

December 2018

Muir Lesson Study News!

Math Talk Moves in Mr. Tamsky's Class!

Congrats to the 4/5 Cross Site Lesson Study Team!

Our 5th grade teachers engaged in a cross site lesson study team with teachers at Hillcrest Elementary. They planned a unit and public lesson with the Muir Research Theory of Action at the forefront. They planned and reflected about how to get our scholars engaged in mathematical discourse around one of the toughest math topics: Long Division! A few key learnings from the team: **First, wait time is key!** Give students at least 8 seconds of wait time before interjecting or calling on a student. **Second, question frames for students provide access!** Mr. Joe and Ms Carter created high level question frames for students and glued them on their notebooks. They also used these same questions to push students thinking and model the kind of questions they wanted students to begin to ask each other. We saw a huge increase in student to student questioning. **Finally, students need to speak up!** The team pushed their students to consider what role they played in the discussion. Students decided, yes-it is important for me to speak loud enough for everyone to hear my important ideas!

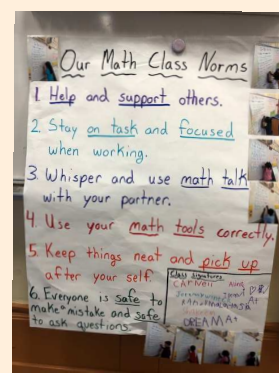
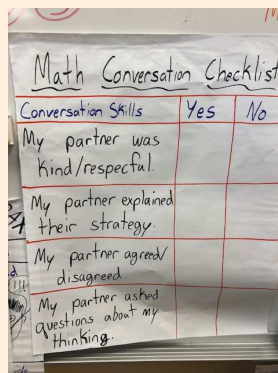
Please consider trying out one of the three strategies the team found success in!

| | |
|---|--|
| What convinced you that was the right answer? | Can you explain your idea, step by step? |
| How can you prove that? | What do others think about what he/she said? |
| What does _____ represent in the problem? | _____ is similar to _____'s strategy because _____ |

5th grade question frames glued to each students math notebook

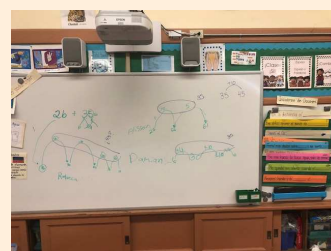
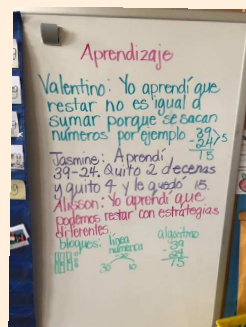
Around Muir

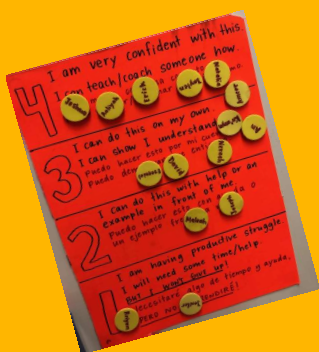
The K/1 team is working on setting up classroom math discussion norms and working towards Step 2 of Productive Talk: **Students orienting to the thinking of other's**. Think: "Hey kid, did you catch that great idea?" Seems easy, unless you're 5! Check out some anchor charts they've been using as they develop this key listening skill with their scholars.



If you are interested in seeing some of their scholars in action, [check out this link!](#)

Our 2nd Grade Team is working on using students ideas and strategies to make student thinking visible during their problem solving lessons! They anticipate what students will do and are interested in the different kinds of questions that will help to support students' ability to explain their thinking and reasoning. Check out Ms. Alley' student created board work and their learning reflections!





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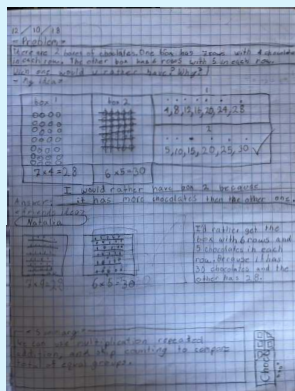
Ms. Casey's students self assess their learning at the end of each math class!

