What’s New in our Elementary school Math Classrooms?
Welcome!

If you did not receive one, please get a Parent Information Packet.

The note card on the front is to jot down questions.
Sharing Information on 3 Things

- Colorado Academic Standards and the Common Core State Standards (CCSS)
- New Math Curriculum: Math Expressions
- Standards-based Assessment and Reporting, often called Standards-based Grading
A little humor to get things started:

This is what we’re trying to avoid…

https://www.youtube.com/watch?v=KdxEAt91D7k
Standards Based Education Background

In 1993, House Bill 93-1313 initiated standards based education in Colorado. The statute required the state to create standards in reading, writing, mathematics, science, history, civics, geography, economics, art, music and physical education. It also initiated state mandated testing starting in grade 3.
Standards Based Education Background

August, 2010

The Colorado State Board of Education adopted the Common Core State Standards in Mathematics and English Language Arts.
December 2010
CDE released the Colorado Academic Standards which incorporate the Common Core Standards while maintaining the unique aspects of the Colorado Academic Standards.
Where did the Common Core State Standards (CCSS) Come From?

Since late 1990’s state governors and big-business leaders have advocated for more rigorous standards, resulting in college and workforce ready graduates.

In 2009 governors (National Governor’s Assoc.) partnered with Council of Chief State School Officers to begin developing the standards.

A non-profit group (Student Achievement Partners) was formed to write the standards, with input from stakeholder groups (NCTM; NCTE; NEA; AFT; Intl. Reading Assoc.; etc.)
Where did the Common core State Standards (CCSS) Come From?

- It DID come from states (governors and business)

- It did NOT come from the federal govt.

- It HAS been incentivized by the federal govt.

- It HAS been both co-opted and poorly messaged, at times.
How is Math Changing in Our Elementary Classrooms?

Impact of New Standards:

1. Greater focus on fewer topics

Narrows the content in each grade and deepens the time and energy spent on the major topics
The shape of math in A+ countries

Mathematics topics intended at each grade by at least two-thirds of A+ countries

Mathematics topics intended at each grade by at least two-thirds of 21 U.S. states

Traditional U.S. Approach

- Number and Operations
- Measurement and Geometry
- Algebra and Functions
- Statistics and Probability
How is Math Changing in Our Elementary Classrooms?

Impact of New Standards:

2. Coherence: Linking topics and thinking across grades.
   • Carefully connected learning across grades so students build new understanding based on previously built foundations.
How is Math Changing in Our Elementary Classrooms?

Impact of New Standards:

3. **Rigor**: Pursuing understanding of the math concepts, methods (procedural skills), and application with equal intensity.
How is Math Changing in Our Elementary Classrooms?

In an effort to meet the Colorado Academic Standards, the Thompson School District Board of Education adopted *Math Expressions*, in May 2014.
Why Math Expressions?

- Aligned to Colorado Academic Standards (and CCSS)

- Provides a variety of tools to meet the needs of all learners
Why Math Expressions?

The why and how of math. Heavy emphasis in “Investigations”

Doing it quickly, with fluency. The “old way.” The way we were probably taught.
MATH EXPRESSIONS CORE

CLASSROOM STRUCTURES

✧ Math Talk
✧ Quick Practice
✧ Build Concepts
✧ Student Leaders
✧ Helping Community
How Can Parents Support Their Students with Math?

Parent Support Options

On-line support of grade level concepts: http://www.eduplace.com/math/mthexp13

Includes for each unit in each grade level:
• Unit Overview
• Research and Math Background
• Teaching Tools
• Math Talk Learning Community
• Problem types
Standards Based Scoring/Reporting

✧ Starting the 2014/15 school year, elementary students will have the opportunity to demonstrate their progress toward meeting grade level mathematic standards.

✧ Students’ progress toward the standards will be reported, in place of letter grades.

✧ The math portion of the report card will have a new look (see handout).
Standards Based Scoring/Reporting

For the first two reporting periods, students are evaluated based on their progress toward end-of-year standards.

✧ A score of 1 (Insufficient Progress Towards) or 2 (Progressing Towards) at the end of the first or second trimester is common.

