

**Math Questions and Answers:** Received September 27, 2007 during the J.C. Booth Math Night and follow-up questions received within two weeks of the meeting.

1. Are traditional algorithms still a central key to learning how to solve a math problem?  
Are we making sure students can answer math problems as quick as possible so they are prepared for national standardized tests such as the SAT?  
Learning how to solve a math problem is computation and rules within the context of “doing mathematics”—students are exploring, investigating, explaining, figuring out, making sense of the mathematics in the problem and not just memorizing rules and procedures.

2. Are supplemental materials being developed and shared among our Fayette County schools?

Yes.

3. How are you going to address the learning needs of the child who doesn't fit the mold? You obviously have programs in place to address the "average" student and the math-gifted student. But, the "above average" child (the one mentioned in the meeting as the one "good at math") is left behind.

Prior to 2005-06, the “math-talented” student in a Fayette County middle school studied 6<sup>th</sup> grade Pre-Algebra, 7<sup>th</sup> grade Alg. 1, and 8<sup>th</sup> Grade Geometry. That means that student completed Alg. 1 and Geometry by the end of the 8<sup>th</sup> grade and started 9<sup>th</sup> grade in Alg. 2.

“Above Average” students in a Fayette County middle school studied Pre-Algebra in the 7<sup>th</sup> grade, Alg. 1 in the 8<sup>th</sup> grade and started 9<sup>th</sup> grade in Geometry.

Today, in the Georgia Performance Math Standards, all students now study what was Fayette County’s math-talented path! So, now the “above average” student studies what was the math-talented path.

In the math GPS, all students learn the concepts of Alg. 1 and Geometry by the end of the 8<sup>th</sup> grade year and begin the 9<sup>th</sup> grade year studying the concepts of Alg. 2 integrated with Geometry and Data Analysis.

4. What other programs were seriously considered and investigated? TMP? Saxon? Others?  
The textbook committee did not review “programs” but reviewed textbooks from 3 publishers: Prentice Hall, McDougal Littell, and Holt.
5. What happened to the 4th track in high school? (Core Math I...) This was an opportunity for "challenged students" to find success, wasn't it?  
The State Board of Education accepted the recommendation of the State High School Graduation Committee and on Sept. 13, 2007 removed the Core Math courses from the high school curriculum. The other paths remain the same.
6. Where do I find the "success stories" for CMP? I'm not talking about the large improvements seen on other states' equivalent of the GA CRCT; I've found those. I

cannot find documentation of statistically significant gains made on national standardized tests.

Prentice Hall publishes a Research and Evaluation Summary of the Connected Mathematics Project.

7. Given the fact that Japan is now reducing the level of math difficulty and beginning to reduce school hours (they far exceed ours), do we really want to hold them up as the perfect example of how to do it right??

Question for the State Department of Education. Contact Dr. Sue Snow at [ssnow@doe.k12.ga.us](mailto:ssnow@doe.k12.ga.us) or 404-657-7838.

8. It was mentioned more than once that the teachers are working hard to become familiar with the new curriculum. We have some wonderful teachers at Booth, but experience with a particular curriculum usually makes a better teacher. As the parent of an 8<sup>th</sup> grader, I am worried that seven years of my child's math instruction will be taught by teachers who are most likely teaching a new and unfamiliar curriculum. Was this considered when determining the implementation schedule of the new curriculum?

Question for the State Department of Education (Dr. Sue Snow at [ssnow@doe.k12.ga.us](mailto:ssnow@doe.k12.ga.us) or 404-657-7838)—they set the implementation schedule.

9. Why is the Partner Quiz used as an evaluation tool and how often will they be taking Partner Quizzes compared to other, more child-specific, methods of evaluation?

If a teacher chooses to use the partner quiz, there is only one partner quiz per unit. Students work with a partner and each student must turn in their own paper. When the students disagree on the solution, they indicate so on the paper, and the teacher grades that question individually for each student.

