BEAVERTON SCHOOL DISTRICT

BOARD MEETING DATE
MARCH 13, 2017

WE EXPECT EXCELLENCE WE INNOVATE WE EMBRACE EQUITY WE COLLABORATE

MATHEMATICS ADOPTION RECOMMENDATIONS & MATHEMATICS PROJECT TEAM FINAL REPORT – PHASE II

POLICY ISSUE/SITUATION:

The Mathematics Project Team was charged to conduct a curriculum review and make recommendations to the Board in accordance with the District's Quality Curriculum Cycle. The Project Team Report (Phase II) is being presented to the Board and, as a part of that work, the recommendations for instructional materials for Grades K-8, Implementation and Professional Development Plan for Grades K-8 are being presented for Board approval.

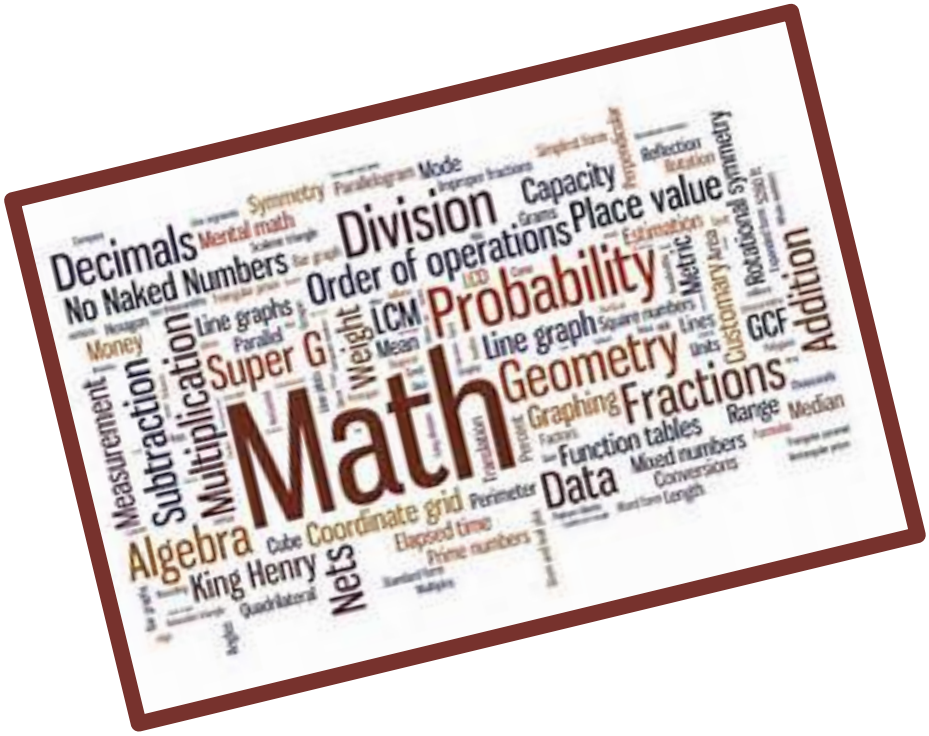
BACKGROUND INFORMATION:

During Phase I, the Mathematics Project Team completed an evaluation of the current program, reviewed current research on effective practices and programs, produced a Position Paper articulating a vision and direction for the program, and made recommendations for instructional and assessment practices. Learning Targets for grades K-12, based on the Common Core State Standards, were also created. Instructional materials for Algebra, Geometry, and Statistics were selected and a professional development plan for their implementation was developed. The Mathematics Project Team Report (Phase I) includes all of these documents and recommendations, and was approved by the School Board at the June 13, 2016 meeting.

Phase II of the Mathematics Project Team included review of data as well as further research in mathematical practices at the elementary and middle school level. Based on the documents and recommendations approved by the School Board in Phase I, the Project Team made recommendations for instructional resources, professional development, and implementation support for grades K-8. Budget implications were considered. An overall goal of Phase II was to create greater alignment of instructional practices in Mathematics at all grade levels.

RECOMMENDATION:
It is recommended that the School Board accept for review and consideration the Phase II Mathematics Project Team Report.

Mathematics Project Team Report Phase II *2017*



Mathematics Project Team
Phase II Report
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BEAVERTON SCHOOL DISTRICT

March, 2017

In November of 2015, the Beaverton School District Board charged the Mathematics Project Team with the task of evaluating and making specific programmatic recommendations for the District. The Mathematics curriculum review, as outlined in Board policy and administrative regulation for the Quality Curriculum Cycle, was to include learning targets, instructional practices, assessment, instructional materials and staff development.

Within the review process, the Mathematics Project Team studied math education in the context of today's world. The focus on and demand for higher levels of mathematical problem-solving is evident in the Common Core State Standards, as well as within the skill set deemed essential for college and career readiness and success. Our goal is to prepare students to engage in the world as critical thinkers and culturally competent citizens; this requires all students to be highly literate in mathematics.

The work of this project team has placed an intentional focus on best practices in mathematics instruction, as well as professional development for educators. In addition to the review of student data, the Cadres and Project Team engaged in deep discussion about the essential practices in every classroom, as well as the necessary professional learning needed to support these practices.

During Phase I, the Mathematics Project Team completed an evaluation of the current program, reviewed current research on effective practices and programs, produced a Position Paper articulating a vision and direction for the program, and made recommendations for instructional and assessment practices. Learning Targets for grades K-12, based on the Common Core State Standards, were also created. Instructional materials for Algebra, Geometry, and Statistics were selected and a professional development plan for their implementation was developed. The Mathematics Project Team Report (Phase I) includes all of these documents and recommendations, and was approved by the School Board at the June 13, 2016 meeting.

