FRANKLIN-MCKINLEY MATHEMATICS INITIATIVE

Meeting 1: February 9, 2016 Instructional Team Training

FM District Office 3:30-5:30

Session Outcomes:

- To meet participants
- To develop group norms for working and learning together
- To review grant requirements
- To assess teacher needs in mathematics
- To explore patterns and functions

Facilitators:

- Ms. Margaret Bonanno
- Dr. Brent Duckor
- Dr. Cheryl Roddick
- Dr. Joanne Rossi Becker
- Dr. Patty Swanson

Norms (examples below):

- Smart technology-free zone (closed laptops)
- Cellphones on vibrate
- Active listening
- Active participation

MEETING 1 AGENDA

3:30 – 3:35	Welcome (Juan Cruz, Stella Kemp, Karen Allard)
3:35 – 3:45	Overview of Project (Patty Swanson)
3:45 – 3:55	Getting to Know Us (Margaret Bonanno)
3:55 – 4:00	Setting Norms (Margaret Bonanno)
4:00 – 4:05	Assessment Themes (Brent Duckor)
4:05 – 4:20	Needs Assessment (Brent Duckor, Patty Swanson)
4:20 – 5:15	Exploring Patterns and Functions (Joanne, Cheryl)
5:15 – 5:25	Debriefing: Implementing High Leverage Bundles in Teaching and Learning (Patty Swanson)
5:25 – 5:30	Plus/Delta Evaluation (Margaret Bonanno)

Franklin-McKinley Mathematics Initiative
Creating a Deep Understanding of Mathematics for All Students

The Franklin-McKinley Mathematics Initiative is a two year grant funded by the Improving Teacher Quality Program of the California Department of Education, California Elementary Mathematics and Science Professional Learning Initiative. Funds support a partnership between San José State University and the Franklin-McKinley School District. The participating university departments are Teacher Education, Mathematics and Statistics, and Educational Leadership. The purpose of the grant is to provide in-depth teaching and learning opportunities in mathematics for collaborative teams of elementary educators to improve instructional practice and develop leadership.

Purpose: (1) To address the decreasing mathematics scores from third through sixth grade by developing effective mathematics lessons and assessment that align with the CACSM and CAASPP, (2) to foster leadership through the development of collaborative instructional teams that can expertly identify and solve problems of practice, and (3) to support principal instructional leadership.

Goals/Outcomes: (1) Identify, implement, evaluate, and produce effective math lessons using Problems of Practice (POP) and Universal Design Learning (UDL) processes. (2) Produce math lessons using the high-leverage bundles criteria. (3) Model collaborative team leadership while using reliable assessments to guide curricular decision making.

Timeline: January 2016 through December 2017 (56 hours each year)
Instructional Team Meetings: Tuesdays eight times; for 2016 February 9, March 8, April 5, May 10, 2016 (3:30-5:30 for 16 hours)
Instructional Team Meetings Summer Institute I: June 13-17, 2016 (40 hours)
Instructional Team Meetings: Eight times September-December 2016-17 (3:30-5:30 for 16 hours)
Instructional Team Meetings Summer Institute II: June 2017 (40 hours)

Budget: $500,000
Teacher stipends: $5000.00 and 12 continuing education units for two years

Participants: Five schools with teams of 5 classroom teachers, the Curriculum Support Specialist, and the principal. The schools are Dahl, Lairon, Ramblewood, Shirakawa, and Stonegate.

Alignment: The project is aligned with the district LCAP goals.

Professional Learning Activities: Professional activities will center around investigating student data, analyzing what the data shows, identifying best practices and strategies that can have the most positive effect on student learning of the CACSM, practicing the strategies, observing student learning, assessing student learning, and modeling peer feedback through the use of educational rounds.

Building Instruction: The structures that will be developed by the instructional teams will focus on organizing, designing, implementing, and assessing instructional practices that will develop a deep understanding of mathematics for the students in Franklin-McKinley.

Professional Development Schedule
The foci of each professional development module are:
February-May 2016

- Identifying collaboration model strategies to be used by the instructional teams.
- Identifying and developing reliable data.
- Analyzing student data and identify areas of focus for student growth.

