia Performance Standards" with a link to "GeorgiaStandards.Org"; "SCHOOL FINDER" with a map of Georgia; "STRATEGIC PLAN" with a "View Strategic Mission and Goals" link; and "GEORGIAMATH.ORG" with a link to "GEORGIA MATHEMATICS PROGRAM" and a calculator icon. A red arrow points from the "Look for the calculator!" text to the calculator icon in the Georgia Math Program section.

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# What can you find at the [georgiamath.org](http://georgiamath.org) page?

- ❖ Introductory Video by Kathy Cox
- ❖ Comparison of QCC and GPS Course Content
- ❖ Information about learners requiring acceleration and learner requiring support
- ❖ Resources for Parents, Teachers and Educators
- ❖ General Information
- ❖ Link to [GeorgiaStandards.org](http://GeorgiaStandards.org)

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# Year 3

- Mathematics III
- Mathematics Support III (optional)

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# Fourth Year Mathematics Courses

- Mathematics IV
- Advanced Mathematical Decision Making
- Advanced Mathematical Decision Making in Industry and Government
- Advanced Mathematical Decision Making in Finance
- AP Statistics
- AP Calculus AB/BC

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State Board Rule 160-4-2-.20	Course Numbers
Mathematics Support III	27.04600
Advanced Mathematical Decision Making	27.08500
Advanced Mathematical Decision Making in Industry and Government	27.08600
Advanced Mathematical Decision Making in Finance	27.08700

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# Thanks to:

Richard D. Lavoie     [How Difficult Can This Be? A Learning Disabilities Workshop \(1989\)](#)

Dr. Mel Levine     <http://www.pbs.org/wgbh/misunderstoodminds>

<http://www.eyetricks.com/illusions.htm>

Center for Research on Learning  
Kansas Content Enhancements

Sileo, Jane M and van Garderen, Delinda (2010) Creating Optimal Opportunities to Learn Mathematics: Blending Co-Teaching Structures With Research-Based Practices. *Teaching Exceptional Children*, Vol.42, No. 3, pp.14-21.

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# Presenters

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## **Sharquinta Tuggle**

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# Final Thought...

- “A man who doubts himself is like a man who would enlist in the ranks of his enemies and bear arms against himself. He makes his failure certain by himself being the first person to be convinced of it.”  
- Alexandre Dumas

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