

School Board Meeting:

May 10, 2010

Subject:

6-12 Math Curriculum Adoption

Presenter:

Pam Miller

SUGGESTED SCHOOL BOARD ACTION:

Report only. No recommended action at this time. A request to adopt *IMPACT* math from Glencoe for our middle school math curriculum and *Prentice Hall* math from Pearson for our high school math curriculum will be recommended for you to take action upon at the May 24 school board meeting.

Connection to BHM Mission Statement

The recommended action for this curriculum adoption supports the following components of the BHM Schools' mission statement, core values, and key results:

MISSION STATEMENT

Making a difference by preparing all students for a successful future in a changing world.

CORE VALUES

- ✚ All students can learn, though at different rates and in different ways.
- ✚ Maximizing learning requires innovation, risk-taking and the ability to change.
- ✚ Continuous improvement is essential.

KEY RESULTS

- ✚ All students demonstrating academic growth and success.
- ✚ Increase student learning and expand instructional strategies by implementing technology.

DESCRIPTION:

Background information

For the past two years, a team of secondary teachers from BCMS and BHS has engaged in research, discussion, and professional reading to determine a recommendation for the future direction of secondary math curriculum and instruction for our district.

State Standards and Requirements

As you are well aware, the Minnesota legislature has determined grade level standards and benchmarks for math instruction. These state math standards were revised in 2007, with a requirement for local districts to implement the new standards by the 2010-2011 school year. This requirement is in alignment with our local curriculum adoption process. The revised standards include an increase

in rigor at all grade levels, as well as a greater focus on algebra readiness skills for students. The standards also call for a requirement of all students to complete Algebra in Grade 8, and all students to complete the equivalent of Higher Algebra in high school.

Current Program

The current curriculum utilized at BCMS is the *Connected Math Project (CMP)* series. At Buffalo High School, the sequential math courses use the *Prentice Hall* math series, and the integrated math courses use *Core Plus*. These materials have been in place for about twelve years.

At BCMS, we offer advanced math opportunities for qualifying students in grades 6, 7, and 8. At BHS, students have the option to complete the three-credit math requirement either through the sequential courses of Algebra, Geometry, and Higher Algebra, etc., or through Core Plus 1, Core Plus 2, Core Plus 3, etc. There are many course opportunities for advanced study in math in topics such as calculus and statistics. Over the years several other remedial course options have been developed to help students gain the skills needed.

Stakeholder Input

Stakeholder input regarding current program strengths and areas to improve was solicited from secondary students and parents through an online survey administered in 2009.

Team reviewed the stakeholder survey data. We collected 564 responses, representing 288 parents and 274 students. Observations made regarding the survey information were the following:

- The overall satisfaction rate was 3.5, indicating good results.
- The areas ranked as strengths were 'teacher concern for student learning', and 'quality of math instruction'.
- The areas ranked as areas to improve included 'development of study skills', and 'quality examples for parents to help with homework'.
- The open-ended comments contained a wide variety of topics.

Educational Research and Promising Practices in Math Education

The Secondary Math Planning Team engaged in the same professional reading as the elementary team, which was presented to you in a previous report. We used the work endorsed by the National Council of Teachers of Mathematics (NCTM) and the National Math Panel Report. In particular, as with the elementary team, we focused on NCTM's "Foundation of a High Quality Math Program."

Desired Results

Once we had established where we are at currently as a district and learned about promising practices, we created a document that outlined the results we were looking for and trying to achieve with students. The development of these results provided the team with the vision needed to move forward in planning future direction. Some of the statements identified as desired results include:

- ❑ *Cohesive and coherent K-12 scope and sequence and course offerings that meets MN standards*
- ❑ *Equal access to challenging math curriculum for all learners*
- ❑ *Close the gap for learners who have fallen behind*
- ❑ *Remediation opportunities that are authentic and relevant for students who need it*
- ❑ *Teachers have agreement and understanding of what students need*
- ❑ *Clear communication of course expectations of exposure and mastery of concepts*
- ❑ *High student achievement in math*
- ❑ *Utilizing all tools available to us for assessing student knowledge in math*
- ❑ *Highly qualified math teachers and teachers supporting math instruction*
- ❑ *Excellent professional development plan for math teachers and SPED and ELD teachers*
- ❑ *Ongoing sustainability of professional development and additional training*
- ❑ *Students demonstrate excellent problem-solving skills using resources around them*
- ❑ *Independent learners*
- ❑ *Students have a solid foundation of basic skills (whole numbers, fractions, geometry and measurement)*
- ❑ *Parent involvement*
- ❑ *Use of technology to enhance instruction*
- ❑ *Global connections and opportunities*

Potential Curriculum Resources

The Secondary Math Planning Team examined math curriculum materials available. We also developed a curriculum evaluation matrix to be used during the evaluation process.

The team investigated several math curriculum programs initially, then invited vendors in for a program overview. Those initially considered included Holt Math, McDougal Math, Math Connects, Core Plus, UCSMP (University of Chicago) Math, Discovering Algebra, Impact Math and Glencoe Math, and CMP2/CME from Pearson. From those vendor presentations, two programs were then selected at both the middle school and high school for further consideration during our pilot period. The two programs selected were *Impact Math* and *CMP2* for BCMS and *Glencoe Algebra* and *CME* for BHS.

Math Curriculum Pilot – September 2009-March 2010

Pilot teachers were recruited and trained to try the materials in their classrooms from September 2009 – March 2010. All pilot teachers were invited to share their opinions with the planning team members. At the end of the initial pilot period, BCMS teachers were ready to make a decision, however, the BHS staff was not satisfied with either program selected for the pilot. We then engaged in a third pilot at BHS with *Prentice Hall Algebra*, a new text that had not been published yet when we had initially researched materials.

District Recommendation

On March 18, 2010, the Secondary Math Planning Team then met to review all the data collected to date. The team supports a district adoption of *Impact* by Glencoe for BCMS and the *Prentice Hall* series (algebra, geometry, higher algebra) for implementation in the 2010-2011 school year.

BCMS staff feels the *Impact* math expects a very high rigor of math skills from students. They also believe the investigative approaches incorporated in the *Impact* math will help bring the relevance of the math concepts to students in their learning. There are wonderful technology resources for parents and students included.

BHS staff feel the *Prentice Hall* math provides students excellent learning opportunities in algebra, geometry, and higher algebra that are clear, easy to understand, and work well with all types of learners. They are especially impressed with the technology opportunities available to teachers and students with this adoption.

Financial Implications

I am still in the negotiating process to reach the final agreement for the cost for the secondary materials for our district. I am working with Julie and Matt to determine the number of materials needed. The approximate cost for the complete secondary adoption is \$177,091. Both Julie and Mark have budgeted for this math adoption out of their site supply budgets.

Future Challenges

One future challenge we will need to consider is planning and implementing a remediation opportunity for students at BCMS and BHS. We have discussed some possible ideas for remedial opportunities to provide students with extra time in math within their schedules, but are not planning to implement the strategies for 2010-11, as it requires a small amount of additional staffing to consider. Our intention is to plan for 2011-12 with staffing allocated out of the site FTE allocations to provide remedial opportunities for those who need it.

Next Steps

Once the adoption is approved, all secondary math materials will be ordered and will arrive prior to the end of the school year. This will allow teachers the opportunity to use some summer hours to plan and prepare prior to the start of next school year.

The entire process has been very enjoyable and yet another example of excellent teamwork by the teachers in our district. They are truly committed to providing students with the best instruction possible.

At Monday's board workshop, I will share additional information about the planning process. I will be happy to answer any questions you may have at that time.