✧ Many students will need the entire year to master the grade level standard.
Standards Based Scoring/Reporting

In the final reporting period, the report card marks reflect a student’s achievement of cumulative skills, strategies, and concepts identified in the Colorado Core Academic Mathematics Standards.
Standards Based Reporting Guide

**Exceeding (4)**- The student consistently exceeds standards as demonstrated by a body of evidence that shows depth of understanding and flexible application of end of year grade-level concepts.

**Meeting (3)**- The student is meeting the end of year grade-level standard as of this reporting period, which only includes the portion of the reported "cluster" that has been taught. *This isn’t reflective of their complete instruction in the end-of-year standard, and it might change as the year progresses. A fluctuation between 2s and 3s is not unusual.*

**Progressing Toward (2)**- The student occasionally meets standards as demonstrated by a body of evidence that shows incomplete/inconsistent understanding and application of grade-level concepts.

**Insufficient Progress Toward (1)**- The student rarely meets standards as demonstrated by a body of evidence that shows minimal understanding and application of grade-level concepts.
It is VERY Important to Note:

- 4, 3, 2, 1 does NOT equal A, B, C, D. They are **two different systems** with very different philosophical underpinnings.

- Standards-based scores are **not averages** of all of their assessed work; they are reports of each students knowledge of standards at a particular point in time.

- **WHY** the change…? To give better information.

- Parachute Packing example to follow:
Who Do You Want to Pack Your Parachute?

3 students are taking a course in how to pack parachutes
Packing a Parachute…

- The class average is the dotted line.
- Student #1: Started well, but didn't finish well.
Packing a Parachute...

- Student #2’s scores are erratic.
- It’s hard to predict how she will perform.
Packing a Parachute...

- When scores are **averaged** in the traditional fashion, **students 1 & 2 passed the course**, and **student 3 failed**.

- But......
Only Student 3 demonstrated consistent & reliable success in packing his parachute by the end.
Packing a Parachute…

- Again....
- Who Do You Want Packing Your Parachute?
Standards Based Scoring/Reporting

The student’s score for the trimester reporting will be based on a body of evidence that may include:

✧ End of Unit Assessments
✧ Quick Quizzes
✧ Independent math practice
✧ Fluency checks
✧ Teacher observation
Frequently Asked Questions

*Why can’t I just show her how to “carry the 1?”*

You CAN. Let’s be sure our students really understand the concept, then teach them the shortcut if it helps that student. But it’s important that she understands why the shortcut works. This is why we do the conceptual, THEN fluency work.

When compared internationally, our elem. students do OK. In the middle and upper grades our students fall apart. This is because students who have only learned the shortcuts can’t conceptualize and generalize. The foundations are weak, and that’s what we’re trying to fix. Once students understand conceptually, they move on; we’re NOT trying to make it harder.

Build solid foundation → Teach algorithm(s)
FAQ Continued

- **Why teach so many different ways of finding the answer?**

- Offering many models of math and many methods allows us to reach more students, as well as strengthen the reasoning and problem solving skills of everyone.

- We want to create mathematicians, not arithmeticians. Math is more than just computing—it involves problem solving and application alongside a myriad of other things.

- We are teaching students to understand and solve problems using a variety of approaches. Just as we do in our lives and work.
FAQ Continued

• *So how is this different than Math Investigations?*

• MX moves more quickly from the conceptual to the algorithmic than did Investigations. This means more practice with fluency, among other things.

• MX is aligned to CCSS, so the level of rigor and expectation is higher.

• More info in breakout sessions 😊
FAQ Continued

- *It is now November, how’s it going?*

- Going well, particularly K-3

- As predicted, grades 4-5 have the most struggles, because they were using non-CCSS materials longer.

- Even though 4-5 struggles more, they ARE making good progress, and it is still better than nor preparing students for CCSS.

- An “easy A” is not the goal; preparation for the next level is the goal.
Thank you for coming!

- Please leave your unanswered questions in the bin near the door on your way out. We will post our answers/responses on the website so everyone can benefit. We will also post notes from this meeting.

- Mr. Davis and Mrs. Neibauer will be available for questions after the break-out sessions.

- Teachers are in one class per grade level.