Secondary Math Meeting Questions

Our Local Curriculum

Placement - there were several specific math placement questions that focused on ways in which a child could be accelerated or enrolled in advanced coursework. The district uses a variety of data to determine mathematics placement. Please discuss your individual concerns or questions with your child’s mathematics teacher and his/her counselor to determine the best placement for your child.

1. What happened to Pre-Algebra for grade 6 students?
   The Pre Algebra course taught all 7th & 8th grade standards in one year. This course was offered to both 6th and 7th grade students who qualified for placement. Pre Algebra has been replaced with Accelerated Core Math 7, which teaches all 7th grade standards and about ⅔ of the 8th grade standards. The remaining 8th grade standards will be taught in the Grade 8 Algebra 1 course, along with all of the Algebra standards. The greater focus of the new content standards make it difficult to skip any grade level. For a grade 6 student to be placed in the Accelerated Core Math 7 course, he/she must demonstrate algebraic aptitude AND show a minimum of 75% mastery of the Grade 6 standards.

2. Are all 9th grade students now being placed into Algebra 1?
   Yes. The exception is for students who did well in Algebra 1 in 8th grade. They would continue on to the next course - Honors Geometry. If they did not do well, then it is usually recommended that they repeat Algebra 1 - it is the “building block” course, and it is essential in future courses that students have a strong Algebra 1 foundation. Some 9th grade students are in Honors Algebra 2, as they did well in Algebra 1 in 7th grade.

High School Credits

3. I understand that 4 years of math are required in HS, but I only saw Algebra 1, Geometry and Algebra 2. What is the 4th class? Does anyone get Calculus?
   After Algebra 2, students next year can take Financial Algebra or Algebra 3 (Pre Calculus). Students who take Algebra 1 as 8th graders can take Calculus as Seniors.

4. Is Algebra included in 4 courses? If they take it in 8th or 9th grade?
   Yes. Students are awarded high school credit when taking a high school course while in middle school.

5. If they take Algebra 1 in 10th grade-how do they get in 4 credits?
If a student is enrolled in Algebra 1 as a 10th grade student, they should have received a credit for Foundations to Algebra as a 9th grade student. They will then take Geometry and Algebra 2 for the remaining credits. If the student failed math during his/her 9th grade year, they will either need to take a summer school course or enroll in two math classes in an upcoming year.

Transition

6. Have there been outcomes measured from this new method? How long has this style been in practice? Where is the documentation proving this is the most effective method of learning/teaching math? Please discuss the research that supports this process. 
   The research base can be found on the CPM website: 
   http://www.cpm.org/teachers/research.htm

7. Will the school system be watching to see if this new method is a success or failure? If so, when? Will you self-correct if it is not? What assessment does the district have in place to compare the actual learning taking place compared to learning that occurred before the curriculum change? 
   As with any curriculum, we monitor and evaluate it on an on-going basis and make adjustments and modifications as necessary. We use data from surveys and assessments, both at the teacher, student, and district level.

8. For a student who took Algebra 1 two years ago and is taking Algebra II this year how will they be assured to cover all of the material? What about remediation for students currently in Algebra 2 who did not receive the conceptual understanding, skill fluency, etc. in Algebra 1? 
   For this year only, the Algebra 2 curriculum will utilize two appendices to teach the concepts that have been moved to Algebra 1, since these were not part of current students’ Algebra 1 course.

9. Unfortunately incoming 6th graders have been taught towards the proficiency test leaving out many of the basics. How will these children get caught up so that they are successful as well? 
   It is our responsibility to prepare students to be successful in the next grade level. As we transition to one set of standards to the other, we have incorporated strategies, content, and resources to make the transition as seamless as possible.

10. There is a set amount of material that must be covered in a school year in each math class. While the students may learn well in the new format, what happens at the end of the school year when suddenly there are several sections or chapters left to cover and no time for “spiraling” of learning to take place? 
   The courses are designed for spiraling throughout the year and to complete the course requirements during the year. The new standards have
increased focus, which allows for more time to be spent on concepts for deeper understanding.

11. What will happen if the Common Core is eliminated, as politicians are trying to do?
We have adopted courses of study in mathematics that prepare our students to be college and career ready. Adopting these were a local decision. Any changes that we would make would also be a local decision. Additional information on the state standards and questions that address the debate around the standards can be found on the ODE site below:


12. If an 8th grader last year, a student did not have Algebra how will the apparent “gap” be filled given the new standard teaches Algebra in 8th grade.
WCS transitioned the 8th grade course to the new standards last year. All students enrolled in Core Math 8 during the 2013-2014 academic year should be well prepared for success in Algebra 1.

13. Is this “Discovery Learning?”
Inquiry Based Learning may be a better term. Students will learn the mathematics through problem solving - the ability to grapple with and come to a thorough understanding of the mathematical concepts provides a deeper understanding and gives students the ability to apply the concept to novel situations.

