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UNIVERSITY OF GEORGIA**

Georgia K-12 Mathematics Standards Review Process

Citizens Review Committee

Description of Committee Activities and Working Notes
from the January 27, 2021 Meeting

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CITIZENS REVIEW COMMITTEE

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The Citizens Review Committee convened on January 27, 2021, from 10:00 AM to 1:00 PM to review and discuss the proposed mathematics standards. State School Superintendent Richard Woods provided a welcome as well as remarks about the review process. Faculty from the University of Georgia's Carl Vinson Institute of Government facilitated the meeting. A member of the Citizen's Review Committee who also served on the Working Committee of Teachers and Academic Review Committee and the chief of staff for the Georgia Department of Education provided an overview of the standards review process, structure of standards, key themes, and response to feedback. In preparation for the meeting, committee members were provided a draft of K-12 Mathematics Standards documents in advance. Members of the Citizens Review Committee shared first impressions, reviewed content statements for clarity and coherence, and provided feedback or recommendations.

Citizens Review Committee

The committee was composed of 20 members appointed by Governor Brian Kemp and State School Superintendent Richard Woods representing business, industry, community and economic partners, academic professionals and leaders from K-12 schools and districts, boards of education, local and state governments, nonprofits, teachers, parents, and students.

Citizens Review Committee Members

Dr. Jim Arnold – retired superintendent

Joseph Cortes – business and industry representative (consultant)

Andrew Gibbs – council member (Valdosta City)

Stacey Gyorgyi – parent

Lisa Marie Haygood – parent; former Georgia PTA President

Kathy Hildebrand – retired mathematics teacher

Jonathan Jones – school board chair, parent, and business and industry (Tift County Schools)

Anne Kaiser – Vice President, Community & Economic Development (Georgia Power); former Chair of TCSG's board

Isabella Martinez – student (Bryan County Schools)

Madaline Price – student (Ware County Schools) – Mille Price (mother and STEM teacher)

Jane Robbins – concerned citizen

Christopher Sanders – nonprofit executive (East Metro Community Improvement District)

Teri Sasseville – parent

Michelle Smith – retired teacher

Walter Stafford – business and industry (WLS Construction)

Lori Talbert – business and industry representative (Lexicon Strategies)

Samuel Teasley – state government

Grant Thomas – Director of State Relations (USG); former education policy advisor for the governor

Amy Williams – retired teacher

Barbara Williams – Mayor of Fort Valley

Citizens Review Committee Feedback

Committee members provided detailed feedback and comments to the Georgia Department of Education regarding revisions to the K-12 Mathematics Standards by answering three questions.

- What are your first impressions?
- Are there any clarifying questions that you have?
- Do you have any feedback or recommendations?

Three breakout groups were formed. Each group rotated through grade bands K-5, 6-8, and high school. The feedback is included in the tables below, organized by questions and grade bands K-5, 6-8, and high school.

Kindergarten through Fifth Grade

| What are your first impressions? | Are there any clarifying questions that you have? | Do you have any feedback or recommendations? |
|--|---|---|
| Impressed with balance between using traditional methods and understanding why they work! Have been unbalanced and now seems more balanced. Adding-carrying and subtracting-borrowing (example) is balanced with why both logical and geometric representation. Both understanding and procedure are important. | Is Kindergarten aligned to what the pre-K expectations are? | |
| Ease of basic language. Clean and concise. Major reduction in number of standards. | | |
| The standards should make it clear not just that the standard algorithm (SA) is “OK” to use, but that it must be used, as early as Grade 2. Alternative methods should be available | No mention of it until 5th grade, which is way too late. Should be mentioned in the beginning (outset). | Need to be careful that all of the other strategies are ok and that standard algorithm can be used. Need to learn standard algorithm. |

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| <p>to help students who are struggling with the SA, but it should be clear that grasping the SA as soon as possible is the goal.</p> <p>It's not clear to the non-math person that students are learning their multiplication tables in Grade 3. Make the standards document more accessible to parents.</p> | <p>Standard algorithm needs to be the bottom line.</p> | <p>We need to be building this around the standard algorithm.</p> |
| | <p>Multiplication tables (facts)? Is this the numerical patterns related to multiplication</p> | |
| <p>Standards are clearer and more concise and developmentally appropriate. Standards are more fluid from K-5.</p> | | |
| | <p>We don't want things that are difficult to understand (non-standard units).</p> | |
| | <p>Where is multiplication and division? Is multiplication and division in the standards? Where is it?</p> | |
| | <p>Do we rely on devices (calculators) more than the brain?</p> | <p>If something is introduced, it should be in the learning progressions.</p> |

