Q: Can you explain the difference between the Algebra Pathway and the Geometry Pathway?
A: The 6th-12th Grade Pathway is posted on the D109 website and can be found [here](#) (also found on slides 12 and 13 in the presentation linked above this Q&A). All students are either on the Algebra Pathway (taking Algebra in 8th grade) or the Geometry Pathway (taking Geometry in 8th grade) when entering middle school. Both pathways will provide students with the option to take AP Calculus by their senior year (found on slide 14). The high school course sequence has been included through collaboration with District 113. There is no district direction to eliminate either pathway.

Q: What does differentiation look like in the classroom?
A: Teachers are utilizing and/or receiving support to implement the [workshop model](#) to differentiate the lessons taught. The teachers use small-group time to provide extensions or support to groups of students around the content. Teachers also have a digital version of every grade level book; therefore, above and below grade level content is accessible. The learning progressions (found on slides 7, 8, and 9), as well as pre-post assessments can be used in order to provide targeted instruction. Our Math Curriculum Specialist and instructional coaches are also sharing vetted research-based resources with teachers to further supplement instruction.

Q: How is the district specifically differentiating for 4th and 5th grade in preparation for the two middle school pathways?
A: Teachers in 4th and 5th grade have access to a more detailed learning progression. This progression allows teachers to compact instruction for students, as needed, and provides teachers with aligned lessons directly from Big Ideas (found on slide 9). Note that while still receiving the common point of instruction, students may be working on different standards during independent practice/small group time. While TAP continues to be in place for 5th grade, each elementary school has an Advanced Learning Specialist to support small groups in 3rd and 4th grade classrooms.

Q: How much of the “independent practice” or “stations” is online/screen versus paper or face-to-face learning?
A: After the mini-lesson (found on slide 5), students have access to multiple forms of practice to reinforce the skills being taught. Students have access to a digital component, and also individualized practice pages, small group differentiated mini-lessons, and hands-on activities daily that are not on a device.

Q: What is the process for placement for high school math with this new math program?
A: We will be looking at multiple forms of data such as MAP scores, summative assessment scores, score on the PSAT, and observational in-class data. Representatives from District 109 will be meeting with representatives from Deerfield High School within the next few weeks to further discuss placement criteria.

Q: Do teachers feel confident they have the skillset to work with large groups, advanced classes, or kids with various learning abilities?
A: Teachers are constantly learning new instructional strategies and techniques to meet the needs of diverse learners in their classrooms. Middle school teachers in both pathways have access to a Math Curriculum Specialist and a math coach. An interventionist and coach are also available at both Caruso and Shepard for students requiring continued support. Elementary teachers also have access to the Math Curriculum Specialist and two instructional coaches per building.

Q: What are the three most substantial changes with this system compared to what we’ve used previously?
A: First, teachers are now using a comprehensive, research-based math curriculum due to the adoption of *Big Ideas*. This also provides teachers with access to common pre/post assessments. Second, the Workshop Model is being utilized for differentiated instruction. Finally, expanded access to rigorous curriculum has been added through the development of the Algebra and Geometry pathways.
Q: How will teachers grade student work, per semester/trimester, using the priority standards?
A: Teachers will assess all priority standards taught within a given semester/trimester. Some standards will be taught in a single trimester/semester, while others may be revisited again throughout the year. For example, 5.NBT.7 is a priority standard that will be seen more than once. It reads: Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. A teacher may assess addition and subtraction in one trimester, and multiplication and division will be assessed later.

Q: Can you explain how kids are placed during small group instruction?
A: Teachers use various types of assessment (entrance and exit slips and/or pre-post-tests) to place students into small groups for differentiated instruction. Interactions during the mini-lessons and student self-assessment also provide teachers with insight into a learner’s mastery of content. The workshop model (found on slide 5) has students spending approximately 30 minutes in stations and guided groups, which are fluid based on their understanding of content at a given point in time.