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As a result, the Project Team defined a comprehensive set of recommendations that includes:

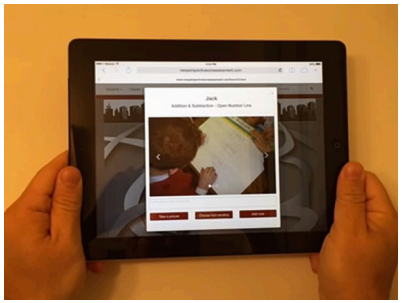
- Position Paper
- Best Practices in Mathematics
- Learning Targets
- Data Statements and Synthesis
- Instructional Materials Recommendation
- Professional Development Framework
- Mathematics Implementation Plan

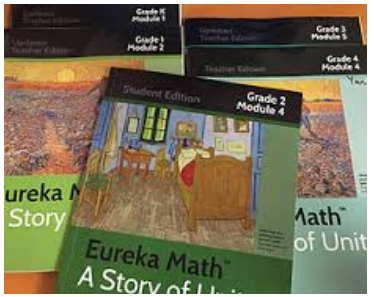
These recommendations point the District towards high quality instructional practices that engage and challenge students in 21st century mathematical learning.

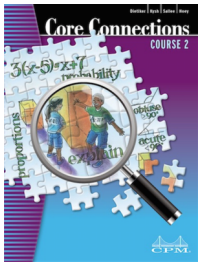
Ginny Hansmann, Chief Academic Officer
Jared Cordon, Administrator for Elementary Curriculum, Instruction, and Assessment
Ken Struckmeier, Administrator for Secondary Curriculum, Instruction & Assessment
Rebecca Carney, Elementary Math Specialist ✦ Debbie Hicks, Secondary Math Specialist
Geoff Hunnicutt, Secondary Curriculum Developer ✦ Dennis Williams, Secondary Math Specialist

MATHEMATICS ADOPTION INSTRUCTIONAL RESOURCES

Elementary

Instructional Focus	Vendor	Description	Image
Contexts for Learning Mathematics Units	Heinemann DEDICATED TO TEACHERS	The ***Contexts for Learning Mathematics*** series by Catherine Fosnot and colleagues uses carefully crafted math situations to foster a deep conceptual understanding of essential mathematical ideas, strategies, and models. Building on the ideals of a math workshop, each unit provides a two-week sequence of investigations, minilessons, games, and other contexts for learning. The series' 24 classroom-tested units are organized into three age-appropriate packages.	
	New Perspectives on Assessment Documenting the Journey	With *New Perspectives on Assessment*, you can easily document each student's strengths, struggles, and journeys. • Individual landscapes for each student • Glossary • Transfer landscapes from grade to grade • Administrative access for principals and/or coaches • Printable rubrics and assessments and teaching implications.	

Elementary			
Instructional Focus	Vendor	**Description**	**Image**
Eureka Math/ Engage NY	EUREKA MATH ZEARN AND dreambox LEARNING OR Front Row	*Eureka Math*—also known as EngageNY—is a complete, PreK through 12 curriculum that carefully sequences the mathematical progressions into expertly crafted modules. **Curriculum modules include:** • Year-long scope and sequence documents • Module framing/overview documents • Performance tasks (for administration in the middle and at the end of each module) • Lesson plans and supporting materials (homework, exit slips, etc.) Zearn Math is based on Eureka Math / EngageNY and designed to partner with teachers to create a personalized learning experience for every student. DreamBox and Front Row provide continuous formative assessment to strategically increase the learning of struggling, advanced and on-level students. Teachers and parents have access to individual student data to monitor progress.	
Manipulatives for Hands-On Learning	Multiple	Lists of necessary manipulatives for each classroom will be created for teachers to order any items they do not already have.	

Elementary			
Instructional Focus	**Vendor**	**Description**	**Image**
Professional Development for Teachers	New Perspectives Online A PERSONALIZED PROFESSIONAL SUPPORT SYSTEM™	**NewPerspectives Online: a Personalized Professional Support System™** provides an on-demand, self-directed, multi-pathway system for professional learning. Using a rich library of NSF-funded classroom videos, the platform includes authentic examples and learning activities that support teachers new to the math workshop model. It is aligned with the classroom units in *Contexts for Learning Mathematics* and also offers explorations and feedback with the authors for deeper study.	
Middle School			
Instructional Focus	**Vendor**	Description	**Image**
Core Connections	**College Preparatory Math**	**CPM began as a grant-funded mathematics project in 1989 to write textbooks to help students understand mathematics and support teachers who use these materials. CPM Educational Program is now a nonprofit educational consortium of middle and high school teachers and university professors that offers a complete mathematics program for grades 6 through 12 (Calculus) designed to engage all students in learning mathematics through problem solving, reasoning, and communication.** **CPM's Mission: CPM's mission is to empower mathematics students and teachers through exemplary curriculum, professional development, and leadership. We recognize and foster teacher expertise and leadership in mathematics education. We engage all students in learning mathematics through problem solving, reasoning, and communication.** **CPM's Vision: CPM envisions a world where mathematics is viewed as intriguing and useful, and is appreciated by all; where powerful mathematical thinking is an essential, universal, and desirable trait; and where people are empowered by mathematical problem-solving and reasoning to solve the world's problems.**	

		Instructional Components • Student 8-year eBook (English & Spanish) • Student Edition Hardbound Textbook (English & Spanish) • Teacher Edition (eBook & Support Binders) • Parent Guide with Extra Practice • Algebra Tiles, Integer Tiles, Tool Kits • Homework Help • Video Models for Teachers	
Middle School			
Instructional Focus	**Vendor**	**Description**	**Image**
Core Connections Professional Development for Teachers	**College Preparatory Math**	**CPM Professional Development Vision: to build the capacity of all teachers to have confidence in the mathematical content, plan lessons purposefully, assess understanding and give effective feedback to students, and work in the role of the more knowledgeable person in the classroom through engagement in CPM Professional Learning. This will be accomplished by working in partnerships with teachers, schools, and districts. Because one of CPM's core beliefs is that learning, change, and mastery takes time, professional learning is a multi-year partnership facilitated by a knowledgeable, trained cadre of teacher leaders, coaches and regional coordinators. The professional learning is delivered through face to face workshops, implementation mentoring via email and classroom visits, webinars, coaching, small group cohorts, and ongoing opportunities for collaboration.**	
Instructional Focus	**Vendor**	**Description**	**Image**
Manipulatives for Hands on Learning	**Hands to Mind**	**Integer and algebra tiles will be an integral part of the middle school classroom.**	 

