

Menlo Park City School District

Recommendation of the K-5 Mathematics Materials Review Committee November 3, 2008

Process

In conjunction with the state's schedule to adopt new materials on approximately a seven year cycle, a Mathematics Committee representing all schools and every grade level was convened in 2007-08. The committee engaged in a series of studies and discussions to prepare for the instructional materials review. Parent representatives, appointed by the Board, joined the staff to participate in the materials review process. Steps in the process included:

- Review of state mathematics standards in relation to district instructional program
- Analysis of student performance data in relation to standards
- Review of current research describing best practices regarding mathematics instruction
- Identification of critical components to be addressed in high quality instructional materials
- Initial review of programs approved for adoption by State Board
- Discussion and analysis to narrow field to programs best meeting district needs
- In-depth review of promising programs
- Analysis to reach consensus on program recommended for adoption

The following individuals contributed their time and expertise to this project throughout the course of the year:

	<u>Laurel / Encinal</u>	<u>Oak Knoll</u>
K	Christen Oberdoerster	Alicia Bush
1	Masie Chin	Jeanne McCann
2	Sandra Horwitz	Sara Kew
3	Jeannette Laxague	Kris McColloch
4	Karen Strohmaier	Stacy Emmert
5	Susan Preston	Joan von der Linden

Parent members, appointed by the Board: Christie Tonsfeldt (Laurel), Caroline Wang (Encinal) and Jim Gerber (Oak Knoll.)

Recommendation

As a result of months of study and deliberation, the K-5 Mathematics Committee recommends the following program for adoption:

California Everyday Mathematics, Wright Group/McGraw-Hill

Rationale

After the initial review of 10 publishers, the committee focused on three promising programs. In addition to *Everyday Mathematics*, Marshall Cavendish International's *Primary Mathematics (Singapore Math)* and Sadlier-Oxford's *Progress in Mathematics* were selected for further consideration.

While distinctly different from one another, two of these programs (*Everyday Mathematics* and *Singapore Math*) surfaced as instructional tools offering noteworthy approaches to an identified priority for our district: expanding the focus of the mathematics instructional program to include greater emphasis on

algebraic thinking, logic, and problem solving. For a variety of reasons, *Everyday Mathematics* is recommended by the committee as best able to assist teachers in making desired pedagogical changes which will impact achievement, challenge learners and prepare students for advanced mathematics courses in the middle school and beyond.

Everyday Mathematics has high expectations for both teachers and students. The program provides resources to teach not only basic skills, but also expands beyond traditional drills. It encourages children to understand *why* math is important and *how* they reach their answers, so they internalize what they are learning. As a result, students find it easier to remember basic skills, to apply what they know in order to solve problems, and to think mathematically.

Children learn and practice all of the basic math facts, and they do it in multiple ways, including paper-and-pencil exercises, hands-on use of math manipulatives, and skills-based mathematics games.

Developing problem solving skills and strategies is a primary focus of *Everyday Mathematics*. Students analyze many kinds of problem situations, recognize the mathematical relationships within those situations, and formulate and complete solution strategies.

Students receive early and frequent exposure to the concepts of number relationships and algebra. Students with a strong conceptual understanding are better equipped to learn new skills, justify and explain their thinking, and apply skills to a variety of situations within the classroom and in the world around them. The program introduces students to sophisticated mathematics as it is used in the real world and then provides them with the confidence and understanding to recognize and understand the meaning and elegance of the field of mathematics.

The program also has extensive teacher materials that provide a wealth of information for both the novice and experienced teacher. The *Everyday Mathematics* authors were careful to ensure that teachers are given the support they need to provide accurate, meaningful, and differentiated mathematics instruction to meet the needs of all their students.

The instructional design of *Everyday Mathematics* is based on sound cognitive research. Children learn best when new topics are presented at a brisk pace, with multiple exposures over time, and with frequent opportunities for review and practice. The sequence of instruction has been carefully mapped out to optimize these conditions for learning and retaining knowledge.

Everyday Mathematics is more rigorous than many other programs, and the results are seen in higher test scores. Students have been found to be mathematically literate on a wide variety of measures, including state-mandated tests, commercially available standardized tests, and tests written by independent researchers. The *What Works Clearinghouse* has given *Everyday Mathematics* the highest rating yet achieved by any other elementary math curriculum. The longitudinal research also demonstrates success closing the gap for under-performing students.

Other positive features:

- Formative and summative assessments identify instructional needs and track students' progress; the self-reflective component is a powerful metacognitive tool
- Program resources provide excellent support for teachers as they differentiate instruction and design extension and remediation activities to meet individual needs
- Learning activities, projects and explorations are engaging to students and provide excellent hands-on reinforcement of mathematical concepts and skills
- Abundant alternative strategies are suggested to assist teachers in reaching a wide variety of learners
- A strong home-school connection informs parents about lesson content, student progress, and extensions of lessons that can be implemented at home
- The program is available in Spanish to meet the needs of our immersion program students

Everyday Mathematics is currently being implemented in a variety of high-performing districts (Hillsborough, Portola Valley, Woodside, Palo Alto, Piedmont, and others) who have instructional challenges similar to ours. The comments of the middle school staff from one of these districts supports the positive impact that the program has had over the duration of the implementation. They report that students are more prepared for Algebra and Geometry courses, are better at multiplication and other basic skills, and demonstrate improved ability to discuss mathematics and solve complex problems.

The Math Committee enthusiastically recommends the *Everyday Mathematics* program for adoption at the K-5 level. While it is important to remember that no single program will provide every resource necessary to enrich and support all learners, it is clear that *Everyday Mathematics* offers well-balanced, high-quality and multi-faceted materials which will assist teachers in extending mathematical learning beyond basic arithmetic. The program will bolster our efforts to improve each student's ability to problem solve, handle complex data, and process information using higher-order thinking skills. *Everyday Mathematics* best meets the needs of students in our district and supports our goal of improved mathematics instruction.

Goals and Timeline

In order to implement improvements to the instructional program to ensure a rigorous, balanced curriculum which engages and challenges all students, the following tasks must be completed during the 2008-09 school year.

December 2008	Board action on the recommendation for adoption of K-5 basic instructional materials The recommended program is a departure from traditional math textbooks in its format and instructional approach. The opportunity to begin training and curriculum planning during the balance of the 2008-09 school year would, therefore, be a great advantage in preparing for implementation with students in fall 2009.
March 2009	Consider findings and recommendations in relation to these identified priorities: 1. Philosophy and operations related to grouping and instructional approaches which promote the progress of remedial learners and challenge accelerated learners at all grade levels 2. Strategies within the instructional program that ensure the preparation of a larger number of students to meet the algebra standards at the eighth grade level 3. Plans for ongoing professional development which considers how to enhance teacher content knowledge, increase the use of a range of effective instructional strategies, and provide leadership development and personnel for implementation. This year's exploration of SVMl resources (including instructional materials, MARS performance assessment, and content training for teachers) will be reflected in the proposal.