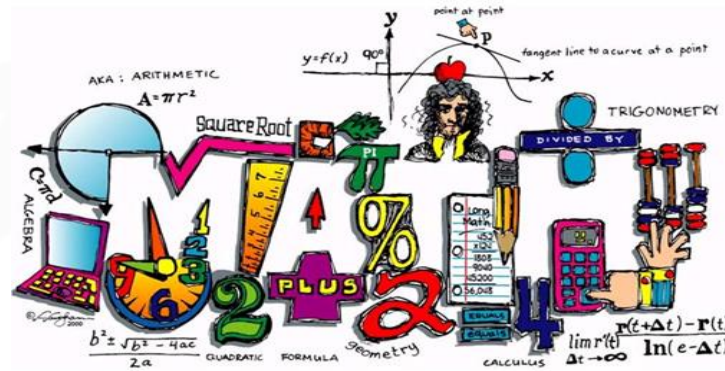


2019 Georgia Mathematics Summit

Mathematics Update



Lya R. Snell, Ph.D., Mathematics Program Manager

Mike Wiernicki, Elementary Mathematics Program Specialist

Brooke Kline, Secondary Mathematics Program Specialist

Georgia Department of Education

Networking Time!!

- ❖ You will need:
 - ❖ A math networking sheet
 - ❖ A pencil/pen
 - ❖ A networking spirit
- ❖ Find a different person to sign each cell of your handout.
- ❖ Happy Mathing!



Follow Us! Share the Goodness!!



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@GaDOEMath

twitter 

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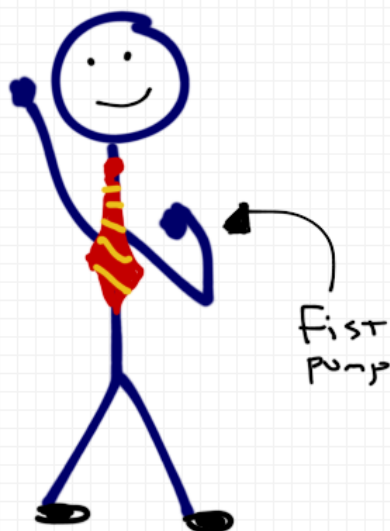
2 + 1

Truths Lie

Georgia Department of Education

Lunch

YES!
FREE LUNCH!



RobComplains.com



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Join one of our Professional Learning Communities!



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- www.edweb.net
- (K-5): <https://www.edweb.net/georgiamathematicsk-5>
- (MS): <https://www.edweb.net/georgiamathematics6-8>
- (HS): <https://www.edweb.net/georgiamathematicsHS>



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twitter

YouTube



Mathematics Educators' Professional Learning: Quantifiable Impact



GEORGIA

MATHEMATICS

1,365,822

Educator Visits to
Mathematics Professional
Learning & Resources
on Websites (FY19)



88,757

On-Demand
Professional Learning
Outreach
(video series for each
grade level/course)

1,503

FY19 Mathematics
Professional
Learning
(face-to-face)



YouTube

1,415

Online
Professional
Learning
Communities
(K-5, 6-8, 9-12)



2,809

Mathematics
Social Media
Outreach

@GaDOEMath

15,730

FY19
Mathematics
Listservs: 15,730
educators reached



www.gadoe.org/mathematics

www.georgiastandards.org



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2019 Mathematics Summer Institute

Dates: June 10 – 12, 2019

Location: Macon Centreplex

Grade Band Sessions: K-2, 3-4, 5-7, and 8-HS

Focus Areas:

- Increasing mathematical literacy among Georgia students
- Improving teacher content knowledge and pedagogy
- Providing evidence-based strategies to meet the needs of all Georgia learners in their quest to master the Georgia Standards of Excellence

Partnership with School and District Effectiveness

NEW



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Georgia MathTalks Podcast Series

www.gadoe.org/mathematics

CHARTING A COURSE FOR SUCCESS: AMERICA'S STRATEGY FOR STEM EDUCATION STEM/STEAM Strategic Goals



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White House Strategic Plan for STEM

(December 2018)