14. Give an example of conceptual understanding.
When looking at the equation \( y = \frac{5}{4}x + 15 \) a student might solve this by placing a point at positive 15 on the y-axis, the moving up 5 and right 4 or down 5 and 4 to the left to plot additional points, connect the points, and state that the line is the solution to the equation. However, a student with conceptual understanding will see that even with an input of 0, the output, or starting value will be 15. This may be a surcharge or a ‘start up’ fee. They will also see that with each increase of 4 in the input value, there will be an increase of 5 in the output value. Realizing that \( \frac{5}{4} \) is equivalent to 1.25, they can interpret the equation to mean that for every increase of 1 in the input value, there will be an increase of 1.25 in the output value, which is also interpreted as the unit rate. They can create a situation which is modeled by the equation, such as, **There is a start up fee of $15 for an initial order and each item will cost $1.25 to purchase.** They understand that points on the line represent the number of items and cost of that number of items.

15. We’ve heard a lot about abstract thinking...how does abstract thinking fit in with a concrete method like math?
Abstract reasoning involves analysis, synthesis, and evaluation of ideas. In
mathematics it may also involve developing a mathematical model to represent a particular situation. Authentic learning occurs when students move from the concrete to abstract. When mathematics instruction involves numbers and procedures alone, we are starting with the abstract. When students are exposed to concrete materials first (integer cubes, numberlines, algebra tiles), they are able to move from concrete to abstract; this allows students to develop the conceptual understanding necessary to retain and apply the mathematics to novel situations.

16. Does IB use the same team approach in all their courses If not, why not?
An overview of the IB programme can be found at:
http://www.ibo.org/myib/digitaltoolkit/files/brochures/IBDP_AP_EN.pdf - a quote from the site is below:
“The IB aspires to help schools develop well-rounded students with character who respond to challenges with optimism and an open mind, are confident in their own identities, make ethical decisions, join with others in celebrating our common humanity and are prepared to apply what they learn in real-world, complex and unpredictable situations.”

17. How do you differentiate for approaching level, or level beyond level?
Students are able to access the problems using a variety of approaches and starting points. Teachers differentiate for their students by the way in which they organize the groups, by the various questions they ask individuals, and the pace of a lesson. Please consult your child’s teacher to learn about specific ways in which he/she differentiates for your child.

18. What happens to upper class (11 and 12) who did not have the core spiral effect of background needed for their upper level courses?
The district has been purposeful in the transition to the new standards. Current 11th grade students enrolled in Algebra 2 experienced the new standards last year in Geometry and will be completing two appendices this year to account for the standards they did not experience in Algebra 1; current 11th grade students enrolled in Algebra 3 have followed our previous standards, since they are not governed by the new standards.
Current 12th grade students enrolled in Algebra 3, Calculus, Pre College, or Financial Algebra are continuing to follow our previous standards.

19. Is the content of Algebra 1, Geometry and Algebra 2 changing?
Algebra 1 now contains some material that was previously taught in Algebra 2 (sequences and exponential functions); Geometry is now taught from a transformational approach - proving similarity and congruence from a series of transformations; Algebra 2 includes a stronger emphasis on statistical
understanding; Parents may notice a shift toward function analysis and away from equation solving. The analyze of function helps to pave the road to calculus.

20. What courses are offered after Algebra 2? Are you able to take the time to address secondary mathematics beyond Algebra 2?
   After Algebra 2, students next year can take Financial Algebra or Algebra 3. Students who take Algebra 1 as 8th graders can take Calculus as seniors.

21. Is there a Financial Literacy course?
   All 3 high schools are offering a new course this year entitled Financial Algebra. This is a mathematics course which uses ideas of finance as the application. Financial literacy is also taught through our Government 2 curriculum, which is a graduation requirement.

22. Will all materials be ready this year (i.e., exams)?
   Common semester exams and final exams were created last year for Algebra 1, Geometry, and Honors Geometry. They will be revised and finalized by November and April, respectively. The district will also have common exams in place for Algebra 2 this year.

23. How much training have your teachers received in teaching this new method of math?
   Teachers attended a 4-day workshop during the summer of 2013 and had 3 additional days of professional development during the school year before implementing the new curriculum for Grade 8, Algebra 1, and Geometry. Another 4-day workshop was held during the summer of 2014 before implementing Grade 6, Grade 7, and Algebra 2. Teachers will continue with 3 additional professional development days during the school year, the first of which will be held during the September 12th Waiver Day. Ongoing professional development also takes place during the year through teacher observation and common planning.

24. Can we visit the classroom to see this style of learning in action?
   Please work through your child’s teacher to schedule observations.

25. What should you do if your student says their teacher doesn’t walk around, they are sitting at their computer not helping? Why does my daughter get a correct answer marked wrong because she used a method other than the one demonstrated by the teacher?
   As always, any time you have a concern about something happening in your child’s classroom, please start by talking to the teacher involved.