Our Third Grade Team is deep in the study portion of the lesson study process. They have decided to engage in a learning module created by Mills College to help them better understand the progression of fractional reasoning in third grade. At the same time, they are focused on Step 3 in the Steps towards Productive Talk and Questioning: **Helping students deepen their own reasoning**. They also created sentence stems for students to provide language access to our scholars. Check out their sentence stems!

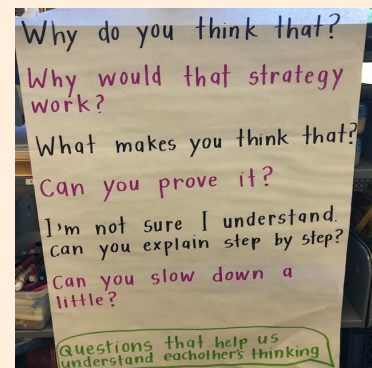
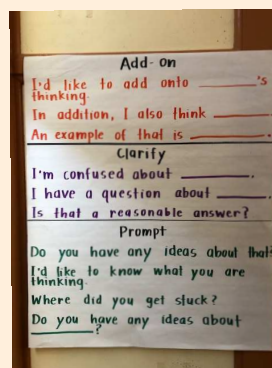
| | |
|-----------------|--|
| Agree | I agree with _____ because _____. |
| | I agree, but I also think _____. |
| Disagree | I disagree with _____ because _____. |
| | I'm not sure I agree with what _____ said because _____. |
| | I see it differently because _____. |

| Add-on | Clarify | Prompt |
|---|--------------------------------|--|
| I'd like to add on to _____'s thinking. | I'm confused about _____. | Do you have any ideas about that? |
| In addition, I also think _____. | I have a question about _____. | I'd like to know what you're thinking. |
| | | Where did you get stuck? |

They are also working on developing the use of notebooks and board work to make student thinking visible in their classrooms. Take a look at this Math notebook from Mr. S's class and some students deep in thought around board work in Mr. Tamsky's class!

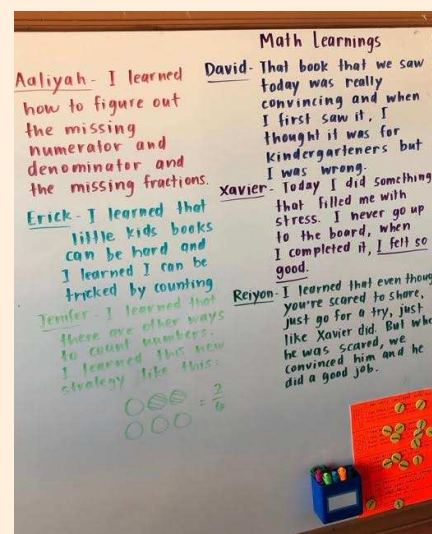


Our 4/5 Team is also thinking deeply about what kinds of questions we are asking our students. They are working on Step 3: **Helping students deepen their own reasoning** and Step 4: **Helping students engage in the reasoning of others**. The team has decided to focus on using specific questions with students that they believe will best support students ability to construct viable arguments and critique the reasoning of others. Ms. Cowles, our Literacy "only" member, has been applying the same questioning stems to her Reader's Workshop lessons. She's found them particularly useful in her students study of non-fiction text!



The 4/5 Team uses Questioning Anchor Charts like these.

The 4/5 team posts student math reflections daily as one way to make student thinking visible in their classrooms.



Peirce Math News

Connecting our thinking around teaching and learning math school-wide.

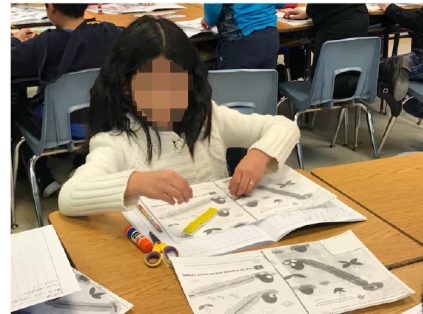
CONGRATULATIONS!