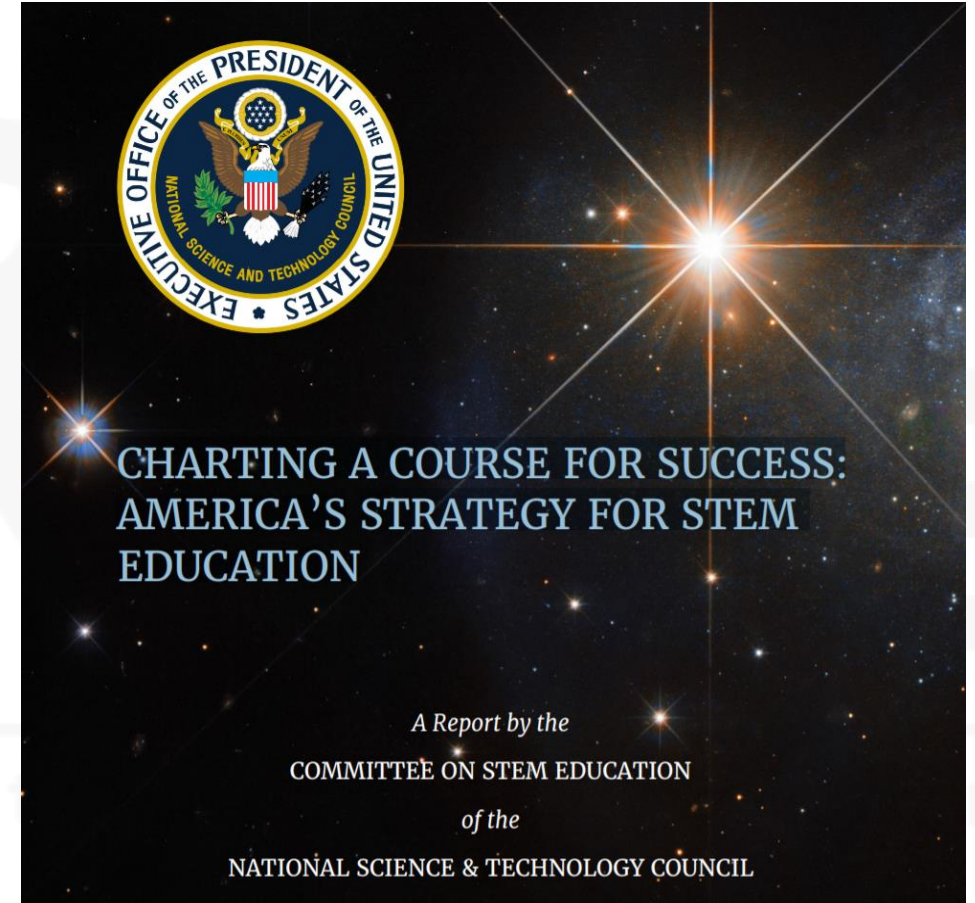
IMPORTANT HIGHLIGHTS

Make Mathematics a Magnet

- Mathematics and statistics are foundational to success across all STEM fields of study, providing a universal language to describe and reason about models of real-world phenomena.

Make Computational Thinking an Integral Element of All Education

- Computer science education for all remains a national priority, and this priority is more likely to be achieved through the universal integration of computational thinking across education systems.



Keenville (1st & 2nd Grade)



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- 31 games total at end of Development.
- 15 math games that span all domains and align to specific skills in 1st and 2nd grade.
- All teachers and administrators have access to Keenville through their SLDS. If the tab doesn't appear on their platform, they need to contact their local SIS/IT director to gain provisions.

Mathematics Video Series (K-2)



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The screenshot shows the Georgia Standards of Excellence website. The header includes the GaDOE logo and the text "GeorgiaStandards.org". Below the header is a navigation bar with links: Home, CCRPI, Georgia Standards of Excellence, GPS, Content Area Frameworks, Resources/Videos, Personalized Learning, and Archives. The main content area is titled "BROWSE STANDARDS" and features a video thumbnail of a teacher and students. To the right of the thumbnail is the text "What do Mathematics Standards Look Like in the Classroom?". Below this is a section titled "Kindergarten Mathematics Video Series" with a "NEW MGSEK.CC.4" label. The video player shows a play button and the text "MGSEK CC 4". A sidebar on the left lists various standards categories: English Language Arts, Fine Arts, Mathematics, Science, Social Studies, Literacy in Social Studies, Science, & CTAE, Archives, and Physical Education.