- Identifying Problem s of Practice (POP).

June 13-June 17, 2016

- Focus on understanding math domains (1) operations and algebraic thinking; (2) whole number, fractions, and operations; (5) expressions and equations; (7) measurement and data.
- Development of lesson plans the include understanding the underlying concepts, selecting the right tasks, use of appropriate mathematical practices, and the development of content literacy strategies (i.e., high leverage bundles).
- Analyzing student work.

September 2016-May 2017

- Development of lesson plans the include understanding the underlying concepts, selecting the right tasks, use of appropriate mathematical practices, and the development of content literacy strategies (i.e., high leverage bundles).
- Developing videos of math lessons.
- Analyzing observations from educational rounds and math videos.
- Developing formative assessments and analyzing results.

June 2017

- Focus on understanding math domains (3) ratios and proportional relationships; (4) number system; (6) geometry; (8) statistics and probability.
- Development of lesson plans the include understanding the underlying concepts, selecting the right tasks, use of appropriate mathematical practices, and the development of content literacy strategies (high leverage bundles).
- Analyzing student work.

September –December 2017

- Development of lesson plans the include understanding the underlying concepts, selecting the right tasks, use of appropriate mathematical practices, and the development of content literacy strategies (high leverage bundles).
- Developing videos of math lessons.
- Analyzing observations from educational rounds and math videos.

Parent Communication: There will be a web page in the FMSD website that will provide relevant information about the project.

District Communication: The work of the project teams will be showcased district-wide to all educators and the school board.

Project Evaluation: Formative and summative evaluations of the project activities will be developed based on the California Department of Education standards for quality professional development (*The Superintendent's Quality Professional Learning Standards).*

Project Evaluation:

1. Informal principal interview to understand the school culture and challenges December.
2. Teacher pre-assessment for math domains May 2016.
3. Teacher post-assessment for math domains June 2016.
4. Qualtrics surveys of principals and teachers to collect on-going information.
5. Monthly Educational Rounds.
6. Interviews with the principal and their teams about the collaborative process.
7. Teacher pre-assessment for math domains May 2017.

8. Teacher post-assessment for math domains June 2017.

SJSU Partners: Modeling Trust and a Shared Commitment

- Joanne Rossi Becker, Professor Emerita, Department of Mathematics and Statistics, SJSU
- Margaret Bonanno, Lecturer, Department of Educational Leadership, SJSU
- Hazel DeAusen, Associate Research Analyst, Santa Clara County Office of Education
- Brent Duckor, Associate Professor, Department of Teacher Education, SJSU
- Ferdinand Rivera, Chair, Department of Teacher Education, SJSU
- Cheryl Roddick, Professor, Department of Mathematics and Statistics, SJSU
- Patricia Swanson, Professor, Teacher Education, SJSU
- Carrie Holmberg, Project Researcher, EdD Program, SJSU

Project Terms:

1. Academic content literacy teaching includes the teaching of mathematical terms, integrating oral and written English language instruction into mathematics teaching, and providing opportunities to develop reading and writing skills.
2. Benchmark assessments (example STAR Renaissance) are short tests that give teachers immediate feedback on how students are doing meeting academic standards.
3. Collaborative Model is based on the practices described in *Learning by Doing*, a book describing a model of collaboration.
4. Educational rounds are a set of protocols and processes for observing, analyzing, discussing, and understanding instruction that can be used to improve student learning.
5. Formative assessments are used to inform both the teacher and the student of the student's progress so that appropriate steps can be taken to advance the student's learning. These assessments measure a few things frequently (pages 63, 75 *Learning by Doing).*
6. High-leverage bundles refer to content, pedagogy, curriculum, and teaching strategies/learning that linked together yield a high impact on student learning.
7. Problems of Practice (POP) is an identified issue in the instructional program that if addressed can make a difference in student learning.
8. Qualtrics is an online survey system that will gather anonymous participant information.
9. Summative assessments (example CAASPP, CST) determine if students have met intended standards by a specific time (page 75, *Learning by Doing).*
10. Universal Design for Learning (UDL) is a framework for understanding how to create lessons/units of study with a focus on how humans learn.