Grades Six through Eight

| What are your first impressions? | Are there any clarifying questions that you have? | Do you have any feedback or recommendations? |
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| <p>More understandable. Appreciate the terms used.</p> <p>These standards will be easier for parents and teachers to understand.</p> <p>Appreciate how much the teachers were involved in this process compared to the last set of standards as well.</p> <p>It will be a lot easier for students to understand what they're supposed to be learning and how well they're grasping the concepts.</p> | | |
| <p>Parent: every concept builds on another concept. This will make it easier for parents and students.</p> <p>Can tell there was so much thought put in this. Input given.</p> | | <p>There's so much "explain your answer." Use where it is helpful to kids. If students can show their thinking by showing their work, they shouldn't have to also include it in word form.</p> <p>Textbooks should follow the curriculum that we came up with.</p> |
| <p>Love that we're tracking back what's needed to build. If there's a problem in learning, we can go back and see where the concept was learned and in what grade. Helpful for transient students.</p> <p>We've lacked that clarity in the past.</p> | <p>Are we implementing the use of data software when plotting, graphing, and statistical research? +2</p> | <p>Addition of resources for parents and teachers.</p> <p>Inclusion of how best to convey the mathematical information you are reporting in your answer.</p> |

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| Like the learning progressions. | | |
| <p>Traditional methods are not forsaken.</p> <p>There's a balance between new ways of looking at things and the traditional ways.</p> <p>Accessible for parents</p> <p>Nice to see I recognize everything.</p> <p>Looks like 8th grade is Algebra I.</p> | <p>Are kids divided in Georgia based on mathematics ability or does every student learn the same thing? Are the standards the same for all students in 8th grade?</p> <p>Are 8th grade students calling their class Algebra I?</p> <p>Do kids realize when they're learning Algebra as they're learning it?</p> | |
| Like that the new process will allow teachers to build their lesson plans easier than before. Teachers will still be able to build in their own personal creativity but know for certain what they need to teach. | | |
| Really impressed with the well-reasoned and logical progressions from grade to grade. | | |
| Concerned with no mention of standard algorithms. The current standards stated standard algorithm. By 6th grade (at least the very latest—4 th , 5 th is better) students should be using exclusively the standard algorithms. | | The current fluency standard in 6th grade is better for math education than the proposed student-generated standard. At least with respect to the standard algorithm. |

High School

| What are your first impressions? | Are there any clarifying questions that you have? | Do you have any feedback or recommendations? | |
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| Amazing work to reduce the focus down to the critical components. | | | |
| The streamlining is wonderful. To the point and substantive. | | | |
| | At what point in the HS math curriculum will they incorporate real-life programs? (i.e., taxation, entrepreneurial skills, business skills) | | |
| | Is there any discussion with the University System of GA to ensure that incoming freshmen are adequately prepared, eliminating the need for remedial math courses? | | |

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| | Are public school students divided into different pathways? Do all students progress through these courses? Do all students have access to pre-calculus and calculus? | It's good for students to be able to verbalize what they are learning along the way (i.e., be able to answer "What is trigonometry?"). Students need to step back and be able to see the "forest." | |
| The way the progressions are aligned, clear, precise, clean-up, it's easier to understand (as a teacher and a parent). | | | |
| The details and objectives make it clearer for teachers and parents. | | | |
| | Do these standards move Algebra I to 8th grade so that students can take Calculus by their 12th grade year? Not just for accelerated students, but for all students who want to take Calculus? | | |
| As a parent, it does seem clearer. | | | |
| Moving into more data rather than teaching just the traditional basics. Concerned about the shift to workforce | | Is there a way to guide students who are doing well in the required courses to go to higher math offerings, such as AP classes? | |

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| <p>development and job training. Are we narrowing what students will be able to do by teaching them more data versus the traditional basics? Sounds like a limited focus, job training.</p> | | | |
| | | <p>On data reporting, are we going to correlate data software with data reporting? i.e., running regressions and creating graphs using Excel or other software so they can step right out of high school and create reports.</p> | <p>Resources for homework and activities. A handful of vetted resources that teachers can have at their fingertips.</p> |
| | | <p>There needs to be progressions so that students can take AP courses. Technology should be provided to students in all areas of the state.</p> | <p>For mathematical reporting (specifically creating graphs and reports), students should learn to use a variety of programs such as Excel AND Google, not just one program.</p> |
| | | <p>Data analytics is essential.</p> | <p>Hope the textbooks and resources will complement the curriculum.</p> |

Citizens Review Committee Reflections

As a summary whole group activity, committee members provided key takeaways from breakout group sessions as well as reflections on K-12 mathematics. These observations are captured below.

Technology – making sure that technology is being integrated into classroom. Students need to know when to use technology and how to create different charts and graphs and when to use the different charts and graphs in different situations.

I am concerned about making sure the standard algorithm is the foundation of math, and that it's not just left to a choice. The standard algorithm is absolutely critical to greater math. Algebra also needs to be offered in 8th grade.

I am concerned with how this is to be communicated to parents. I want to know that my kid is going to know her multiplication tables in third or fourth grade — whenever they should. I just think we have to look at how this is communicated. Concern at the elementary level, for me. I don't know how this will be taught, but will there be a lot of emphasis on word problems? That was a big problem for a lot of parents. Will textbooks be aligned to this curriculum?