Kindergarten – 10 Videos

K.CC.4, K.CC.5, K.NBT.1, K.G.4, K.G.6,
K.OA.2, K.OA.3, K.OA.4, K.OA.5, K.MD.3,

1st Grade – 10 Videos

1.OA.1, 1.OA.3, 1.OA.4, 1.OA.5, 1.OA.6,
1.OA.7, 1.OA.8, 1.NBT.4, 1.NBT.5, 1.NBT.6

2nd Grade – 10 Videos

2.NBT.5, 2.NBT.6, 2.NBT.7, 2.NBT.9, 2.OA.1,
2.OA.2, 2.OA.3, 2.G.3, 2.MD.7, 2.MD.8

Mathematics Video Series (3-5)



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The screenshot shows the Georgia Standards of Excellence website. The header includes the GaDOE logo and the URL GeorgiaStandards.org. A navigation bar contains links for Home, CCRPI, Georgia Standards of Excellence, GPS, Content Area Frameworks, Resources/Videos, Personalized Learning, and Archives. The main content area is titled 'BROWSE STANDARDS' and features a video thumbnail for 'What do Mathematics Standards Look Like in the Classroom?'. Below this, the '3rd Grade Mathematics Video Series' is highlighted, with a 'NEW MGSE3.NBT.1' video player showing a young student with glasses and a number line.

3rd Grade – 11 Videos

3.NBT.1, 3.NBT.2, 3.NF.1, 3.NF.2, 3.NF.3,
3.OA.5, 3.OA.8, 3.OA.9, 3.MD.1,
3.MD.7 (Parts 1 & 2)

4th Grade – 10 Videos

4.NBT.1, 4.NBT.6, 4.OA.3, 4.NF.1&2, 4.NF.3,
4.NF.4, 4.OA.1&2, 4.MD.1, 4.MD.2 4.MD.8

5th Grade – 10 Videos

5.NBT.1, 5.NBT.6, 5.OA.3, 5.NF.1, 5.NF.2,
5.NF.4, 5.NF.5, 5.NF.6, 5.NF.7, 5.MD.1

Mathematics Video Series (6-8)



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The screenshot shows the Georgia Standards.org website. At the top is the GaDOE logo and the text 'GeorgiaStandards.org'. Below this is a navigation bar with links: Home, CCRPI, Georgia Standards of Excellence, GPS, Content Area Frameworks, Resources/Videos, Personalized Learning, and Archives. The main content area is titled 'BROWSE STANDARDS' and features a video thumbnail for 'What do Mathematics Standards Look Like in the Classroom?'. The video description states: 'The Georgia Department of Education deeply appreciates the efforts of Georgia mathematics educators which resulted in the GSE Mathematics Standards in the Classroom video series. The series spotlights Georgia teachers and students engaged in effective instruction surrounding challenging standards as identified by mathematics teachers.' Below the video is a 'NEW MGSE6.RP.3a' section with a video player showing '6th Math MGSE6 RP 3a video'. The video player includes a play button, a 'Watch later' button, and a 'Share' button. On the left side of the website, there is a 'Browse Standards' sidebar with a list of subjects: English Language Arts, Fine Arts, Mathematics, Science, Social Studies, Literacy in Social Studies, Science, & CTAE, Archives, and Physical Education.

6th Grade – 10 Videos

6.RP.3, 6.RP.3a, 6.RP.3c, 6.NS.1, 6.NS.2,
6.EE.9, 6.G.1, 6.G.2, 6.G.4, 6.SP.5

7th Grade – 10 Videos

7.RP.3, 7.EE.3, 7.G.1, 7.G.2, 7.G.3,
7.G.6, 7.SP.2, 7.SP.3, 7.SP.7, 7.SP.8c

8th Grade – 10 Videos

8.NS.2, 8.EE.4, 8.EE.8, 8.F.5, 8.G.1,
8.G.2, 8.G.3, 8.G.4, 8.G.5, 8.SP.4

Mathematics Video Series (HS)



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The screenshot shows the Georgia Standards of Excellence website. The header includes the GaDOE logo and the text "GeorgiaStandards.org". Below the header is a navigation bar with links: Home, CCRPI, Georgia Standards of Excellence, GPS, Content Area Frameworks, Resources/Videos, Personalized Learning, and Archives. The main content area is titled "What do Mathematics Standards Look Like in the Classroom?". Below this is a section for "High School Mathematics Video Series" featuring a video player. The video is titled "HS Math MGSE9-12.N.Q.1 and MGSE9-12.N.Q.3 Video" and shows two students working on a math problem. The video player has a play button, a "Watch later" button, and a "Share" button. Below the video player is a section titled "Video MGSE9-12.N.Q.1 and MGSE9-12.N.Q.3 Resources" with a list of resources: "Solar Radiation Model Task, Illustrative Mathematics" and "Personal White Boards".

What do Mathematics Standards Look Like in the Classroom?

The Georgia Department of Education deeply appreciates the efforts of Georgia mathematics educators which resulted in the **GSE Mathematics Standards in the Classroom** video series. The series spotlights Georgia teachers and students engaged in effective instruction surrounding challenging standards as identified by mathematics teachers.

