

Executive Summary: **Mathematics Curriculum**

Actions to Date:

Mrs. Jennifer Dilks was appointed this year as our curriculum coordinator for math. She talked with high school math teachers on the Professional Development Day in October and has met individually with the middle school math teachers since then. Several important points emerged from these discussions.

1. The general feeling of the teachers is that the middle school math curriculum is not challenging enough for a majority of our students. Currently, we teach an Algebra I Honors course which is more challenging than our traditional algebra course that is taught in the high school. The criteria to qualify for that course are fairly stringent and many students, who are very capable in math, do not qualify for the honors curriculum. The only option for these students is to take a pre-algebra course which repeats the material that has been presented to them in 7th grade. Offering our traditional Algebra I course at the 8th grade level would allow more students to be challenged in math. Students who are successful could continue with the next course in the sequence at the high school level. Students who felt uncertain or were not as successful as they might have wanted to be could repeat Algebra I in ninth grade without penalty or falling behind in math. The Algebra I planned instruction is presented as modified to include grades 8 and 9 as appropriate grades to enroll in this course.
2. As a result of the change proposed in the teaching of Algebra I, the teachers also agreed that we would need to adapt the planned instructions for Algebra II and Geometry to read that they were appropriate for grades 9-12 instead of 10-12. Those planned instructions are also presented with this modification.
3. Traditionally, our sequence has progressed as Algebra I, Algebra II and Plane Geometry. The teachers have agreed that we need to encourage students who begin Algebra I in 9th grade to opt for Plane Geometry prior to Algebra II. Plane Geometry works on reasoning skills that should make students more successful in Algebra II. In addition, having an algebra course immediately prior to scheduling the Functions course would benefit students since there is a strong algebra foundation required for success in Functions. Finally, the teachers believe that having the courses in this order should help our students to be more successful on the PSSA mathematics test as juniors since the test is really based upon the math contained within Algebra I and Plane Geometry and many students are forced to take the test before they have had the opportunity to complete their study of plane geometry. This requires no change in planned instruction.
4. The teachers also advocated strongly for the elimination of the Integrated Math track. These planned instructions do not prepare students adequately for success in higher math or for the PSSA. If we are not presenting students with appropriate material, it is difficult to expect them to be successful. We would leave the Applied Math curriculum in place. Using the strategies of Differentiated Instruction would allow teachers to meet the needs of individual students who might struggle. It would be imperative to “teach out” the students who had begun in that curriculum since the jump to Applied Math, particularly at the upper levels, would be difficult for students. Following this recommendation would have an added benefit in that math teachers could probably be much more successful in

their planning, preparation and instruction since it would reduce the number of preparations that they would have. Currently most math teachers at the high school level have between four and six separate preparations. At this point, rather than remove the courses from the curriculum by Board action, we would simply like to use administrative discretion to inactivate them as choices for students so that we can evaluate the success of these measures.

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Financial Implications:

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We may need to purchase a minimal number of textbooks to support these changes, but these could be absorbed through monies budgeted for textbooks and periodicals. Any necessary textbooks could be from used textbook companies since the books we are currently using have now been in print for several years.

Recommended Motion:

That the Board of School Directors adopts the planned instructions as presented.