	Math Implementation / Professional Development Plan	
	Initial	**Ongoing**
Elementary	❖ 1 day in August for all staff ❖ Building leaders meet throughout the year ❖ Utilize early release for math teacher collaboration in building and district-wide	❖ 1 day in August for all staff new to grade level ❖ Building leaders meet throughout the year ❖ Utilize early release for math teacher collaboration in building and district-wide
Middle	❖ New to CPM teachers: 4 days before school/4 days throughout school year, plus 2 site visits ❖ CPM pilot teachers: 3 days before school and/or during the school year, plus 2 site visits ❖ Building leaders meet throughout the year ❖ Utilize early release for math teacher collaboration in building and district-wide	❖ New to CPM teachers: 4 days before school/4 days throughout school year, plus 2 site visits ❖ CPM year 2 teachers: 2 days before school/1 day during the school year, plus 2 site visits ❖ CPM year 3 and beyond teachers: Possible continued coaching/site visits through CPM ❖ Building leaders meet throughout the year ❖ Utilize early release for math teacher collaboration in building and district-wide
High	❖ Professional Development focused on instructional philosophy of the materials and module overviews for new teachers (3 days in summer and additional days throughout the year) ❖ AGS Optional Professional Development Opportunities	❖ Professional Development focused on instructional philosophy of the materials and module overviews for new teachers (3 days in summer and additional days throughout the year) ❖ AGS Optional Professional Development Opportunities

Math Project Team Session Notes January 18, 2017

Introductions

New T&L Administrators for Curriculum, Instruction and Assessment

- Elementary – Jared Cordon
- Secondary – Ken Struckmeier

Adoption Process Review – Project Team 2015-16 – Handouts

- Excerpts from the May 2016 Math Board Report – Phase I
    - Report letter of Introduction
    - Position Statement
    - Best Practices
- Elementary & Secondary Cadres provided support in creation of documents
- Focus on the Five Dimension developed by the Center for Educational Leadership (CEL)
- Phase I report was accepted and approved by the School Board
- MVP currently being implemented at the HS level. 3 year process and will be reevaluated at the end of that time

Middle School Instructional Resources

- Four programs were selected for review based on the above documents
    - Connected Math, Eureka Math, Carnegie Learning, College Preparatory Math
    - Math Cadre selected CPM to pilot
    - Being piloted using electronic devices
    - Classroom sets of books will be utilized in addition to electronic delivery
- Teacher comments on CPM – Handout
- Project team members read comments, took notes & discuss
    - All schools were represented even if not participating in the pilot (attended trainings and meetings although not actually teaching the materials)
    - Purchasing e-books for all students and one set of class textbooks would be the most economical way to go. Licensing is included in the purchase of the textbook
    - CPM provides extensive professional development at no additional charge
    - All the materials considered met Common Core/State Standards
    - Mathematical practices are a big component of the State Standards and supported by CPM
    - Concerns about implementation – slow rollout? Will be further discussed, but are considering starting all three grades at the same time. Pilot is reflecting all grade levels
    - The quicker K-12 can be aligned, the better it will be for student learning
    - Students are currently being taught math at their own level, not restricted to grade level
    - Extensions will always be needed for students at the upper end and not adequately provided by any one publisher program
    - Student communication is being assessed. CPM encourages engagement and communication
    - CPM has been around for several years and data is available on standardized assessments
    - Targets need to match the materials better and if CPM is adopted they will be revised
    - Research shows that critical thinking skills, and deep understanding aids in retention
    - Available in Spanish
    - License purchase are good for 6 years
    - CPM is a local, grass roots, company with educator created materials. Founded in 1989
    - Home internet access is a concern. Affordable/supplement options are available
    - Alternative curriculum resources (hardcopy, etc) can be supplied
    - Electronic Parent supports are available

- No decisions are being made at this time to move forward to the board. CPM is clearly the leader at this time
- It needs to be determined if the piloting teachers' opinions are representative of all math teachers
- The 2/15 Project Team meeting will be decision making time. Additional pilot teacher input will be provided

Elementary instructional resource update

- Started in November 2015 gathering survey info
- Engage NY has been used since Common Core, as the adopted Everyday Math did not adequately meet needs
- Engage NY was officially Board approved as supplemental material and has been used by the majority of elementary teachers since the 2014-15 school year
- Survey (handout) reflects teacher level of support
- April 2016 four publishers presented materials – results were inconclusive
- November 2016 new materials are being piloted with workshop model that has recently been adopted for ELA - Contexts for Learning. Materials are meant to be supplemental. Online PD is available
- Majority of the time is spent with kids working and talking, less teacher monopolized
- Cadre currently does not have consensus, but hopes to have a recommendation by the February PT meeting
- Cadre feels that emphasis to be placed on PD and teaching practices
- January 26 Elementary Cadre meeting will hopefully produce recommendations
- Suggested that additional investigation should occur at the other 3 publisher materials presented in April – Everyday Math 4, enVision & Bridges, as well as the new supplemental materials being considered
- Goal is to move the majority of teachers in the direction established in our Best Practices document

Alignment/Coherence

- Teaching is extremely complex and we need to clearly articulate expectations for student learning and achievement
- Adoption process needs to be complete by June

Next Steps

- MS pilot teachers will be meeting the beginning of February
- Results of that meeting to include clear recommendation of MS materials to be adopted by the February 15 Math Project Team meeting
- Elementary cadre will meet 1/26
- The Elementary Math Cadre will engage in a thoughtful discussion regarding the math materials and compile their collective thoughts and associated data. The data from the Elementary Math Cadre will be presented at the February 15 Math Project Team meeting
- Goal to have a first reading by the Board of recommendation and implementation at the March Board meeting – Board Report Phase 2
- Second reading at the April Board meeting

Next Meeting: Wednesday, February 15th 4:30 – 6:30
District Office Portable Five

PROJECT TEAMS

Project Teams are created by the Superintendent at the direction of the School Board for the purpose of providing a thorough review of the current curriculum area program and making recommendations regarding materials to purchase, instruction and assessment practices, and professional development for teachers to the Board. Project Team members agree to serve for a minimum of two years. Parents, students, and other community members join teachers, administrators and a School Board member on the Project Team.