High School Mathematics Video Series

MGSE9-12.N.Q.1 and MGSE9-12.N.Q.3

HS Math MGSE9-12.N.Q.1 and MGSE9-12.N.Q.3 Video

Video MGSE9-12.N.Q.1 and MGSE9-12.N.Q.3 Resources

- Solar Radiation Model Task, Illustrative Mathematics
- Personal White Boards

High School – 17 Videos

N.Q.1/3, A.SSE.3b, A.CED.3, A.REI.4b,
A.REI.6, F.BF.1a, F.IF.3/F.BF.2,
F.BF.3, G.CO.9/10/11, G.SRT.4,
G.C.5 Part 1, G.C.5 Part 2, G.GMD.2,
G.GPE.6, G.MG.2, G.MG.3, S.CP.3

NEW



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Mathematics Video Project 3.0

- K-2 – 4 new videos *(coming July 2019)*
- 3-5 – 8 new videos *(coming July 2019)*
- MS – 4 new videos *(coming July 2019)*
- HS – 6 new videos *(coming July 2019)*



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NEW



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Mathematics Professional Learning Modules (On-Demand PL for Teachers)

- 6 new modules for K-5
- 9 more K-8 modules in development
- 1 Numeracy Project module in development

<http://www.galearns.org/>

Mathematics Resource Updates – July 2019



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- 2019 – 2020 Mathematics Resource Edits Document
 - Will be posted July 2019 on GSO
 - ❖ Updated tasks
 - ❖ Updated links
 - ❖ Updated Hyperlinks
 - ❖ Updated Interventions



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IDA Course Updates

<http://www.gadoe.org/Curriculum-Instruction-and-Assessment/Curriculum-and-Instruction/Documents/State-Funded-List-of-Subjects-and-Courses-Supported-by-SBOE-Rule-160-4-2-20-Summary-of-Changes.pdf>



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- 2 updates made to existing courses
 - 27.075200 New Course Number for Differential Equations
 - 27.022900 New Course Number for Grade 7 – Connections Remediation
- 21 GPS Courses Deleted from list of approved, state-funded courses (*beginning 2019-2020*)
- 8 new IB Courses Added
 - IB Math Curriculum Changes - <https://bit.ly/2FsB69D>
- IB Year One Courses Deleted - June 2019
- IB Year Two Courses Deleted - June 2020
- IB Theory of Knowledge Mathematics Courses Deleted – June 2020



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Ongoing Partnership with USG, TCSG and GICA on High School to Postsecondary Transition

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Dual Enrollment Update



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- FAQ document updated January 2019

<http://www.gadoe.org/Curriculum-Instruction-and-Assessment/Curriculum-and-Instruction/Documents/Mathematics/Dual-Enrollment-Mathematics-FAQs.pdf>

- Approved Dual Enrollment mathematics courses can meet mathematics requirements for graduation once the student has completed Algebra II/Advanced Algebra. Courses that include content beyond Algebra II/Advanced Algebra may be used to meet the fourth core mathematics requirement for graduation.
- Students are prepared for college level mathematics courses only after they have mastered the college readiness standards which culminate in Advanced Algebra or Algebra II. Neither College Algebra nor any other college course has been approved as an equivalent of Algebra II/Advanced Algebra.
- Diploma-level courses can only be awarded mathematics elective credit; however, the TCSG diploma-level courses will not meet high school mathematics graduation requirements for students pursuing a regular high school diploma.

SREB SAT & College Readiness Mathematics Study



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- SAT study of students in the College Readiness Mathematics course
- 8 Georgia schools participated - 872 students
- Students in CRM showed gains that were statistically significant.
- 69% showed improvement and the typical gain on the SAT math exam was 47 points



Georgia Department of Education

*College Readiness Mathematics
Professional Learning*
hosted by Southern Regional Education Board

Calling All High School Mathematics Teachers...
Reserve Your Seat TODAY!



*Summer Mathematics
Professional Learning*

**FREE
Learning
Opportunity**

June 18 – 20, 2019
8:30 AM – 4:00 PM
DeKalb Early College Academy
1701 Mountain Industrial Blvd.
Stone Mountain, GA 30083
Click [HERE](#) to Register



College Readiness Mathematics Professional Learning

- June 18 – 20, 2019
- Dekalb Early College Academy, Stone Mountain, GA
- Open to all high school mathematics teachers
 - Evidence-based, effective mathematics instructional strategies to assist in preparing students for post-secondary options.

Partnership with Southern Regional Education Board

Technical College Readiness Mathematics Update

Eligibility Requirements:

The course is designed for students who have experienced difficulty in passing middle school mathematics End of Grade (EOG) assessments, have struggled significantly in the first two high school mathematics courses, and have scored less than **229 on the Next-Generation ACCUPLACER Arithmetic Placement Test***.