The traditional shouldn't be forsaken, and I really have been impressed that you didn't forsake that. As far as I can see from the elementary, when they were adding and subtracting the multidigit numbers, they still did the carrying and the borrowing that we did when we were kids. Then they also showed by using other methods why that worked — and I do think that when I was a kid maybe I didn't understand why it worked. But once you see, both geometrically by shading and by using the tens and the units and so on... Once you see why it works, then you don't have to keep doing it that way every time. And that's what I think people got frustrated with common core. They had to do it the long way every time to show why it works. Once you see why it works, then you've earned the right to just do it and use the traditional method that all of us have used. Same with the quadratic formula: once you've derived it, you've earned the right to use it. I think there's a good balance there in what you all have done.

After suffering through the educational malpractice of Common Core, as a teacher and as a grandparent, I'm happy to see a complete overhaul and revision of English and

math standards. This far exceeds and surpasses my wildest expectations. I'm just tickled to death with what I've seen here from an educator's standpoint and as a grandparent.

As a parent, I just want to thank everyone for the thorough work on all of this. My biggest concern, right now, is with students and newer teachers transitioning from Common Core to our multiple ways. It's great that we can rewrite this and it's great that we'll be teaching old-school again, but the transition for some of these kids is going to be tough. I'm experiencing it right now with pulling my kid out of public school and putting him into private school. I don't know how that is going to work.

I want to also thank everyone for their hard work on this. I have been kind of the curmudgeon in our group because we have one shot at this and I want to make sure we turn over every rock and find every possible way that this could be derailed from the way that we all want it to go, which is in the direction of better math standards. All of my concerns have been reflected by all of these previous comments. We need to get back to the standard algorithm. We need to make sure Algebra is taught by the 8th grade. And we need to get back to the basics. We also need to be careful about how we communicate it, but we need to communicate it honestly. There are some trigger words that set me off today. I don't like the things that indicate that we are doing all of this for industry and workforce, because these are children. They are not members of somebody's workforce. We do not, as mothers, go into labor to deliver products for the workforce. This has been the overarching philosophy of Common Core, and it's one of the reasons we all hate it because if that's the philosophy, the product turns out to be what it has turned out to be. And we see that it is not teaching math, it's not teaching English, it's not teaching any of the things. It's teaching in ways that are productive or particularly valid from the standpoint of what you would refer to as classic liberal arts education. So, all that said, I have concerns. Are we going to be able to get textbooks aligned to new standards? It's good that the traditional not be forsaken because the traditional has gotten us where we are now. Math is math.

Parents need to be given the terms and descriptions of basic math terms — numerals, number lines, even numbers — definitions of some of these terms because some parents don't have the education background. We need to train parents and somehow do the definitions in the standards.

If both of my son's second-grade teachers could give us an hour and a half course to teach us how to learn the Common Core math, I'm sure we could come up with something for the new standards.

I just want to thank the board members. Thank you for giving us a voice. I just hope we can get this through immediately. There have been so many students and teachers that have been damaged from this curriculum.

From the beginning, the current standards needed clarity. Put it at a level that I can understand it as a first-year teacher and a parent can understand it. We've been fighting for that all the time — standards with clarity and resources to align with it. We need to give our kids the fundamental skills that make them able to go out into the world and be literate and skilled and whatever. But there are fundamental things that students must know in math and in language. That is something that I will continue to push for, those fundamental skill sets with the clarity. All of you who have put in all the time and work — all the teachers, I am so impressed. Thank you! Feel free to contact us. We are there to serve you.

Thank you to everyone for participating in this committee. Thank you for your input and comments. As a teacher, parent, and grandparent, it's very important for us to get this right. As we continue to update the standards, it's important that we do a better job each time. We need to make sure that our students are getting all of the skills and all of the education that they need to move forward and be successful for life and career. I thank the people at the DOE for everything they are doing.

Students ask, "When will I ever use this?" My response was always, "Never, if you don't learn it." Some students don't know in 8th grade how many doors are going to close to them if they don't take some of these classes. They think they're going to be a doctor or something. So if we could just answer them in that way — "You'll never use it if you don't learn it." And you close doors if you don't learn it. I hear that parents don't like word problems, then I hear them say we need to be practical and teach when they're going to use this, and I think word problems are as close to everyday life — maybe they need to be more practical word problems, but I think word problems. I'm big on practice, you know, practice solving equations, but some word problems at the end is when you're going to use it. You don't wake up in the morning and see a yard full of equations. Word problems show when we use it.

We are charged with making learning meaningful in life. That's with math and everything else. When we go on vacation ... we have teachable moments. K-5 students can figure tips when you go to restaurants. Create teachable moments. I like to see my grandchildren beat me at mind games. Learning has to be meaningful.

Following the January 27, 2021, meeting, additional committee member feedback was received by the Georgia Department of Education and is provided below.

- The list of “mathematical practices” are too general and seem disconnected from the rest of the standards and concepts. Should instead be included and woven into the training and instructional supports.
- Great work on the wording for K-8, but can the language of the standards be examined for the high school courses?
- Concern that Algebra II has a lot of statistics — that additional content seems like a disconnect from the rest of the course; should be a more algebraic course.



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