

FAQ Sheet for the Math Night Presentation

More than 300 parents attended the Middle School Math Nights held in October 2012. We appreciate your interest and your support as we work to provide high quality mathematics instruction to all of our students. Parents' questions fell into several main categories: the impact on instruction, teacher preparation, and Smarter Balanced Assessment Consortium assessment. Therefore, we grouped the questions together around these main ideas.

Why are teachers using small-group instruction in mathematics?

The use of small-group instruction along with rigorous task allows all students to be engaged in the learning process. The more students participate during instruction, the more students learn (Boaler, 2009). The use of small group instruction allows the teacher to differentiate in the classroom, get a better understanding of what students are thinking, and be able to make proper interventions to help the student succeed. With the future Smarter Balanced Assessment Consortium (SBAC) test looming, which requires students to solve rigorous problems, the implementation of this instructional model will help our students become better prepared to illustrate their learning.

The instructional model that incorporates small group instruction will also help our students to be prepared for the 21st century. The 21st century skills, as Jacobs (2010) indicated, require schools to meet the needs of the students for the future, instead of focusing on the educational approaches of the past. As Strong, Silver and Perini (2001) stated, "If the school fails to mirror the world, our children will be unprepared for their post-schools lives" (p. 98). These 21st century skills require a curriculum that "provides individuals with the dispositions necessary to engage in lifelong learning" (Jacobs, 2010, p. 226). The focus of this instructional model is to develop the students' communication, collaboration, creativity, and critical thinking skills.

What is the role of the teacher within this instructional model?

The teacher has a strong presence and very important role in the classroom with this instructional model. The teacher has shifted roles from being the disseminator of information in a traditional classroom to being the guide and facilitator. The teacher sets up the task for the class, question students' thinking during the task, and helps all students develop problem solving skills. Once the task is completed, the teacher's role is to close the lesson by bringing all the groups back together and provide closure to the lesson.

How are we supporting teachers in the delivery of this instructional model?

We are providing teachers with training to teach our math classes in a way that includes small-group instruction and rigorous tasks by utilizing department meetings and professional development days. On these days, we train teachers to use the instructional approaches needed to support each student's ability to problem solve and think critically. Additionally, math

classrooms are visited by the math curriculum leaders, math resource teachers and building administrators and teachers receive feedback to help them sustain and improve instruction.

What research supports this instructional change?

During the past decade, researchers have looked at the impact of instructional models on achievement in mathematics. Some key findings are highlighted below.

- The level of rigor in academic tasks can have a significant impact on the performance of student achievement in mathematics (Stein, Smith, Hennington & Silver, 2000).
- Students being challenged with high-level tasks, along with being able to communicate their ideas with peers, produce higher achievement. (Boaler & Staples, 2008; Reys, Reys, Lapan, Holliday & Wasman, 2003; Stein, Smith, Henningsen & Silver, 2000))
- Classrooms that provided students with higher level tasks had students who performed higher on mathematics assessments than students who were engaged in lower level tasks, especially for assessments that tested students on higher level tasks (Stein et al., 2000).
- Levels of rigor were initially identified by Bloom and updated recently (Forehand, 2005), but more specifically to mathematics instruction.
- Slavin, Lake and Groff (2008) reviewed various math programs for grades K – 12 and found that programs designed to change daily teaching practices – particularly through the use of cooperative learning, classroom management, and motivation programs – have larger impacts on student achievement than programs that emphasize textbooks or technology alone. In addition, the most successful math programs encourage student interaction.

How do you know if a student is learning all the concepts properly?

Assessment is the check and balance that determines if students are learning. The role of assessment is to gather data, both qualitative and quantitative, in order to determine if the student understands a particular concept or skill. When a teacher gives a formative assessment (e.g., a quick quiz), this information provides data which enables the teacher to make learning adjustments for a particular concept or skill, and better prepare each students for the summative assessment.

What should we do if my child is struggling?

Struggling students should first talk to their teacher. The teacher is present to help the student get through the difficult situation. We encourage students to self-advocate, which is an important life skill. Parents should also contact the schools and arrange to meet with school staff, including the teacher, counselor or administrator in order to develop a plan that supports the student in this transition to rigorous coursework. Meeting with the teacher is important in developing a positive working relationship between you and the teacher, since everyone is committed to supporting and encouraging the student. We are very fortunate to have some of the best mathematics teachers to support your student in the Fairfield Public School system. Please take advantage of their knowledge and expertise in helping your student learn.

Are there resources for parent?

The Internet has many resources for parents to help them support their child with the transition to the Common Core State Standards. The two website below contain good resources for parents:

http://educationnorthwest.org/webfm_send/1106

http://www.pta.org/common_core_state_standards.asp

What do the various mathematical practice standards look like in a classroom?

Just a reminder, the Common Core State Standards Mathematical Practice standards are listed below. These practice standards are considered the greatest instructional change coming from the Common Core State Standards.

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

The best website that provides an example of all the practice standards is through the website *Inside Mathematics*. (<http://insidemathematics.org/index.php/exemplary-lessons-integrating-practice-standards>). This website provides video lessons that exemplify each practice standard through an actual lesson.

What does the computer SBAC assessment look like?

SBAC recently released examples that illustrate the different types of problems for the mathematics section. These problems illustrate how students will be required to explain their thinking to solve a mathematical problem.

<http://sampleitems.smarterbalanced.org/itempreview/sbac/index.htm>

How will the assessment be modified for students who are learning disabled with reading and writing?

The SBAC website below provides a good explanation to how the assessment provides accommodations for special education students.

http://www.smarterbalanced.org/wordpress/wp-content/uploads/2012/07/SmarterBalanced_Accessibility_Factsheet.pdf

Where can I find additional released items?

The table below has links to released items from grade 3 to high school.

SBAC Mathematics Released Items
<u>3rd Math</u>
<u>4th Math</u>
<u>5th Math</u>
<u>6th Math</u>
<u>7th Math</u>
<u>8th Math</u>
<u>High School Math</u>

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