*NOTE: Per College Board, the ACCUPLACER Classic Arithmetic Placement Test, which has been used as one of the eligibility requirements for enrollment in TCRM, is no longer available after January 28, 2019. Therefore, districts will now need to use the **Next-Generation ACCUPLACER Arithmetic Placement Test** to determine eligibility for TCRM. EXCEPTION: If the ACCUPLACER is taken at a TCSG institution, TCSG has received an extension until June 30, 2019.


NEW! FAQs Document – Updated March 2019

<http://www.gadoe.org/Curriculum-Instruction-and-Assessment/Curriculum-and-Instruction/Documents/Mathematics/FAQs-Technical-College-Readiness-Math.pdf>



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Revised January 2019

 **Technical College Readiness Mathematics**

Technical College Readiness Mathematics is a mathematics course option for students who have passed Algebra I/Coordinate Algebra, have passed or are currently enrolled in Geometry/Analytic Geometry while taking this course, and intend to enroll in a technical college program. By completing TCRM and attaining the required ACCUPLACER score, students will be able to take advantage of the High School Postsecondary Opportunity associated with Dual Enrollment (per 2015 Senate Bill 2).

Eligibility Requirements:
The course is designed for students who have experienced difficulty in passing middle school mathematics End of Grade (EOG) assessments, have struggled significantly in the first two high school mathematics courses, and have scored less than 229 on the Next-Generation ACCUPLACER Arithmetic Placement Test*.


*Note: The ACCUPLACER Classic Arithmetic Placement Test, which has been used as one of the eligibility requirements for enrollment in TCRM, is no longer available after January 28, 2019. Therefore, districts will now need to use the Next-Generation ACCUPLACER Arithmetic Placement Test to determine eligibility for TCRM.

The Next-Generation ACCUPLACER Arithmetic Placement Test is a computer-adaptive assessment of test takers' developed ability for selected mathematics content. The following knowledge and skill categories are assessed:

1. Whole number operations
2. Fraction operations
3. Decimal operations
4. Percent
5. Number comparisons and equivalents

Additional information regarding the Next-Generation ACCUPLACER Placement Tests can be found at

Instructional Resources:
Curriculum resources developed and shared by Hall County School District for this course can be found on [Teacher Resource Link](#) in SLDS.



2019 Georgia Math Conference



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**2020 Georgia
Math Conference
theme will also
be on Access &
Equity**

Please tell us what you're thinking!



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- Use the parking lot in the room to place any questions you have.
- Also, tell us any "+" or "Δ" that you would like to share.
- We LOVE hearing from you!!

Parking Lot	
<p>+</p> <p>Anything positive you'd like to share</p>	<p>Δ</p> <p>Any changes you would recommend</p>
<div></div> <p>Any questions you have</p>	



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Evidence-Based Practices to Support Students with Disabilities in Mathematics

OR

Math Teaching Practices that Work

Georgia Department of Education

Evidence Based and High-Leverage Practices for Students with Disabilities



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- Evidence Based Practices (EBPs) for special education are instructional strategies backed by research and professional expertise to support the learning and behavior of students with disabilities. (Cook, Tankersley, & Harjusola-Webb – 2008)
- High-Leverage Practices (HLPs) in special education are foundational practices shown to improve outcomes for students with disabilities.

<http://cedar.education.ufl.edu/wp-content/uploads/2017/12/HLPs-and-EBPs-A-Promising-Pair.pdf>

<https://iris.peabody.vanderbilt.edu/module/math/cresource/q1/p03/>

Evidence Based and High-Leverage Practices for Students with Disabilities

- Mathematics EBPs for Students with Disabilities

- Visual Representations
- Metacognitive Strategies

<https://iris.peabody.vanderbilt.edu/module/math/cresource/q1/p03/>

- Mathematics HLPs for Students with Disabilities

- Systematically design instruction towards a specific learning goal
- Adapt curriculum tasks and materials for specific learning goals
- Provide scaffolded supports
- Use strategies to promote active student engagement

<https://highleveragepractices.org/instruction/>

Resources Designed for All Students



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- Low barriers to entry
- High scalability
- Multiple pathways to solution

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Standards for Mathematical Practice (SMPs) For All!



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"Our mindsets need to shift; the SMP's are not only for our talented and gifted students."

~Mike Wiernicki, K-5 Mathematics Specialist, GaDOE

"All students should be provided with opportunities to engage in the Standards for Mathematical Practice; it is a matter of equity."

