SUMMARY
In 2015, in response to feedback from teachers, parents, and other stakeholders, the State Board of Education approved efforts to examine and revise mathematics standards in ways that would best serve the students of NC. Educators from across North Carolina including high school teachers, higher education partners (both four year and community college), business community partners, the PTA and the general public were involved in the development of these standards. After feedback from each district in NC, the final set of standards were put forth and unanimously approved in June, 2016 for NC Math 1, 2, and 3 and are now a part of the NC Standard Course of Study (NC SCoS) for mathematics. The new standards provide greater clarity to teachers and will support NC students in preparing them to be productive citizens and competitive in the workforce and higher education.

Q1. What are the NC Mathematics Standards and where can I find them?
The standards are organized into two sections, Content Standards and Standards for Mathematical Practice. The Content Standards outline the mathematics to be taught at each grade level. The Standards for Mathematical Practice are a set of process standards that outline the experiences and dispositions that NC students should develop over the course of their K-12 mathematics education (e.g. problem solving, quantitative reasoning, mathematical modeling). The NC mathematics content and practice standards can be found at http://maccss.ncdpi.wikispaces.net/High+School.

Q2. What does NC Math 1, 2, and 3 mean? Where did high school algebra and geometry go?
When NC revised the High School Mathematics Standards, we made the decision to offer high school mathematics in a connected sequence of courses called Math 1, Math 2, and Math 3. This means that students get connected bits of geometry, statistics, algebra, measurement, and number sense every year, similar to grades K-8. This sequence of courses is called an integrated approach to high school mathematics rather than the traditional track (i.e., Algebra 1, Geometry, and Algebra 2). The integrated track had been offered in NC for years, but the high school standards task force recommended that ALL students take the integrated track. Research informed our decision because it shows that students who partake in an integrated track perform as well or higher than students in traditional mathematics courses.1 Students who take integrated high school mathematics are just as prepared for college, including the STEM fields.2 Countries that outperform U.S. students in mathematics use an integrated approach. Finally, minority and economically-disadvantaged students perform better when taking an integrated track.3

Q3. Are the new standards less rigorous than the old ones?
No. We have learned over the years is that NC taught too many topics in each grade and students were getting only a surface level understanding from year to year. The NC Mathematics Standards focus on fewer topics, with more depth of understanding. While there are fewer topics, the topics that are present in the standards are the mathematics needed for college and workplace success.

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Q4. How is mathematics different for my child than when I was in high school?
Computational skills remain an important instructional component throughout K-12 mathematics education in NC. In addition to computational fluency, and to best prepare students to be global citizens beyond high school, instructional focus is also placed on conceptual understanding of mathematics. Specifically, students are to engage in mathematics that provides them with opportunities for critical thinking, reasoning, and collaboration to solve problems in ways that connect their computational understanding of mathematics facts to underlying concepts. What this means is that your child will still learn the basic skills and some formulas you may have done in high school, but more focus will be placed on their ability to interpret a problem, determine possible solution methods, solve problems, and justify the correctness of the solution while working with others.

Q5. Why do students have to know more than one way to solve a problem?
Clear communication and collaboration are important skills for 21st Century citizenry. This entails being able to look at a new problem, create a solution to it, and communicate one’s process to a peer, teacher, supervisor or client. In reality, there is often more than one solution to a problem as well as multiple ways to solve it; therefore, students must become accustomed to analyzing a problem from more than one point of view as well as be able to interpret the strategies of their peers starting at a young age so that as learning progresses, communication and collaboration come naturally when new content is introduced.

Q6. Why does my child have to explain his thinking, isn’t the answer good enough?
In the past, we only had content standards, but there is now a set of practice standards as well, both in NC and across the country. NC Content and Practice Mathematics Standards present a balanced approach to learning mathematics. They emphasize both knowing procedures and facts as well as the development of an understanding as to why those procedures work. In the workplace, it is becoming increasingly important to be able to ask questions, create multiple solutions to the same problem and communicate those solutions to a boss or client.

Q7. With these new standards, why am I unable to help my child with her homework?
Because a different type of mathematical reasoning is required to be a productive 21st Century citizen, your child is going to explore mathematics, not just memorize, and this is different than when we were children. The NC State Standards do not determine what homework problems teachers assign, but rather recommend problems that teach both calculations and meaning. The NCSoS is also not a textbook or set of materials that teachers must use in their classrooms. Rather, they are a set of mathematics content and practices; teachers are encouraged to use instructional materials they choose.

Q8. Then, how do I help my child?
Most children are quite capable of learning mathematics with meaning if they have the support from home and school. Let students make mistakes on homework. Encourage your child to talk with you and explain what he recalls from class and what he thinks the method should be. Emphasize that the process for solving the problem is as much learning as is getting the right answer. Let his teacher know if he is “stuck” on a homework problem and you cannot figure it out together. Also, remind your child that being good at mathematics is not about speed, but about asking questions and solving difficult problems.

Q9. My child receives a lower grade if she doesn’t show her work? Why can’t she do it the way that works for her?
Your teacher may be encouraging your child to be able to make sense of an important concept she is learning and, therefore, checking for understanding in multiple ways. There is no State requirement to tie grades to specific strategies. The best way to understand grading is to have open and honest discussions with your child’s teacher. Ask as many questions as you need to in order to understand.

Q10. But what about testing?
The decision to have end of grade (EOG) achievement tests and the use of these scores to hold students and teachers accountable is a decision by both federal and state lawmakers. As the standards are reviewed and revised every five years in North Carolina, tests for students are revised to align with standards. North Carolina creates our own set of assessments to reflect better the NC Standards and the needs of NC students.