Math Sequence at Denver School of the Arts

Over the last several years, DSA has spent considerable time reviewing the content in our entire 6-12 math continuum. When examining data from district and state assessments, we suspected some disconnect in content, leading to gaps in student knowledge. Based on an examination of our math course sequence and our students’ performance assessments, we were able to draw root causes for these gaps: our students get too much breadth, not enough depth in many math concepts, and this causes them to struggle at higher levels of math, where depth of knowledge is critically important for students to develop the abstract thinking and reasoning skills required to be successful in higher level math classes.

As a result, Denver School of the Arts has adopted a specific math course sequence in order to better prepare our students for success in mathematics at DSA and in their future post-secondary work. We have three key components in our mathematics program: focus, coherence, and rigor. Our courses have a deeper focus on fewer topics, more coherence and alignment across grade levels, and more depth and rigor. This means that students are expected to demonstrate a deeper understanding of mathematics in each grade level, and will develop a better foundation for success in the next grade level and beyond.

It is also our belief that 6th grade, in particular, is a year of transition. The year is filled with the new experiences of middle school as well as the rigor of DSA – both in academics and in the arts. With this whole child model in mind, we want our middle school students to have the appropriate amount of time to transition into middle school instead of being rushed to higher levels in the academics while still being provided with time to explore their arts.

As a result, all 6th grade students are placed into our 6th grade math course. Those students who qualify, through a body of evidence, will be placed in an honors level 6th grade math class during the first four weeks of the school year. Both sections of this course will provide highly differentiated instruction designed to push each student to master fundamental math skills and prepare them for their 7th grade course work. Students will then follow the same path in 7th grade.

In the past, we accelerated students too early, causing them to be unprepared for advanced math classes in high school (even if they had been on this track during middle school). By ensuring that students have mastered conceptual, foundational math in 6th and 7th grade, we are ensuring that they will be ready for an advanced track in 8th grade and beyond.

After 7th grade, students whose 7th grade math scores indicate they are ready for high school mathematics will be accelerated into either Integrated Math 1 or Integrated Math 2, which cover the 9th and 10th grade math standards respectively. This acceleration will allow students to progress more quickly through the high school math courses allowing them options to take Advanced Placement Calculus AB and Advanced Placement Calculus BC or Advanced Placement Statistics during their junior or senior year. Students who are not ready for high school math beginning in 8th grade will take the standard 8th grade math course, which covers a rigorous set of state standards for eighth grade mathematics proficiency. Completion of this course will better prepare students to be successful in high school mathematics.

Our goal is to ensure that all students have a deep foundation in mathematical thinking that will allow them to be successful in calculus, either within our sequence of Advanced Placement courses or in college. The table below shows the placements for our student’s 8th grade school year - and what each means for math placement in high school.

**6th Grade 7th Grade 8th Grade 9th Grade 10th Grade 11th Grade 12th Grade**

6th gd math 7th gd math 8th gd math Math 1 Math 2 Math 3 Financial Alg

 Math 1 Math 2 Math 3 Pre-Calc Pre-Calc

 Math 2 Math 3 Pre-Calc AP Calc AB AP Calc AB

 AP Calc BC

Math 1, Math 2, Math 3 and Precalculus have honors and non honors options.

In closing, it is important to emphasize that any students who would have been accelerated in 6th grade according to our previous approach to math instruction will have a much stronger 6-12 experience in mathematics because of these shifts. They will reach the exact same goal, taking AP Calculus/AP Statistics in high school, but will be more successful after building a stronger foundation in 6th and 7th grade math and experiencing a much more cohesive 6 – 12 curriculum. We are confident that your students’ 6 – 12 experience will be vastly improved by these shifts in our math curriculum.

It is important for students to leave DSA with a solid math foundation that will serve them well in college, especially those programs that have a heavy emphasis in math.

 Sincerely,

 

 William M. Kohut,

 Principal