~Jenise Sexton, Gwinnett County Mathematics Coach



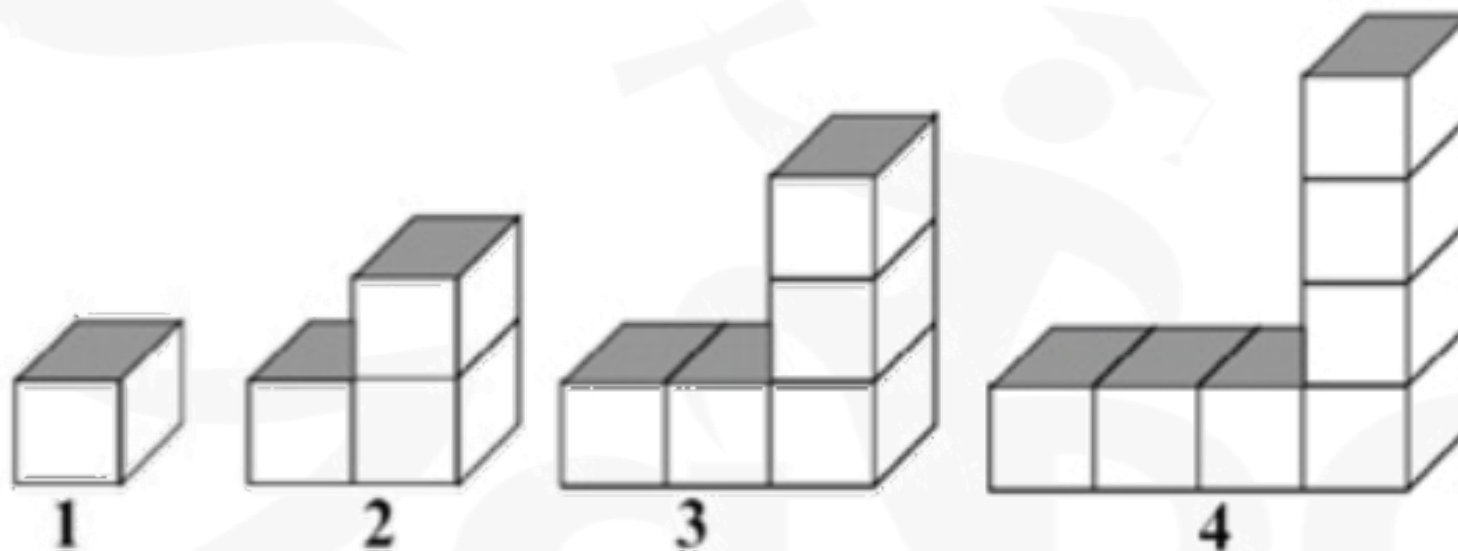


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Relish ambiguity.
- *Eli Luberoff*

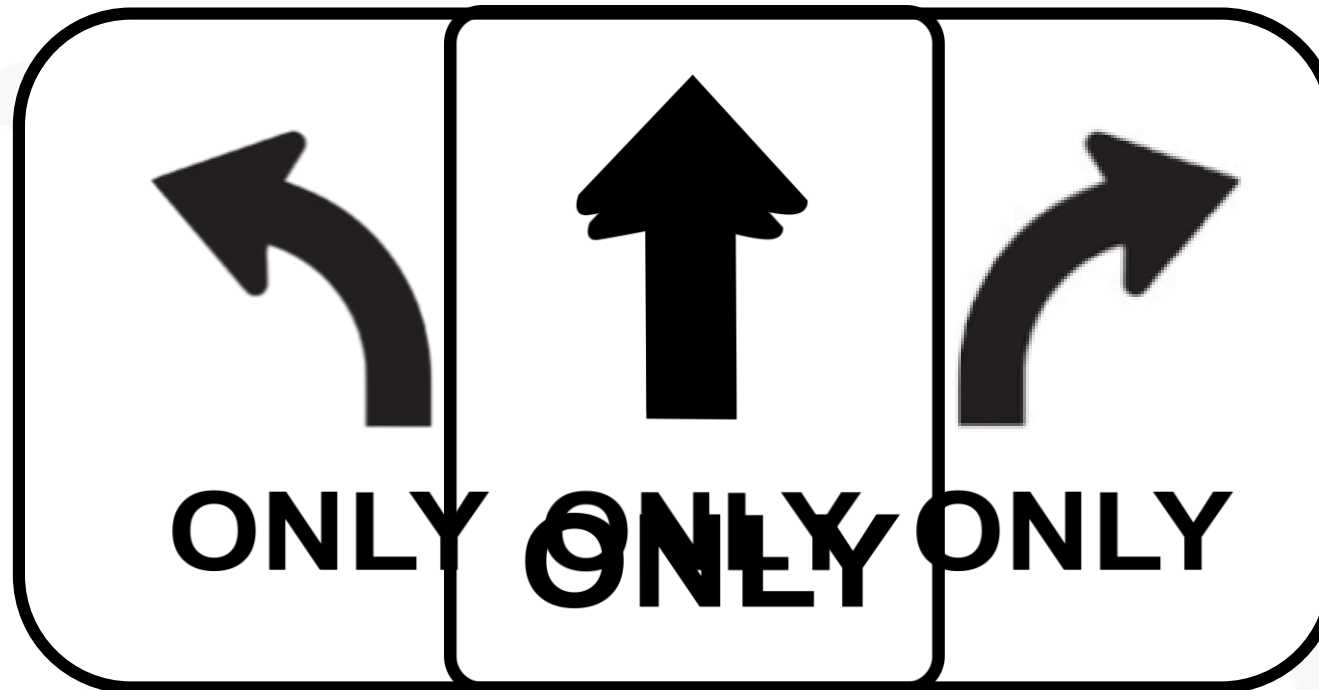
Georgia Department of Education <https://www.desmos.com/>