Congratulations on another school year in the books. Enjoy your vacation. It is well deserved!

RESEARCH LESSONS and REFLECTIONS from SEMESTER 2

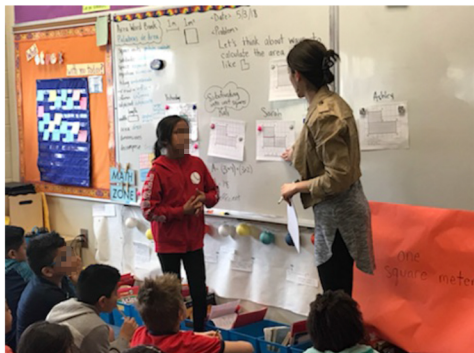
2nd Grade: Length Measurement with Standard Units

The 2nd grade team planned a lesson in which students learned an authentic reason for using a standard unit, the centimeter. In the post-lesson discussion, we reflected on the importance of “tension” in a lesson to compel the class to understand something new.



1st Grade: Addition with Regrouping

Teachers from K and 1st planned a lesson on addition. The goal was to help ALL students develop a concrete understanding of regrouping. We talked about the importance of students having regular opportunities to set up numbers with their block kits in kindergarten, so they can successfully use blocks to model calculations later on in K and 1st.



3rd Grade: Area

Teachers from 3rd and 4th planned a lesson on finding the area of a composite shape. Our goal was to help all students access a difficult problem. We reflected that the supports we planned might have taken away chances for each student to approach the problem on their own first. We also realized that sometimes the most simple, concrete solutions (tiling, in this case) can be the most powerful to help the class understand a new concept.

5th Grade: Dividing by a Fraction

Mr. Lerner researched, planned, and taught a lesson on dividing by fractions. Some thoughts: 1) It's really hard to understand what it means to divide by a fraction. A whole lesson could be spent on one scenario and understanding why division would be necessary; 2) visuals in this lesson helped students concretely understand the situation; 3) it's best to avoid talk of “multiplying by the reciprocal” and instead focus on how multiplication and division were used in the calculation.

MATH TALKS and CLASS DISCUSSIONS

In January, Ms. Kerkstra and Ms. Harris presented a PD session on math talks--short mental math routines that help students develop number sense and calculation strategies. Mr. Lerner presented on the topic of class discussions in math, looking at a lesson facilitated two different ways by two different teachers. We reflected on the “5 Practices for Orchestrating Productive Mathematics Discussions” (NCTM): *anticipating, monitoring, selecting, sequencing, and connecting*.

SPRING CONFERENCE

Many staff attended the Chicago Lesson Study Conference. We saw a 2nd grade lesson on numbers beyond 1,000 and a 7th grade lesson on combining like terms. The experience was very energizing!

- It was exciting to see how the teachers chose to sequence the ideas of the students during the lessons.
- We want to develop our *bansho*, carefully planning the ideas from the lesson to be written on the board.
- We learned about *re-engagement lessons*, in which student misconceptions are revisited and clarified after a formative assessment reveals some confusion.
- We talked about choosing one shared theme to focus on for next year, such as student note-taking, or encouraging precision in mathematical language.



ST MATH



Taking into account students who moved beyond grade level, average syllabus progress this year at Peirce was 83%. How was your experience with ST Math? Which puzzles were the biggest roadblocks for the class? Next year, consider making a plan to help students move past these hurdles -- perhaps a whole-group lesson up front or a graphic organizer or manipulatives prepared ahead of time.

MATHAPALOOZA and LOOKING AHEAD

Congratulations to the 6th grade team on Mathapalooza and ending the year with a bang! Looking ahead, if you have something you want to keep developing as part of your instructional practice, or something you are proud of that you want to share with others, or an idea for math-related practices at Peirce -- please share as we head into next year. Enjoy your summer!