Welcome Parents

As we transition to the Common Core Curriculum for Mathematics we are going to be giving your students opportunities to learn in new and different ways.

As we go through this process we want to work together with you to build success and keep you a part of our student’s learning.

Our goal is to prepare them for the workplace of their future.
A Work in Progress….

The information contained in this presentation is accurate to the best of our understanding as of today, March 20, 2013.

Currently students across the country are piloting portions of the Smarter Balanced Math and ELA assessments. We are confident that changes will result from these piloting activities.
1. Provide information on:
   • the Common Core State Standards (CCSS)
   • the Smarter Balanced Assessment Consortium’s National Exam

2. To highlight the changes brought about by:
   • moving to the Common Core Curriculum
   • moving to the Smarter Balanced Assessment System.
What are Common Core State Standards?

1. Learning standards for grades K-12 that are common to all participating States in the USA.

2. They are focused in Math and ELA, although Science and Social Studies are on the horizon.

3. These Standards focus on learning expectations for students. They are not a curriculum in themselves.

4. Each State is responsible for determining how curriculum will be developed at the local levels.
Who is Behind This Initiative?
The National Governors Association and the Council of Chief State School Officers led the development of common core standards for grades K-12 in ELA and mathematics.

Who Wrote the Standards?
Representatives from the States including educators, content experts, researchers, national organizations and community groups. Feedback was given by the general public, teachers, parents, business leaders and content area experts.
Common Core State Standards

Why Now?

- Disparate standards across states
- Student mobility
- Global competition
- Today’s jobs require different skills
The Learning Trajectories emphasize the interconnectedness of mathematical concepts from grade level to grade level.
CCSS States and the Assessment Consortia

(PARCC) Partnership for Assessment of Readiness for College and Careers

Participating States

Balanced
SMATER Balanced Summative Assessment Development Timeline

- June 2010: Common Core State Standards (CAS) Released
- Sep 2011: Content Specifications in ELA and math
- June 2012: Test Design and Test Specifications
- Fall 2012: Exemplars and Tasks: Release of exemplar items and tasks
- 2013: Item writing: Item writing materials developed using CAS
- 2014 2015: Pilot test: Summative, interim, assessments in sample schools

The Michigan Merit Exam

**How does it work?**

<table>
<thead>
<tr>
<th>Exam</th>
<th>English</th>
<th>Reading</th>
<th>Writing</th>
<th>Math</th>
<th>Science</th>
<th>Social St.</th>
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</thead>
<tbody>
<tr>
<td>ACT</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>WorkKeys</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
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<tr>
<td>Michigan Supplemental Subtests</td>
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<td></td>
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<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Act Math, WorkKeys Math, and Michigan Subtest Math make up your MME Math Score
Changes to Secondary Assessment Based on Today’s Information

1. The Smarter Balanced assessment will replace the MEAP and MME Math and ELA Assessments.

2. As of right now, the State of Michigan plans to create Interim tests to be used in Science and Social Studies.

3. It will be given starting in the Spring of 2015. We will have a 12 week window in which to administer this test.

4. Some portions of the test will be given online and some portions will be pencil/paper.

5. We are hearing that the ACT will still be given to students in their Junior year.

6. As of yet, we do not know how the State plans to address the WorkKeys portion of the MME test.
How has the Common Core Changed Mathematics Instruction and Learning?

The CCSS was created around two sets of standards; Content Standards and Practice Standards.

Because of this, it has changed the way we define and measure what it means to UNDERSTAND Mathematics.
The 8 Mathematical Practices

- Make Sense of Problems and Persevere in Solving
- Model with Mathematics
- Reason Abstractly and Quantitatively
- Use Appropriate Tools Strategically
- Look for and Make Use of Structure
- Attend to Precision
- Construct Viable Arguments
- Critique the Work of Others
- Express Regularity in Repeated Reasoning
What Does it Mean to UNDERSTAND Mathematics?

Conceptual Understanding
refers to comprehension of mathematical concepts, operations, and relations; it is the functional grasp of mathematical ideas, it enables students to learn new ideas by connecting to ideas they already know.

Procedural Fluency
is defined as skill in carrying out procedures flexibly, accurately, efficiently, and appropriately.

Strategic Competence
is the ability to formulate, represent, and solve mathematical problems.

Adaptive Reasoning
refers to the capacity for logical thought, reflection, explanation, and justification.

