



## Regular Agenda Item 4.1

### MIDDLE SCHOOL MATHEMATICS CURRICULUM Questions from Bob Shirley/Responses from the District

February 12, 2007

1. Should OSD wait to purchase a new math book until after the legislature determines if it wants to direct districts to choose between two or three books, and the state board of education completes the independent review of the state's mathematics grade-level expectations and essential learning requirements?

This is a complicated question but we think the answer is no. From all that we have heard, if the legislature does make this decision it will be years before the process is completed. If we happen to adopt CMP2 it seems reasonable to believe that this would be one of the books on the State's menu as over 100 districts, most of the larger districts, are currently using CMP2. We would find it unusual that the state would not include the book that is most commonly used in our state not to be on the list. This question is a bit more difficult to answer if we were to adopt McDougall Littel as only two districts in our state currently use that text. We have also learned the legislature may be going to provide a list of books that if a district purchases from, will save them money. This does not mean districts would be required to purchase from that list. If the State Board approves a review of the GLEs, it takes a full 18 months to run an item on the assessment all the way through the development process before it can appear on the test. And, the test can't be changed over entirely at once or the longitudinal data will be lost.

2. Is the board being asked to approve a book, a pedagogical approach to mathematics education, or both?

The Board is being asked to adopt a book. We know that a balance of concepts, problem solving, and basic skills is a necessity in mathematics instruction. The state has already made the decision as to what pedagogical approach best aligns with the standards and, therefore, the WASL is our state assessment. We realize we must provide an approach that provides all students with the best opportunity to learn and understand math, meet state standards, and be prepared to take advanced math courses. Whatever book we decide to adopt, our teachers will be asked and expected to deliver a balanced instructional approach that ensures all students the opportunity to gain basic math skills and fluency as well as problem solving skills and a deep understanding of math. We believe that CMP2 makes this work easier as it is easier to supplement basic skill work verses problem solving applications and contextual learning.

3. Connected Math Program (CMP) was used by one teacher for the 2005-06 year at Jefferson Middle School, and CMP is in use by more than one teacher in more than one middle school this year. What information about the experience with CMP has been collected (e.g., test scores, written reviews by teachers, recorded comments from students, recorded comments from parents)? What analysis and results have come from the collected information?

A while back administration at WMS conducted a student survey to identify students' feelings about CMP2. The results demonstrated many students saw the relevance and value in the approach. Other students expressed some concerns regarding some difficulty in understanding what was being asked. We do not have any conclusive data that we can utilize to help us in a finding regarding the effects of CMP2. We intended to conduct the MAP test at the end of January with all CMP2 students. Due to inclement weather, late starts, a cancelled day, and then the Northwest Evaluation Association pulled the MAP from the web to change over to a new edition; we were unable to implement the assessment at our desired time frame. We need to be cognizant that the alignment between the MAP test and the state standards is only a measurement of EALR 1 – and probably not a deeply aligned measure. We cannot say that the MAP test measures the standards because it does not assess EALRs 2, 3, and 4 which are the “process” components of our state standards.

4. If CMP is approved for use in middle school, will there be any related changes implemented at the same time, for example, increased professional development, or schedule changes to permit longer mathematics classes?

Yes, there will definitely be professional development focused on the implementation of CMP2, instructional practices that increase teacher and student understanding of mathematics, and professional learning communities to increase staff-to-staff sharing and learning. We have begun the dialogue about changing the middle school math periods in order to provide more time in the areas of math and science. Several staff attended a visitation to Shahala Middle School in the Evergreen School District in which they are finding success with CMP2 while using a schedule that provides longer periods for math. We also know that many districts using CMP2 are doing so in a 55 minute period.

5. What issues concerning CMP were raised by teachers and resolved in the selection process? Were any teacher-raised issues not resolved?

Issues that were resolved is that CMP2 provides a balanced approach and has a strength in EALRs 2, 3, and 4. It is also resolved that a comprehensive and sustained staff development plan will be necessary. Amount of classroom time needed and what daily schedule would be best has not yet been resolved. We also are still investigating and trying to determine how best to roll-out CMP2 if chosen. Other issues identified include how best to provide parent support. We have developed several tactics that we think can help. They include: parent nights, a parent math guide, links to on-line resources, access to the K-12 Teaching and Learning staff, and the possibility of partnering our after school Olympia Parks program with a couple teachers and provide after school math help.