Team members are expected to fulfill multiple roles as they work to serve the School Board and the community by providing recommendations that reflect educational research, a broad range of viewpoints, and current program effectiveness. One of the key challenges of the Project Team is to engage as many individuals among staff and the community in the process as possible.

TEACHER CADRES

Cadre members are recommended teachers selected by Teaching & Learning to provide classroom-based expertise to support the process. Cadre members supply background information, prepare initial drafts of documents, and make revisions of drafts based on Project Team direction. Cadre members also support communication to teachers across the District during the process. Several Cadre members all serve simultaneously on the Project Team to enhance the link between the two groups.

TEACHING & LEARNING SUPPORT

The administrators for Curriculum, Instruction and Assessment take the lead in coordinating and supporting the Project Team and help facilitate Project Team meetings. Curriculum specialists are assigned to support the Project Team, help facilitate meetings, and coordinate the Teacher Cadre's work in support of the Project Team.

What do you like about the CPM materials? What is going well?

1. Not involved in the pilot: I have heard… students engaged, huge increase in math talk. Content is better. Spiraling is great.

2. I like that the materials spiral. Communication between kids is increasing team expectations and roles.

3. (Not piloting) Less teacher centered/direct instruction time. The emphasis is on communication and problem solving. There is a lot of writing. The emphasis on group work and allowing students to struggle together, along with student talk support student learning. The materials build on skills over which equals more retention and allows for multiple opportunities in instruction and assessment.

4. Group structure and built in collaboration sets an expectation to share "work with your team." There is a focus on core problems and includes additional challenges or team challenge problems. The teacher notes are great. There are lots of opportunities to make connections to past lessons. There are a lot of hands-on activities.

5. The materials are engaging, encourage communication and deeper thinking, and the students LOVE it. It continues to talk about learned material, "review and preview." Scaffolds materials to provide support for some students. Promotes strong group interaction. The tasks are "low floor/high ceiling."

6. Students learn how to solve problems on their own and how to work with other students. The curriculum forces students to communicate their ideas.

7. I'm not piloting, but I've talked with many who are, and it sounds like the content is much better than Oregon Focus on Math or Connected Math Program. I love the spiraling and the problem-solving focus. I also like that it will (hopefully) prep students better for MVP. Also, it sounds more AVID-compatible.

8. High Rigor. Team Based. Seems like a good flow into AGS1. Spiral Review. Online tools.

9. Lot's of communication between students. Kids are asking each other questions – great dialogue. Lot's of review of previous material. Students are willing to try problems without teacher directions. Good questions. Students are engaged.

10. Many opportunities for communication. HW problems are "new and old" – good mix. Spiral – many opportunities for kids to "get it". Better content. It is filling in the gaps and keeping kids practicing skills from 4^{th} and 5^{th} grade.

11. (Not piloting) It sounds like the materials are interesting to the students. The students are engaged and working together. It seems well organized. The material encourages "math talk". The spiral curriculum helps keep students' skills up to speed. Content is solid, but it is teacher prep time heavy.

Where do we need to supplement? What additional supports do we need?

1. Would like at least one classroom set of books. Heard you need practice supplements.

2. Materials not engaging. We need to change targets.

3. More actual textbooks and better wifi. Manipulatives need to be provided, and should not be up to the teachers/schools to pay for that.

4. Assumes knowledge/skills that many students lack. Dividing decimals/multiplying negatives/dividing fractions. (These mainly show up in homework, but in some core problems.) Aligning with the targets. More practice.

5. The eBooks are not equitable for students w/o wifi. Learning targets are not aligned well. A lot of frontloading from teacher. Several materials needed. Classroom set of books needed.

6. Learning targets don't align well. It can be difficult to tell when students are expected to master a topic. The accelerated books seem to be thrown together and we have run into issues where lessons reference other lessons that were skipped. Having students start CPM in 7/8 grade when they didn't get it as a 6^{th} grader creates issues.

7. I have heard that reviews need to be supplemented and there's still the issues of paper versions vs. e-versions (which have more support). Many of my students don't have internet at home, and in my hall of my building the internet is not reliable.

8. How does it work if the students start in 8^{th} grade with the curriculum?

9. Tech support – 6^{th} graders needed an extra week in September just to learn how to navigate on Chromebooks and eBooks. More textbooks – class set (or at least 10 per teacher to use in teams). New targets and assessments that align with CPM. Clear communication to parents about long-term targets – that it is okay to have 2's at end of semester. Need additional practice. Need more guidance to stream line 6/7 accelerated class – keep on the pacing guide.

10. Targets – I'm not worried too much, but we need it to sync better. Poor online formatting – This isn't something we can fix. Sometimes I just need a few Math problems – No communication/No speculation/No pondering. I occasionally login to Oregon Focus on Math for problems.

11. It seems that not much supplement is needed. It sounds like we might need a lot of support for teachers first getting involved with teaching this – lot's of pre-service training? Still some are saying we need more practice opportunities. If we go with electronic version, I think we still need to have a class set of books.

12. Talented and gifted – These materials do not meet the needs of our top 1% and other accelerated students without supplementation.