Revised January 25, 2016

Square Tiles

Tiles are arranged to form figures like the ones below. We want to count the number of white tiles in each figure.

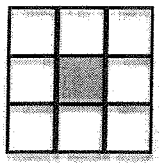


Figure 1

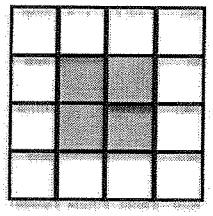


Figure 2

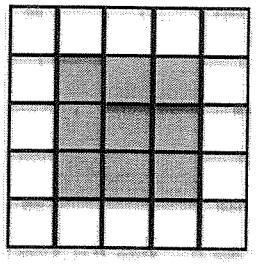


Figure 3

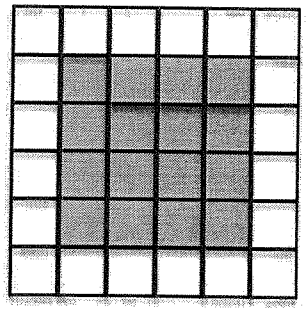


Figure 4

1. What should the 5th figure look like? Draw it on your paper.

2. How can you describe the way the pattern is growing? Can you find more than one way?

3. How many white tiles would be in the 10^{th} figure of the pattern? What would it look like?

4. How many white tiles would be in the 30^{th} figure? How can you describe the figure *without* drawing the entire thing? Can you describe it in words, numbers, or a simple diagram? Be ready to explain your ideas to the class.

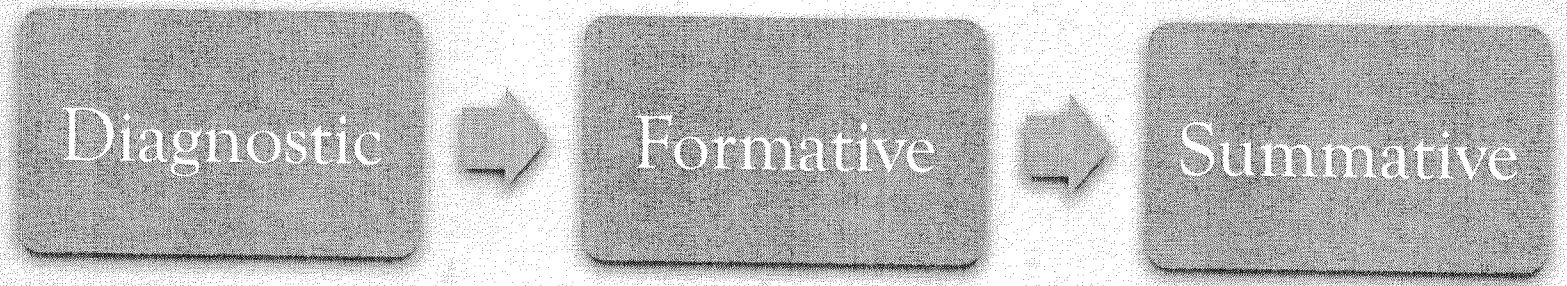
5. Maria used 64 white tiles to build a figure in this pattern. Which figure number did she build? Explain how you figured it out.

6. Work with your team to find a way to describe ***any*** figure in the pattern. In other words, if you knew a figure number, call it ***n***, how would you decide what the figure looks like even if you cannot draw it? How many white tiles would Figure ***n*** have? Express your answer in words, symbols, and graphically.

7. In your group discuss where a patterning problem like this might arise in your grade level curriculum. How might you adapt it for your specific grade level?

8. Discuss the language demands of the problem and how you might address them.

Three Main Purposes



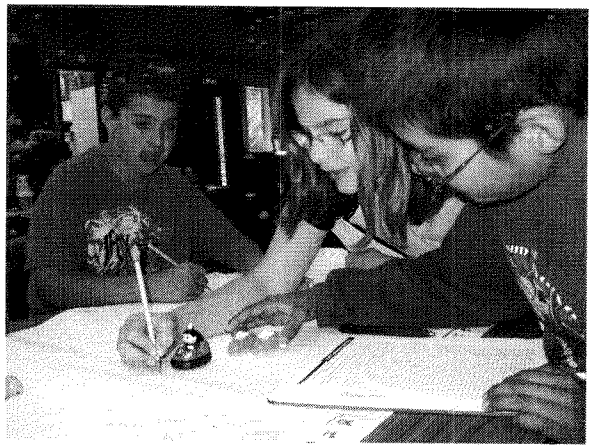
What's comes to mind when you hear..?