6. How will use of CMP in the middle school complement Trailblazers in the elementary school? How will it differ?

It is a similar format – embedded problem solving, concept development, reasoning, etc. CMP2 has skill and procedural fluency practice built in where teachers can provide targeted practice through the use of the Activity Generator. These activities or practices allow the teachers to provide differentiated instruction to the students based on their particular needs. Trailblazers does not, at this time, have the ancillary tools that CMP2 provides. We will be developing a K-8 Math Guide for teachers. This guide will include supplemental materials that can be used for each component of CMP2 to assist in basic skill development and math fluency. We will be doing this for the elementary grades as well. We plan to identify the basic math skills that should be mastered at each grade and include them in this guide. Thus, teachers should know which basic math skills students should develop at their grade level.

7. How will use of CMP in the middle school complement the high school mathematics curriculum? How will it differ?

Students successfully completing CMP2 may earn algebra credit. We expect that after students go through the CMP2 curriculum they will have a deeper understanding of mathematics which will help them in their high school math courses. Those who enter the high school taking algebra I will have a solid background in pre-algebra. Those who are in the faster track of CMP2 should be prepared to enter high school in geometry. There is research on how students learn that supports this. If CMP2 is adopted, we still intend to offer algebra and geometry options at the middle school level and may also offer pre-algebra for those who it is desirable to take a more traditional approach.

8. Please compare CMP and at least one other mathematics book evaluated after May 2006:

- a. Others were book, pedagogy, or both?
  - b. Results of pilots?
  - c. Expected changes (e.g., professional development, schedule) in middle schools if adopted?
  - d. Resolved and unresolved issues raised by teachers?
  - e. Complementary or uncomplimentary to Trailblazers?
  - f. Complementary or uncomplimentary to high school curriculum?
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- a. Others were a book, but pedagogy plays a part. We came down to two textbooks, CMP2 and McDougall Littel. CMP2 is based more on a problem solving and application approach, weaving into the process the use of basic skills. McDougall Littel is more a traditional text with an emphasis on basic skills and learning the mathematical procedures with less application and problem solving.
  - b. Of the five teachers who piloted CMP2, four speak very highly of CMP2 and hope it is adopted. Two other teachers in our district that we know of have also used both CMP2 and a traditional text in their careers and both of these people favor CMP2. One staff member piloted “Mathscape” which is categorized as more a mix of traditional math and constructivist. The teacher piloting this book likes it. However, last year the committee did not select it in the top three and this year when we revisited looking at other texts, no one on the committee raised the notion that we should reconsider Mathscape. There are only a few small districts in the state using Mathscape.
  - c. We have much to do in terms of professional development and you will hear about some of our plans at the board meeting Monday. We realize this is an area that needs great attention at all grade levels. We are beginning discussions with the middle school administrators about the possibility and ramifications of increasing some class periods to maybe 80 minutes. You will see an example of what this could look like at the board meeting. We intend to develop a K-8 math guide that will

provide teachers with specifics about what basic skill students should master at each grade level. We hope to reduce the questions about who has what responsibilities to reduce the gaps.

- d. This is an area that we have concerns. The K-12 staff feels strongly that CMP2 is the better choice for all kids. We also feel that in our community it is important to continue to offer algebra I and geometry. We think it would be worthwhile, if CMP2 is adopted, that we should convene a task force to look at the possibility of having a pre-algebra option for some students. You will see a depiction of this at Monday's board meeting. No matter what text is adopted we believe that extensive staff development is necessary. We have some teachers who want to see CMP2 adopted and some that want McDougall Littel adopted. Whatever the decision is we will have some teachers a bit disenfranchised. We will need to provide time for collegially discussion, a means to hear frustrations and attempt to alleviate them, and the development or identification of important supplementals. With CMP2, we know that we have many districts, schools, and teachers nearby that can assist us.
- e. CMP2 is more similar to Trailblazers than McDougall Littel. CMP2 has strengths over Trailblazers in the fact that it is a newer product with greater on-line support. Also, because teachers at the middle school usually focus on a subject matter it is different than the elementary teachers who have several subjects to deal with. Middle school teachers teaching math are highly qualified in the content area. McDougall Littel is similar to our current Glencoe book at the middle school. It is not as philosophically aligned with Trailblazers as is CMP2.
- f. McDougall Littel is more similar to the approach we are using at the high schools as it is a more traditional textbook. CMP2 is notes as providing students with a strong background in both algebra and geometry and provides the preparation for students to enter high school in either algebra or geometry depending on the pace and number of books the students complete in CMP2.