Comment about CPM materials related to supporting instruction that enhances student learning of the CCSS Math standards and aligns with our Board approved Best Practices in Mathematics document.
1. Targets will need to be adjusted. 2. No response 3. Communication Perseverance Modeling 4. Less problems that dive deeper into concepts which helps with understanding rather than focusing on methods. 5. Requires students to think and reason deeper than other materials. 6. The standards don't align well. Spiraled lessons makes it hard to tell what the unit is even covering. Some units also don't seem to have a corresponding target. 7. No response 8. No response 9. Great for communication and problem solving. 10. I do not understand this prompt. 11. From everything I am hearing about CPM, it seems to really hit the mark with the approved Best Practices in Mathematics document. CPM tends to really be strong with communicating and writing Mathematically. 12. The eTools are amazing. Students love Desmos and activities on geometric transformations.

Do you support using these materials? (Circle one) Support Don't Support

1. Support. Problems – heard huge teacher workload with daily planning. Not enough practice.

2. Support. There is nothing better.

3. Support.

4. Support. Positives outweigh the negatives by a large margin.

5. Support. Students are becoming better advocates of their own learning. Student communication and reasoning is superior with CPM which helps overall proficiency.

6. Support. Students interact more with the materials and communicate with each other. Textbook has good support materials for students and teachers.

7. Support. Overall, I think this is a good upgrade. Change is usually difficult, but often good. I'm just concerned with tech-equity, and I know how many of my students have parents who don't want them to have chromebooks at all, for whatever reason.

8. Support. Good segueway into AGS 1, engaging, spiral review.

9. Support. Best option I've seen.

10. Support. I think the spiral curriculum and team-based learning will facilitate long-term understanding and more math confidence amongst students.

11. Support. The general feeling of the CPM pilot teachers is that it is a strong resource/material, well-written, and will be a good curriculum to lead into the MVP adoption.

12. Support. The materials are deep and engaging. Flaws can be remedied through supplementation and alterations to the text at teacher discretion.

Math Project Team Session Notes February 15, 2017

Attendance: Amy Henning, Brandie Clark, David Strayer, Dawn Stephenson, Debbie Hicks, Deborah Starr, Debbie Silva, Dennis Williams, Emma Winkel, Geoffrey Hunnicutt, Greg Therrien, Jared Cordon, Karl Meyer, Ken Struckmeier, Kerrin Moeller, Lindsay Ray, Megan McCoy, Neil Soiffer, Rebecca Carney, Susan Greenberg

Agenda Overview

- January meeting – review from 2015- 2016 PT work
- Task – prepare recommendation for the School Board to support strong instruction
- Decisions needs to be thoughtful and research-based
- Level of thoroughness should be reflective in decisions and Board report
- Middle School – Review process that narrowed down instructional resources to one publisher & vote
- Elementary – Review of four instructional resources and vote
- Phase I approved and accepted by School Board – Description and Program Evaluation, Review of current research on effective practices and programs, Philosophy / Position paper
- **Comment**: Additional research and work needs to be done on Advanced math courses
- Phase II – Recommendation of instructional materials, Recommendations for professional development and implementation support, Budget implications
    - Decision Process – Fist to Five (handout)

Middle School Instructional Resources

- Slide One on linked document
- Four sets of materials reviewed in April 2016
- Narrowed down to 2 in May. Publishers presented again on May 5
- Survey reflected a choice of College Preparatory Math – Math Cadre and Project Team
- Criteria Document - Link
- Pilot of CPM 2016-17 at 5 schools – ACMA, HS2, ISB, Stoller, Five Oaks
- Edreports.org ratings – Slide Two
- CPM Site – Slide 3: Differentiation, Tech, Spanish, Parent Resources, Professional Development, Cost
- Students have choice on e-books of Spanish/English
- Multiple applications available on e-books
- No charge for professional development from CPM. Provide site visits, Individual teacher support
- Eight year e-book license – See slide Three
- Pilot costs will be credited back if adopted
- Non-profit company – built by teachers and run by teachers
- Best Practices was criteria for pilot decision
- Question: What are actual costs for CPM? Needs to be stated as total cost
- 24 teachers who have piloted this year have already received Year I PD
- Project Team's role is to make recommendation, School Board is responsible for budget
- Early release on Wednesdays next year will alleviate some of the PD cost
- It is state law to go through the adoption process
- Concern: There won't be money for PD for the entire 7 years
- BSD allowed to send teachers to training at any site being offered
- E-book license format saves money over textbooks – don't get lost, current updates
- Materials matter less than teacher professional development
- Teachers who reviewed materials in the spring felt CPM was the best choice due to the heavy professional development that is included
- PD - 4 days in Summer, 4 Days during the year, site visits – Year I
- PD – 3 days for Year II

- Mathematical best practices assure alignment from level to level
- District is committed to provided teachers with the PD they need

Fist-to-Five Decision Making Process	
5 Fingers	Strong support
4 Fingers	Support
3 Fingers	Neutral
2 Fingers	Minimal support
1 Finger	No support, but won't block
Fist	No support

Decision Process on CPM for Middle School – Results:

5 - 12
4 – 4
3 – 0
2 – 0
1 – 1*
0 – 0

*Additional cost information needed

Elementary Instructional Resources

- April 2016 materials review resulted in no single recommendations – Reviewed 4 sources
- Examination process continued this year by cadre
- Pros & Cons are listed
- Slide show reflects – Differentiation, Spanish, Technology, Parent Resources, Professional Development, Materials Cost for all four sources
- Professional Development reflects implementation costs - not ideal. Reflects actual cost
- 850 elementary teachers
- Bridges was highest ranked in April materials review
- Majority of teachers are currently using Eureka Math
- Interventions and challenges are available in Eureka
- Eureka highest used program in the U.S. – Multiple resources available electronically for students, teachers, parents
- Fifth Program: Fosnot (Contexts for Learning Mathematics) – Discovered in Fall 2016. Many cadre members gained access to materials and piloted. Has not been seen by Project Team
    - Workshop Model
    - Heinemann published
    - Time tested
    - Aligned with Best Practices
    - 4-5 units per grade level
    - Supplemental – Not used on its own
    - Eureka Math needs supplementing
    - Open-ended problem solving
    - Similar to ELA materials