10. Since my child is in this program I really would like to find some evidence that CMP has been used successfully. Where can I find impartial statistics on the success or failure of the Connected Math Program?

See #6.

11. There are Georgia approved books on the US Dept of Education's list that have a better improvement index than CMP. Why aren't we using them?

The Fayette County School System uses the Georgia Department of Education List of Instructional Resources.

12. Can you direct me to some impartial numbers that show CMP has had positive results for a demographic similar to Booth's? (I am assuming that the US DOE/Institute of Education Sciences can be considered accurate and impartial, but please let me know if that is an incorrect assumption.)

A review of research by individual schools was not conducted.

13. During Ms. Ridgeway's presentation she displayed numbers and statistics that showed Georgia students are behind the nation in math. Shortly after that she displayed the Connected Math curriculum which showed that the Booth 8th graders are using a Connected Math 7th grade book. CMP actually has a -2 average percentile point improvement index on the US DOE site. Will we close the gap we have with most of the nation by using Connected Math?

*Connected Math* is only one of several resources we are using to teach the Georgia math standards (see #34), and we expect to increase student achievement in

Fayette County.

14. Ms. Ridgeway discussed the make up of the evaluation panel, but is there any documentation around detailing the evaluation process and exactly why CMP was selected over other choices that met the required Georgia standards?  
Yes, the math textbook adoption committee documented their initial evaluation of alignment to the math GPS using a rubric made up of each standard and element, the teachers in the school then used a rubric to evaluate the rigor and depth of content, the development of conceptual understanding, the balance of assessments, support suggested for all learners, and the use of performance tasks.

15. What happens if a student does not “master” a concept?

Because students master concepts at different times, no matter which curriculum is being taught, they are given more than one opportunity to study the concept—the course itself spirals within the year, students receive an additional period of support through Math Connections, through the After School Reading and Math Program (ARM), through daily warm-ups, and through Warrior/Cat/Paws/etc. time.

16. What does brain research tell us about developmentally appropriate content?

**Brain research tells us that content is best learned when the readiness of the student and the content are aligned. It also tells us that long term retention of learning occurs when students can make connections from old learning to new learning. And brain research tells us that learning best occurs when content is not taught in isolation but in an authentic context.**

17. How will this curriculum address those students that are already struggling with math concepts and the expectations of completing 4 years of math in high school?

Students will be offered a course called Math Support that is taken along with their regular math course.

18. Can a student reach a conclusion to a problem without educator input?

Teaching does not mean providing a problem or task, sitting back, and waiting for magic to happen. The teacher structures a lesson by getting students mentally prepared to work on the problem or task, making sure they understand the task and what is to be done. Then students are given the opportunity to use *their* ideas and not simply follow directions with the teacher listening, providing hints and suggestions, and asking them questions, such as “Why do you think....?”, “How can you check that?”, “What if you tried....?”, or “Would the same idea work for....?” At the conclusion, the teacher engages the entire class in productive discourse, making sure that the main and important ideas are brought out for all

students.

19. If students are not taught basic formulas, how can they be expected to know how to solve complicated math word problems?

They are taught basic math formulas.

20. What are the average scores of Fayette County students (Math) on the SAT?

537 in 2003; 537 in 2004; 547 in 2005; 533 in 2006; 529 in 2007.

21. Do Elementary school kids memorize basic facts in the new math program?

Yes, memorization with understanding.

22. How did TIP scores for math for last years 7<sup>th</sup> graders compare with the old curriculum year's scores?

This information is not available.

23. How do we get off the accelerated path?

Write a letter indicating that you would like your child removed from the accelerated path..

24. Has the SAT/ACT been realigned to match these standards like the CRCT or will our children struggle with a timed test based on nationally normed standards?