Visual Patterns



Build the next three stages.

Source: Visual Patterns
<http://www.visualpatterns.org/>



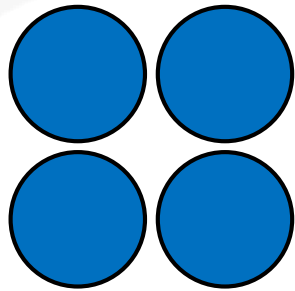


MAYBE MAYBE MAYBE

What comes next?



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1

2

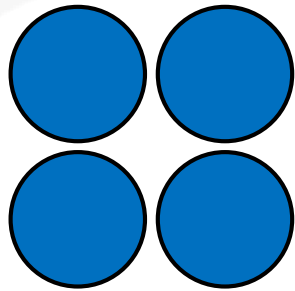
What else might come next?

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What comes next?



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1

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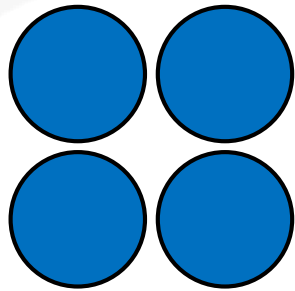
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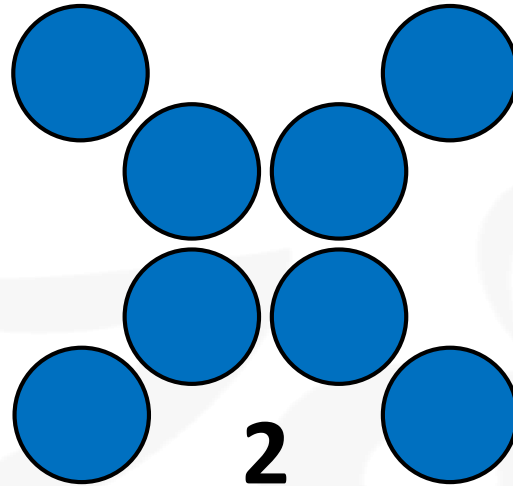
What comes next?



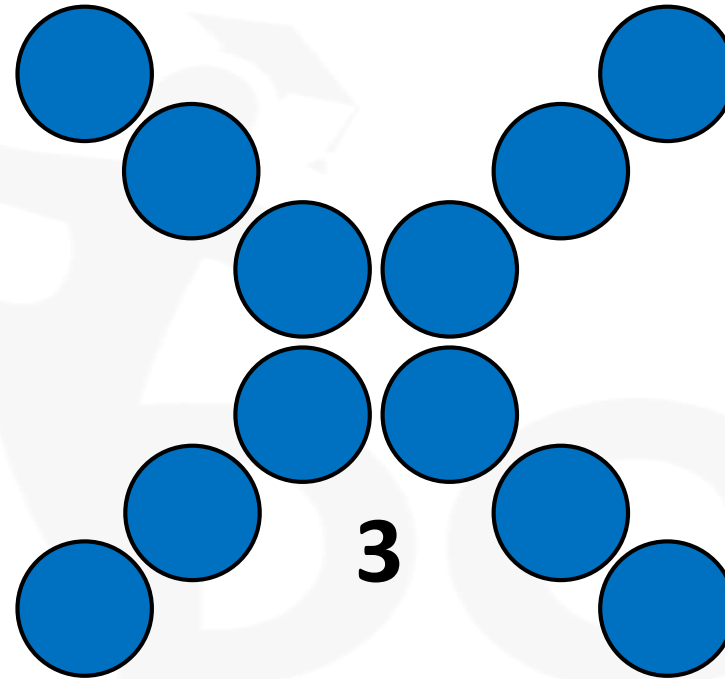
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1