- Bridges or Eureka in conjunction with Contexts for Learning Mathematics recommended by Cadre
- Handout - Budget Comparisons
- Handout – Cadre Rankings
- EdReports – Final Slide
    - Compare and contrast

- Project Team decided to eliminate Envision and EveryDay math from consideration. Cadre and independent reports support this decision. Unanimous decision
- Eureka is printing costs only
- Well versed teachers (trained) can make the two programs Eureka/Fosnot work well together in a workshop model.
- PD needs to bring good teaching into the classroom
- Note: Consumables (workbooks) are sometimes used and sometimes not
- Bridges could stand on its own
- Implementation schedule will be determined. Students may need to be grandfathered in. Current students have used EveryDay Math and Eureka. Budget not yet determined
- Middle School teachers have noticed students coming in from the change to Eureka to be better prepared:
- Switch to Eureka asked students to much more than they had been doing previously. Reflective of new assessments

Members weighed in on each of the three options below to determine if there was a clear favorite

- Results were mixed
- Additional discussion needed
- Recommended – meet again next week.
- February 22 @ 4:30 in Portable 5 at District Office
- Project Team members may request time to access materials

Bridges Only
5 - 1
4 - 11
3 - 2
2 - 0
1 – 1
0 - 0

Bridges/Fosnot
5 - 7
4 - 4
3 - 2
2 - 1
1 – 1
0 - 0

Eureka/Fosnot
5 - 3
4 – 3
3 - 7
2 - 1
1 – 0
0 - 1

College Preparatory Math Budget 2017-18

Year 1 Professional Development:
66 teachers @$2200 = $145,200
24 teachers @$850 = $20,400
Total: $165,600
Year 2 Professional Development:
66 teachers @$850 = $56,100
Materials:
$74 X 1000 student books = $74,000
$54 X 9000 student eBooks = $486,000
$351 X 90 teacher materials = $31,590
Total: $591,590
Overall Total: $813,290

Second Vote on Middle School materials after total costs were provided:
5 - 14
4 - 2
3 - 0
2 - 0
1 – 0

College Preparatory Math APPROVED as Middle School Instruction materials recommendation to be presented to the School Board

Math Project Team Instructional Resources Selection Process Review
Elementary & Middle School - February 7, 2017

Elementary

In April of last year, the Elementary Cadre, Project Team members, and BSD staff evaluated the following four instructional materials programs utilizing the Board-approved Best Practices document and Instructional Materials Criteria:

- Bridges
- enVision
- Eureka/Engage NY
- Everyday Math

It was determined more exploration was needed before making a recommendation for adoption. Over the summer, the cadre with the Teaching and Learning department supported professional development for all K-5 BSD teachers to build understanding and begin implementation of a workshop model during their math block. Teacher participants and cadre facilitators of the training sessions expressed interest in receiving more resources and professional development to strengthen the effectiveness of teaching and learning in a math workshop.

This lead to the discovery of Contexts for Learning Mathematics (CFLM), an additional resource for the team to consider for instruction and professional development.

This fall at the November meeting, the Elementary Math Cadre discovered CFLM, a series of instructional units by Catherine Fosnot and colleagues that uses carefully crafted math situations to foster a deep conceptual understanding of essential mathematical ideas, strategies, and models. Building on the ideals of a math workshop, each unit provides a two-week sequence of investigations, mini-lessons, games, and other contexts for learning. Read about the materials here or watch a short video describing the philosophy here. The Online Professional Development System can be seen here. For more detailed information, see the Overview of Units from Heinemann publishing and please email Rebecca Carney with any further questions.

On February 15, Teaching & Learning will be sharing the feedback and considerations collected at the January elementary math cadre meeting regarding all of the above instructional materials.

Middle School

Winter of 2016, the list of materials to review was narrowed to four, College Preparatory Math, Connected Math Program 3, Eureka Math (Engage New York), and Carnegie Math. These sets of materials supported the instructional shifts outlined in the Math Position Paper and the Math Best Practices document. The Math Cadre was asked to identify any additional materials that they felt should be reviewed. Carnegie Math was the only addition to list.

Early April, the four sets of materials listed above were open to public review. Notification of the dates and times were sent out to all schools, and there was a press release from Community Involvement. There were both day and evening times scheduled.

April 12, 2016, the publishers presented to a combined group of Math Cadre and Math Project Team members. After the presentations, the Math Project Team and Math Cadre members discussed the strengths and weaknesses of each set of materials, and voted on which ones should be recommended for further review. The list was narrowed to two choices, College Preparatory Math and Connected Math Program 3.

May 5, 2016, College Preparatory Math and Connected Math Program 3 presented a second time to Math Cadre and Math Project Team members. There was further discussion and an additional vote. College Preparatory Math was the clear leader.

After discussion with District Administrators, there was a decision to pilot College Preparatory Math during the 2016-17 school year to gather more information. The Connected Math Program was the middle school adopted text prior to the current adoption of Oregon Focus on Math, and was still being used by many Middle School teachers. With that in mind, a pilot of the Connected Math Program wasn't necessary. We already had enough information.

The results of the opinions of the current pilot schools and representation from non-pilot schools was shared at the January 18, 2017 Project Team meeting. All 12 schools agreed we should move forward with recommending College Preparatory Math for adoption.