Q: How is MAP data used for grouping?
A: NWEA MAP is a benchmark assessment administered three times annually. It does offer insight into a child’s understanding of mathematical strands, including identifying areas of strength and areas for growth. This information is often used to establish initial groups, however, teachers rely on the items referenced in the previous response to establish differentiated groups on a more regular basis.

Q: How does the teacher assess the individual work of every student?
A: A teacher will use various pieces of evidence to best understand a child’s learning. Some examples include, unit pre and post assessments, entrance/exit slips, homework, math notebooks/journals, and conversations during the lesson or small group. Some items will be looked at closely to understand a student’s precise mastery of content. Other items may be reviewed with the child so the teacher hears and sees the student’s understanding to know where extensions and/or support may be needed. The latter often occurs naturally during the small group or independent work time.

Q: How will the success of the math program be measured?
A: The Teaching & Learning Department is committed to seeking qualitative feedback and reviewing/analyzing quantitative data in order to measure the effectiveness of math programming. A needs assessment was conducted last fall (2018), of all K-8 math teachers. This data was analyzed by a math committee and utilized when choosing curricular resources to meet the needs of District109 students. In addition, the department regularly analyzes student growth and proficiency data, which includes performance on math pre-post assessments, NWEA MAP, and the Illinois Assessment for Readiness.

Q: Can we download the digital portal on a personal iPad?
A: The full digital portal is not available for download on a personal device. The student will only have access to that resource through the district-issued device (Chromebook or iPad). The textbook is downloadable as a PDF.

Q: What kinds of questions should parents be asking kids about their homework?
A: Big Ideas has Success Criteria for each chapter and some teachers may be using a chapter newsletter provided by Big Ideas. All parents are encouraged to talk to their child(ren) about the content they are learning and the process they use for problem-solving. It is important to know that your child’s approach to mathematics may look different than just a simple algorithm. What is important is students’ ability to articulate how they are finding solutions and why the problem-solving process they chose works.
Q: My children are 4th and 6th grade. Both of their MAP math scores dropped by 10 points since last spring. To me that shows me that their math “gains” last year were temporary....they were not truly secure in their learning. My current 4th grader last year was allowed to progress significantly ahead of her class, which I was told would be great for her. Her MAP score shows me otherwise. She moved ahead but that was not secure learning. How do you know that a student’s learning truly is secure when one class has such a wide variety of students?
A: The best way to analyze MAP data is to focus on growth over time (spring-to-spring, for example). Factors that could explain a drop in RIT score are explained here, including summer regression, testing conditions, test engagement, and time spent on the assessment. A drop in RIT does not automatically equate to unsecured learning, however, building level teams review data regularly and have systems in place to prevent a negative trend in overall RIT score.

Within the workshop model, all students take a pre-assessment and participate in the learning (or re-learning) covered in a mini lesson. This allows the spiraling of important math content to be continuous. Like all learning, if something is not revisited, applied and practiced, it may be lost. We, too, want students to generalize concepts so that sustained learning occurs. Teaching math through both a procedural and conceptual framework supports student retention.

Q: Do you have quantifiable data to support the shift to two pathways in math vs three?
A: The review of math programming in 2016-17 was predicated on the following: 1) Only 26% of students in the third pathway of math were meeting or exceeding state standards, and 2) a review of educational research supported de-tracking efforts. As the district has phased in the two pathways of math, an opportunity gap for many of our students has been eliminated. Students formally identified for the third pathway, now given access to a more rigorous curriculum, have shown more growth. The other cohorts have maintained stable growth and achievement or have higher rates of growth. For more information on the history of our programming decisions and student data that has been presented to the Board of Education over the last two years, please click here.

Moving forward, in collaboration with Deerfield High School, District 109 will be coordinating success criteria around student readiness for Geometry (students in our Algebra pathway) or Algebra II (students in our Geometry pathway) in 9th grade. As another measure of the two-pathway model, we will be able to compare the number of students who previously started 9th grade in Algebra I, Geometry, or Algebra II with the breakdown this year. This data should be available by winter of 2019-2020.