Productive Disposition
is habitual inclination to see mathematics as sensible, useful, and worthwhile, coupled with a belief in diligence and one's own efficacy.
What Does it Mean to **UNDERSTAND** Mathematics?
Sometimes a Picture is Worth a $10^3$ Words

Let’s Try Some MATH
32. Which of the following is another way to represent this expression?

\[ 3a(b + 5c) \]

A. \( 3a(5bc) \)
B. \( 3a(b) + 5c \)
C. \( 3a(b) + 3a(5c) \)
D. \( (3a + b)(3a + 5c) \)
Look at each expression. Is it equivalent to $36x + 24y$?

Select Yes or No for expressions A – C.

A. $6(6x + 4y)$
   - Yes
   - No

B. $30(6x - 6y)$
   - Yes
   - No

C. $12(x + 2y + 2x)$
   - Yes
   - No
India counted the number of pages she wrote in her journal each week during her stay at her grandparents’ house.

<table>
<thead>
<tr>
<th>Week</th>
<th>Number of Pages Written</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>2</td>
<td>30</td>
</tr>
<tr>
<td>3</td>
<td>28</td>
</tr>
<tr>
<td>4</td>
<td>18</td>
</tr>
</tbody>
</table>

What is the median number of pages she wrote per week?

A  0
B  18
C  22
D  23
Claire is filling bags with sand. All the bags are the same size. Each bag must weigh less than 50 pounds. One sand bag weighs 58 pounds, another sand bag weighs 41 pounds, and another sand bag weighs 53 pounds. Explain whether Claire can pour sand between sand bags so that the weight of each bag is less than 50 pounds.
Question requires manipulating a given formula (from a formula sheet).
Single multiple choice answer (25% chance by guessing)
Ms. Olsen is having a new house built on Ash Road. Ms Olsen wants the sidewalk to have an end in the shape of an isosceles trapezoid, as shown.

The contractor charges a fee of $200 plus $12 per square foot of sidewalk.

Based on the diagram, what will the contractor charge Ms. Olsen for her sidewalk?

Show your work or explain how you found your answer.
Sample Smarter Balanced Item

- Real world constructed response item without a provided formula.
- No guessing
- Content grade level shift (11th to 8th)
Sample Smarter Balanced
Performance Task
“Thermometer Crickets”

How is this different from the MEAP or MME?

- Multiple steps using multiple skills
- Analyze and justify position using mathematics
- Increased use of written communication
- Completed over multiple class periods
Smarter Balanced = Adaptive Testing
Multidimensional Assessment

What Proficient Students KNOW, UNDERSTAND, and are able to DO

- **Skills- Procedures**: such as carrying out one-set or multiple-step algorithms, inventing new algorithms, and using technology to perform mathematical calculations
- **Properties**: The underlying theories and principles of mathematics, often requiring student to identify or apply mathematical properties or provide mathematical justifications
- **Uses: Real-world Applications**: which often means expecting students to develop models to describe the mathematics
- **Representations**: Visual depictions of mathematical concepts, such as graphs, pictures of geometric figures, or statistical plots.
Preparing for the Challenge

• Developing **Mathematics Experts**
  – Deepening Instructors Content and Pedagogical Content Knowledge

• Using **Technology** to Enhance Mathematics Instruction

• Using **Multiple Representations**

• Infuse **Writing** into Mathematics

• Making Math **Thinking** Visible

• Mastering **FLUENCY** at all levels
Preparing for the Challenge

- **2011/2012- Piloted Highlight Lesson Only**
  - Participated in Pilot and Review at Oakland Schools (ISD)
  - Math Pioneers-Elementary
  - DELTA Project-Secondary
  - Classroom Coaching with Continuous Professional Development

- **2012/2013- Full Implementation**
  - Data Teams
  - Instructional Lead Teachers – Elementary and Secondary Math
  - Continued Pilot and Review
  - Everyday Math and Connected Math Project Roundtable
  - Classroom Coaching with Continuous Professional Development
  - Oakland Schools Math Leadership Team and Math Council
2013/2014

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- Using **Multiple Representations**

- Infuse **Writing** into Mathematics

- Making Math **Thinking** Visible

- Mastering **FLUENCY** at all levels
CCSSM Websites

- http://www.smarterbalanced.org/
- http://www.cgcs.org/Page/244
- http://pta.org/parents/content.cfm?ItemNumber=2583
Math is AWESOME

Thank You

Sue Clippert and Tom Maes