You will find Board approved Phase I report, Best Practices, Position Paper and additional information on the Math Project Team Web Page

Math Adoption Update

Appendix E

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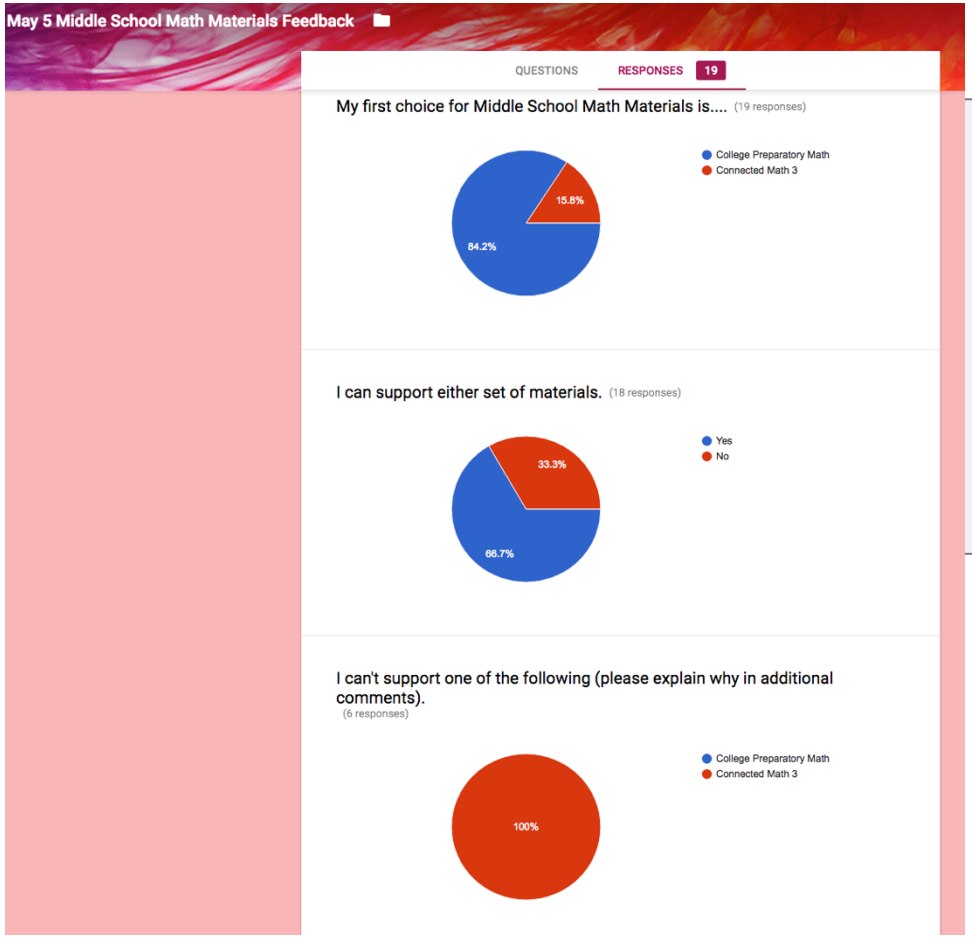
Math Project Team Phase II – February, 2017



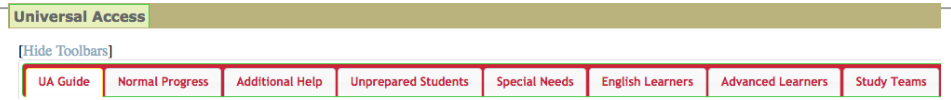
On May 5, the Secondary Math Cadre and Math Project Team met with the publishers for a more in-depth presentation on both College Preparatory Math and Connected Math 3.

The charts to the left show the results of their support.

Middle School

edreports.org

Title (2) Sort	6th Grade Sort ⊘ Remove	7th Grade Sort ⊘ Remove	8th Grade Sort ⊘ Remove
Connected Mathematics Project 3 Pearson Show Reports	NR	NR	18/18
Core Connections (Grades 6-8) CPM Educational Program (CPM) Show Reports	18/18	18/18	18/18

Differentiation	
Spanish	Available with eBooks and hardbound books
Technology	The pilot teachers used the eBooks, which are technologically enhanced.
Parent Resources	Access to all components online
Professional Dev.	Year 1: 4 days in summer with 4 days of follow-up throughout the school year ($2200 per teacher). Two site visits are also included. Year 2: 2 days in the summer with 1 day follow-up throughout the year. Two site visits are also included.
Materials Cost	8 year eBook is $54 per student. A hardbound book is $74 per student and includes the eBook. Teacher support materials are $225 and manipulatives are $126. PD is free with purchase of materials.

CPM

College Preparatory Math

College Preparatory Math Budget 2017-18

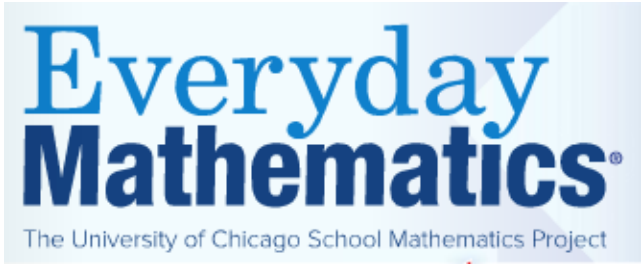
Year 1 Professional Development:
66 teachers @$2200 = $145,200
24 teachers @$850 = $20,400
Total: $165,600

Year 2 Professional Development:
66 teachers @$850 = $56,100

Materials:
$74 X 1000 student books = $74,000
$54 X 9000 student eBooks = $486,000
$351 X 90 teacher materials = $31,590
Total: $591,590

Overall Total: $813,290

Differentiation	Intervention program available and differentiation options with every lesson
Spanish	Available for all components
Technology	Multiple interactive student and teacher components online
Parent Resources	Access to all components online
Professional Dev.	2 full days in summer with ongoing/onsite support ($500,000)
Materials Cost **(First 2 Years)**	$2,300,000