Q: Can you help us better understand the support roles for math?
A: In our elementary schools, teachers have access to a/an:
- **Instructional Coach**: 2 per building
  - Collaborative Planning, Modeling, and Tier I support for all grade levels
  - Non-evaluative feedback for teachers
- **K-8 Math Curriculum Specialist**: 1 per district
- **RtI Specialist**: 1 per building
  - Provides Tier II/Tier III pull-out support for academic intervention
- **Advanced Learning Specialists**: 1 per building
  - Provides push-in support for 3rd and 4th grade classrooms
  - Teaches a pull-out math class, for students identified, in 5th grade
- **Advanced Learning Coordinator**: 1 per district
  - Supports Individualized Learning Plans for 3rd and 4th grade students who qualify
  - Assists intermediate grades by developing academic extensions

In the middle schools, teachers have access to a/an:
● K-8 Curriculum Specialist: 1 per district
  ○ Push-in support for 7th grade classrooms
  ○ Plans with teachers K-8 to continue to improve instructional practices and support student growth
● Grade Level Math Coach: 1 per district
  ○ Push-in/planning support for 6th and 8th grade classrooms
  ○ Plans with teachers to continue to improve instructional practices and support student growth
● Math interventionists: 1 per building
  ○ Push-in support for 6-8 math classes to co-teach and work with small groups
  ○ Pull-out support for students identified for tiered math interventions in grades 6-8
● A math support specialist (certified math teacher): 1 per district

Q: Where can we find which math Common Core State Standards are taught by trimester?
A: All grade-level curriculum maps can be located on the DPS website Teaching & Learning Department page.

Q: While I understand the value and importance of making sure that students are able to understand the “why” of a math algorithm, some of the examples shown on solving 27x4 is time consuming. When HS students need to take the SAT/ACT, speed becomes critical. How do you reconcile/teach a foundation that includes this aspect of mathematical problem solving?
A: It is critical that both the procedural and conceptual understanding of mathematics are taught. Automaticity is developed over time and is certainly important for efficiency. Also knowing the “why” helps students understand if/when an answer found with efficiency actually makes sense. Creating this foundation at a young age will help students perform at his/her best when tasked with learning more complex math concepts. Having both skill sets will ultimately result in improved performance on high-stakes tests like the ACT/SAT.

Q: What is the rationale for putting 50 kids in the advanced pathway in cafe for math lessons?
A: The teachers at Caruso are conducting the mini-lesson with their assigned students, about 15-20 minutes in length, in their individual classrooms. On occasion, they have found that moving groups of students to one another’s classrooms, the cafeteria, and/or the Learning Commons allows the teachers to more specifically target differentiated, small group needs. Up to four adults may be supporting the 6th grade team during their class period, allowing the 50 students to still be divided into small groups that are more conducive to targeted instruction.

Q: How do the videos being used connect to the Big Ideas curriculum?
A: Teachers will often use Khan Academy, TenMarks, Delta Math, or self-made videos to provide an additional or a different way of learning material. Some classrooms use a “flipped” model, where students have access to instructional videos to be watched at home. They then practice the skill/strategy taught through the video during the class period with the support of the teacher. Teams are continuing to update materials to align with the adoption of Big Ideas.

Q: What specific feedback is the administration getting from the elementary and middle school math teachers regarding how the new model is going?
A: There are varied views amongst our teachers. The majority have communicated that expanding access to both the geometry pathway and algebra pathway has been appropriate. They report that more students are successfully accessing higher levels of mathematics than in previous years. Some of our teachers continue to be concerned about a small cohort of students who struggle with the content and require additional support with grade-level standards. The middle school has appreciated having a dedicated math interventionist to help close the gaps for these learners. Generally, teachers across grades K-8 have expressed improved access to quality resources with the adoption of the new math curriculum.