2



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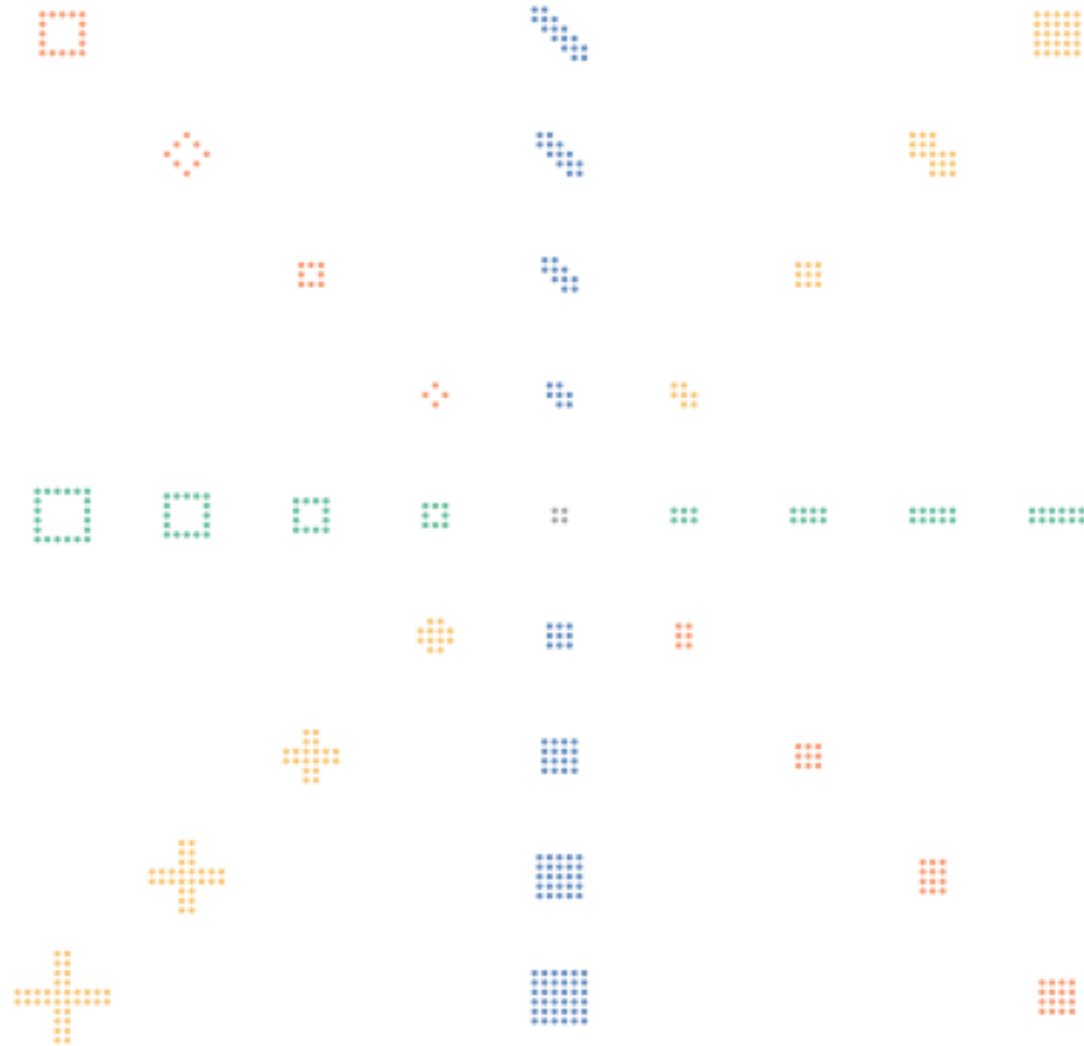
But we also thought of these



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Georgia



Education

From Graham:



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<https://gfletchy.com/gadoe19/>

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Questions??



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PL Survey



Scan me

www.tinyurl.com/mathPLsurvey



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Contact Information



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Brooke Kline

Secondary Mathematics Program Specialist

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404-657-9064

Important Websites to Remember

www.gadoe.org/mathematics Georgia Mathematics Program Updates

www.edweb.net Professional Learning Communities

www.georgiastandards.org Curriculum Resources



Thank
You