Our Journey on the Road of Teacher Based Professional Learning.
At the Beginning

- High Performance Leadership Team
- Focus on Common Core Math Implementation
- Staff Brainstorming Session: Needs and Desires
  ~ Organizational Structure
  ~ Professional Learning
  ~ Tools and Materials
What kind of math students do you want to promote from Apple Blossom at the end of 5th grade?
Staff Professional Development
Josh Deis Mathematics Program Coordinator, SCOE

Topics
• Habits of Mind
• Diagnostic Teaching
• Unit Design
• Reengagement Lesson and Student Observation
• Staff homework throughout
Planning Process

Plan
Agenda for Staff Development

Act/Apply
Feedback used to support staff development planning

Study/Reflect
Debrief with teachers
Reflect with leadership team

Do
Staff Development
### Shifts in leaders’ practices
- Understand why it is important to have students explain their thinking to each other,
- Support teachers’ learning about how to hold students accountable for explaining their thinking to each other, and
- Conduct frequent classroom observations looking for students’ explanations of each other’s thinking.

### Shifts in teachers’ practices
- Develop the habit of reasoning about mathematics,
- Communicate their own thinking and understand each others’ way of thinking, and
- Hold each other accountable for making sense of the mathematics they are teaching.

### Shifts in students’ practices
- Hold students accountable for producing explanations that their classmates can understand,
- Help students revise their explanations to make them easier to understand by their peers, and
- Reflect, with peers, on pedagogical decisions that help students improve their explanations

### Professional learning group inside the classroom
- Develop the habit of reasoning about mathematics,
- Communicate their own thinking and understand each others’ way of thinking, and
- Hold each other accountable for making sense of the mathematics they are learning.
Grade levels meet to plan math units
Calibrating the 5x8 Card

<table>
<thead>
<tr>
<th>Student Vital Actions</th>
<th>Principles</th>
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<tbody>
<tr>
<td><strong>All students participate</strong> (e.g., boys and girls, ELL and special needs students), not just the hand-raisers.</td>
<td>Equity requires participation.</td>
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<td><strong>Students say a second sentence</strong> (spontaneously or prompted by the teacher or another student) to extend and explain their thinking.</td>
<td>Logic connects sentences.</td>
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<td>Understanding each other’s reasoning develops reasoning proficiency.</td>
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<td><strong>Students talk about each other’s thinking</strong> (not just their own).</td>
<td>Revising explanations solidifies understanding.</td>
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<td>Academic language promotes precise thinking.</td>
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<tr>
<td><strong>Students revise their thinking,</strong> and their written work includes revised explanations and justifications.</td>
<td>ELLs develop language through explanation.</td>
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<td>Productive struggle produces growth.</td>
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<tr>
<td><strong>Students look for more precise ways of expressing their thinking,</strong> encouraging each other to look for and use <strong>academic language.</strong></td>
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<td><strong>English learners produce language</strong> that communicates ideas and reasoning, even when that language is imperfect.</td>
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<td><strong>Students engage and persevere</strong> at points of difficulty, challenge, or error.</td>
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Math Talk Stems

• I agree with ____ because...
• I disagree with ____ because...
• That is a good answer because...
• I got different results because...
• My strategy is like yours because...
• What I heard you say was...

Discussion Language Frames

• I think ____ because ____
• I noticed/observed/heard ____ and so I think ____
• I agree with ____ because ____
• I respectfully disagree with ____ because ____
• I would like to add on to what ____ said...
APPLE BLOSSOM STAFF

YOU ARE CORDIALLY INVITED TO ATTEND THE FIRST MEETING OF THE

APPLE BLOSSOM MATH SUPPORT GROUP
(aka MSG)

WHERE: Room 4
WHEN: Monday, December 8th 3:20 – 4:20
WHAT TO BRING:
- A DESIRE TO DISCUSS MATH IMPLEMENTATION IN YOUR CLASSROOM
- A MUG TO ENJOY HOT TEA

SWEET TREATS WILL BE PROVIDED

PLEASE RSVP TO HEATHER TYLER OR BRULENE ZANUTTO
Teachers Design Staff Development Based on Learning Needs
What effect does erosion have?
Why is erosion a problem?

We are here to talk about erosion and our idea to stop the problem of erosion on the hill the 4th and 5th graders got down after lunch.

By Aya Hailey, Mayu, and Emerson

Stop erosion on our hill

Erosion is the carrying away of weathered earth materials by water, wind, or ice. In this case, we see rain as the problem.

Last year everyone in Mrs. McDowell’s class was stuck in her classroom because they were flooded! This is all because of erosion. The particles from the hill clogged up the storm drain so the rain couldn’t go down the storm drain and that is how Mrs. McDowell class got flooded in. Also, erosion can be bad for the environment, turning things barren and dull.

Our solution and why it would work:
Our solution is planting trees in the line which put down and then rain would flow into the planter. This would then protect the earth from erosion.

Here is an oak sapling:

This is a redbud sapling:

Our solution will just look blue and sad for a little while. But then the plants will grow and saplings next to the trees.
Staff Learning
Now and Next Steps

- Piloting Problem of the Month
- Engaged in selecting math curriculum
- Summer staff book club
- Summer opportunity to create units and materials.
- Determine our main focus for next year
What conditions enabled us to accomplish this?

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<thead>
<tr>
<th>Structures</th>
<th>Cultural Norms</th>
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<tbody>
<tr>
<td>• Grade Level meetings</td>
<td>• Safe to take risks</td>
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<td>• Weekly leadership meetings</td>
<td>• Diverse thinkers</td>
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<td>• Teacher on Assignment</td>
<td>• Willing to ask for help</td>
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<td>• School Leadership Coach</td>
<td>• Inventive/Creative</td>
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<td>• Resourceful</td>
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