Quick Write

What makes it so difficult to formatively assess your students?

The Franklin-McKinley Mathematics Initiative

Practice Based Collaboration



Structure

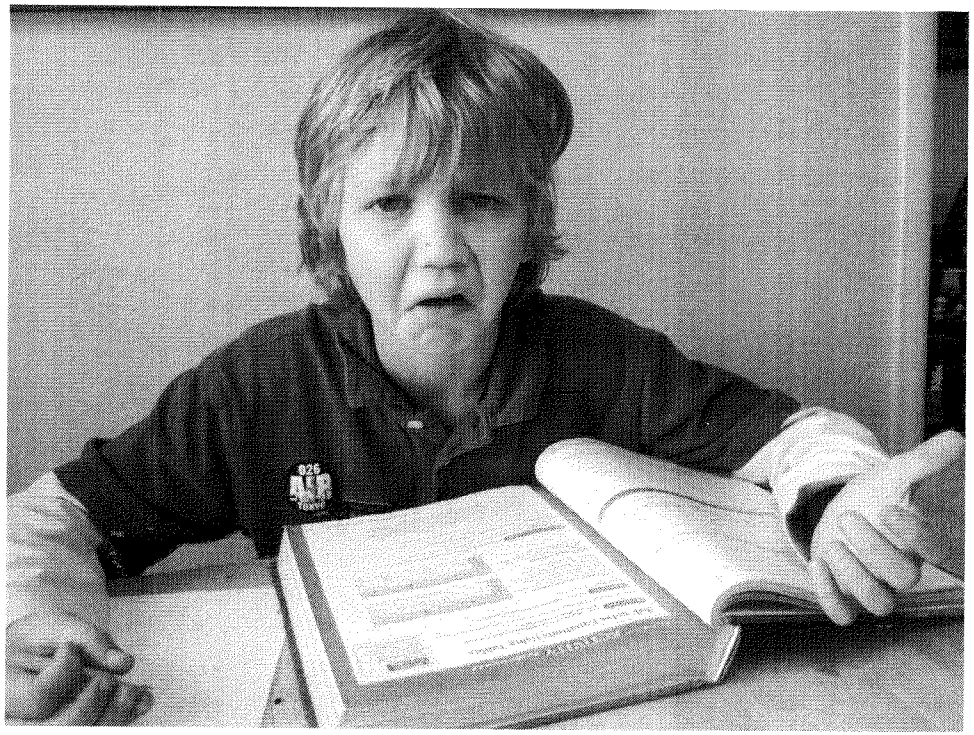
- Mathematics
- Collaborative Teams &

  University District Collaboration
- Timeline: Monthly Meetings &

  Summer institutes
- Problems of Practice & Professional Development

Problems of Practice

Hayley borrowed $1,854 from her parents. She agreed to repay them in equal installments throughout the next 18 months. How much will Hayley still owe her parents after a year?
(EngageNY, grade 5)



Mathematical Practices

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

High Leverage Practices in Teaching Mathematics

1. Explaining core content
2. Choosing and using representations, examples, and models of content
3. Designing a sequence of lessons on a core topic
4. Enacting a sequence of lessons on a core topic
5. Using homework equitably
6. Setting up and managing small-group work
7. Using public recording (posters, whiteboard)
8. Establishing norms and routines for classroom discourse and work that are central to the content
9. Working with individual students to elicit, probe, and develop their thinking about content
10. Recognizing and identifying common patterns of student thinking in a content domain
11. Identifying and implementing an instructional strategy or intervention in response to common patterns of student thinking
12. Leading a productive whole class math discussion
13. Teaching and using a academic language
14. Choosing, appraising, and modifying tasks, texts, and materials for a specific learning goal
14. Composing, selecting, adapting quizzes, tests, an other methods of assessing student learning of a chunk of instruction
16. Selecting and using specific methods to assess students' learning on an ongoing basis within and between lessons