

MATHEMATICS CURRICULUM MEETINGS

August 12 and 13, 2013

Discussion Summary

The meeting began with a review of the recently released PSSA and Keystone data. It was found that the PSSA scores are better in seventh grade than they have been in the past. The students exceeded the state average in the Keystone exam for Algebra I. However, there is concern over the scores of those completing Algebra I in ninth grade. Further scrutiny of the data will be undertaken to determine specific areas which need remediation.

There was discussion as to whether the sequence of Algebra II and Geometry should be reversed. However, it was decided that students need to have seen geometric concepts and ideas before some of the placement testing which may begin as early as 11th grade.

Another concern of the data was the use of diagnostic data at the elementary school. The GMAD scores are generally used for placement into skill groups (based on stanines). However, the subtopics need to be explored for consistency with PSSA areas of weakness. This may assist in the development of topics for the first few weeks of the school year.

The faculty then reviewed the Grade Band Summaries for the new math curriculum. Some of the areas highlighted during discussion include:

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| Grade 2 | The expectation is that students will know their addition and subtraction facts. Instead of learning one and then the other, the two operations need to be taught together. |
| Grade 6 | There needs to be greater attention given to the teaching of proportions. |
| Grade 7 | Pre-Algebra is to now include the teaching of systems, which has usually been later in the Algebra I course. |
| Grade 8 | Functions are taught through geometry. Other topics mentioned include rate of change of lines, area, and volume. |
| Algebra I | The PA Common Core Standards includes an expectation that students will study exponential equations in this course. This has, in the past, been taught late in Algebra II, or even an Algebra III course. |
| Geometry | The Standards include the teaching of probability. Circles are also highly stressed. There is more on quadratics at the elementary. |

There was a general consensus that the increased rigor of content at each grade level is sustained in the new curricula which have been developed through the auspices of PDE.

Other comments on the proposed curriculum include an appreciation for the section on Misconceptions. It was indicated that this would help when preparing lessons. There seems to be a stress on mathematical modeling, and it was suggested that we might wish to explore the possibility of a class on this topic. There was agreement that students need to be taught to see relationships. The various processes in math do not stand in isolation. They are a continuum of increasing rigor and sequence.

TEXTBOOKS

Time was spent reviewing options for online textbooks, such as Flexbooks. It was felt that it would be advantageous to be able to use this year to assemble the book. There would also be a need to gather story problems or projects to provide the applications needed to conform to the PA Common Core Standards, the Keystone exams, and the revised PSSAs.

DATA ANALYSIS

At the elementary level, time was spent matching PSSA and GMADE results for each student. It was discovered that there are similarities in performance between the two exams. Therefore, increased attention needs to be paid to diagnostic results and remediation. Skill groups were identified, and the process of developing appropriate lessons began.

At the jr/sr high school level, data were reviewed to develop groups for tutoring during Activity Period. The students were grouped based on areas of need as efforts begin to prepare them for the Keystone exams.

OTHER CONCERNS

As noted above, fluency with basic math facts is essential. This includes all four operations. However, speed drills are no longer done because of students with IEPs. There needs to be discussion about this, since there was consensus that this is harming the majority of students. Possible options were discussed, including baseline testing with an emphasis on improvement.