The CRCT is a state assessment of the state curriculum, therefore it is aligned to the state curriculum. The SAT and ACT are national assessments and are not aligned to any state's curriculum. The College Board has reviewed Georgia's new math curriculum and has endorsed it as appropriate preparation for the SAT.

25. How do changes in course names (Math 1, 2, 3, and 4) affect college admissions. Colleges still require traditional course names for admissions so will our kids be penalized?

Colleges do not require traditional course names. Course titles have always varied across the nation—titles of Math 1, etc. are not new. Transcripts of Fayette County students will have an attachment of the course descriptions to clarify to the receiving party the content of each math course on the student transcript.

26. Where can I find the statistics that show that the CMPZ has improved SAT scores?

See #6.

27. During the book adoption process, was anyone (parents, teachers, BOE) informed that the new connected math 2 books strongly emphasize group work and the discovery method?

All Fayette County middle school math teachers reviewed the textbook series in their own school during December 2006 and January 2007. Additionally, our teachers have had 4 opportunities of training about the textbook resource. Also, each middle school principal and assistant principal in charge of curriculum as had training on the textbook resource. The community was offered the opportunity to review the textbook series for 30 days beginning Feb. 13, 2007.

28. My 8<sup>th</sup> grader has not had a textbook in 3 years! Will the new group of students get textbooks?

All students now have textbooks.

29. How much training have the teachers had in the new math instruction?

Our teachers received 4 days of training on the math GPS. They have also had 4 opportunities for training on the textbook as resource.

30. Using the ladder method. What happens if a child is weak on rung 1? Will he be able to grasp rung 2? Does one grade level do better than another using the new the "new math"? Are their check in place (in addition to traditional testing) to expose thorough understanding before proceeding?

The curriculum spirals within the year. Teachers use both summative and formative assessments to check for evidence of learning.

31. How long will we be expected to "try" the new math if standardized test scores significantly drop? Most people are expecting low (or lower, anyway) CRCT scores.

Question for the State Department of Education. Contact Dr. Sue Snow at [ssnow@doe.k12.ga.us](mailto:ssnow@doe.k12.ga.us) or 404-657-7838.

32. Is the new math geared toward the strong or weak math student? Which one does it favor?

The curriculum is written for all students.

33. It seems like math goes from one extreme to the other. Why go from 100% lectures and "drill and practice" to 100% group interaction. How about a compromise?

Our teachers use a balance of direct instruction and facilitating student investigations of problem-based tasks.

34. What is the name of this program and where else is it used? What is its success rate?

The curriculum is titled the Georgia Performance Standards in Mathematics. One of the instructional resources our teachers use is *Connected Mathematics*. Other resources our teachers use are *Balanced Assessment for Middle Grades Math*, *A Collection of Performance Tasks and Rubrics for Middle School Math*, *Teaching Student-Centered Mathematics*, the Fayette County system-wide teacher developed *Math Curriculum Guide* for their particular course, and the State Department of Education *Frameworks*.

35. What culture studies have been done to suggest that because Asian children are disciplined and self directed that American children are also disciplined and self-directed?

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36. How are groups directed so the one child isn't always giving the answers to the other children?

Teachers give thought into how students are paired so that there is a balance in ability level.

37. Will the teacher teach less in the new CWP?

No.

38. How is the High School adapting to the new math program? Will a student who wants to advance in Science be prohibited from taking advanced classes because they have not met the math prerequisite?

The math standards are not implemented in the high school until next year. Because the high school students will have completed their study of Alg. 1 and Geometry concepts in the middle school years and will begin their study of the concepts of Alg. 2 along with more Geometry and Statistics in the 9<sup>th</sup> grade, they will be prepared for their high school Science courses.

39. Are there any new High School handouts showing the different math tracks like there were for "Core Math I, Core Math II etc"? What happened to 4<sup>th</sup> track math for High School?

See question #5.

40. People are saying that this new program is good for the exceptional math minded student and the average student. What about the above average "very good" math student?

See question #3.