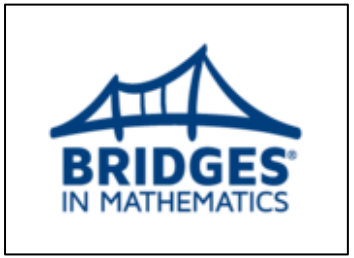
EVERYDAY MATH

Elementary

Differentiation	Intervention program available and differentiation options with every lesson
Spanish	Available for all components
Technology	Multiple interactive student and teacher components online
Parent Resources	Access to all components online
Professional Dev.	2 full days in summer with ongoing/online support ($500,000)
Materials Cost **(First 2 Years)**	$2,800,000

ENVISION MATH

Differentiation	Intervention program available and frequent challenge problems in student workbook
Spanish	Unit overviews and student workbooks
Technology	Free math apps only
Parent Resources	Unit overviews and web resources
Professional Dev.	2 full days in summer with ongoing/onsite support ($500,000)
Materials Cost **(First 2 Years)**	$1,800,000



BRIDGES

Differentiation	Frequent notes to teachers throughout the lessons with ideas for differentiation. Workshop model will extend these options.
Spanish	Unit overviews and student pages
Technology	Zearn - interactive online program that follows Eureka lessons
Parent Resources	Unit overviews and web resources
Professional Dev.	1 full day in summer with ongoing/online support ($250,000)
Materials Cost **(First 2 Years)**	$334,000

EUREKA MATH

Differentiation	Built into every lesson with “low floor, high ceiling tasks” supportive of a math workshop model
Spanish	Few student pages that could be translated by BSD staff
Technology	DreamBox available for purchase. It is an online program providing differentiated math support to individual students. DreamBox aligns with CFLM units. See “Assessment App” here
Parent Resources	Guide for at-home support
Professional Dev.	Online for unit support and children’s mathematical development ($85,000)
Materials Cost (First 2 Years)	$150,000

CONTEXTS FOR LEARNING MATHEMATICS CATHY FOSNOT

Update Custom Comparisons (x)

Title (4) Sort	Kindergarten Sort ⊘ Remove	1st Grade Sort ⊘ Remove	2nd Grade Sort ⊘ Remove	3rd Grade Sort ⊘ Remove	4th Grade Sort ⊘ Remove	5th Grade Sort ⊘ Remove	6th Grade Sort ⊘ Remove	7th Grade Sort ⊘ Remove	8th Grade Sort ⊘ Remove
Bridges In Mathematics The Math Learning Center Show Reports	13/14	13/14	13/14	12/14	12/14	12/14			
Envision 2.0 Pearson Show Reports	9/14	8/14	10/14	9/14	7/14	3/14			
Eureka Math Great Minds Show Reports	14/14	14/14	14/14	14/14	14/14	14/14	13/14	14/14	14/14
Everyday Math 4 McGraw-Hill Education Show Reports	7/14	10/14	10/14	11/14	11/14	11/14	10/14		

edreports.org

Initial Curriculum Review

Purpose: *This is a tool for educators and others to do an initial review and determine the quality of a math curriculum in order to make an initial decision about the potential for further examination.*

Name of Resource:_____ **Publisher/Access information:**_____

Rating Scale:

4: Exceeds the criteria 3: Adheres to the criteria 2: Sometimes adheres to the criteria 1: Occasionally adheres to the criteria 0: Rarely adheres to the criteria

Screening Criteria	Rating			Additional Criteria	Rating			Additional Criteria	Rating		
Addresses CCSS* Mathematics standards with special attention to the "major work of the grade".				**Engages students in productive struggle through relevant thought-provoking questions. (SMP1)**				**Provides opportunities for differentiation for <u>all</u> students.**			
Consistent with the learning progressions in CCSS.				**Provides sufficient opportunities for students to reason and explain. (SMP2&3)**				**Provides supports for small-group and individualized instruction.**			
Provides opportunities for students to apply concepts in real-world situations.				**Encourages the strategic use of concrete or abstract tools such as pictures, models, expressions, and technology- based tools. (SMP4&5)**				**Highlights assets of diverse cultural and linguistic backgrounds, interest and styles.**			
Develops understandings through conceptual problems, questions and multiple representations.				Encourages precise and accurate mathematics. (SMP6)				**Cultivates student interest and engagement in math.**			
Expects, supports and provides guidelines for procedural skill and fluency <u>after conceptual understanding</u> has been developed.				Encourages students to build new concepts on patterns & generalizations of prior knowledge. (SMP7&8)				**Uses varied modes to assess student understanding (selected response, constructed/extended response, self-assessment, etc.).**			
Bold indicates criteria that explicitly support culturally responsive teaching. SMP indicates a connection to one of the eight Standards of Mathematical Practices in the CCSS.				Provides opportunities to integrate technology and media to deepen learning.				Provides opportunities for ongoing formative assessment.			
								Provides support materials for teachers.			

K-5 Math Instructional Resources Ranking by Elementary Math Cadre - February 2017

First	Second	Third	Fourth	Fifth	Rationale
Eureka/ Fosnot	Bridges	Eureka K-5	enVision	Everyday Math	I'd like to look at Fosnot with Georgia. I think using Fosnot as our base, and creating complete units around her units would be my idea. I think PD should be our focus, I don't want a costly program over giving good pd to our teachers. We talked a lot about not just teaching teachers how to use a new program, but I fear that is where we are headed. It's like teaching someone to fish, rather than giving them a fish to eat. Manipulative should be another priority.
Bridges	Eureka/ Fosnot	Eureka K-5	enVision	Everyday Math	Bridges and Fosnot compliment each other. Bridges builds in the components that teach and allow teachers to have students engage in productive discourse and justify their answers. It promotes thinking rather than memorizing.
Eureka/ Fosnot	Bridges	Everyday Math	Eureka K-5	enVision	Teachers have come to understand the scope and sequence of Eureka. Fosnot would be the perfect tool for all classrooms with Eureka as a supplement. Bridges has a lot of potential, but the prep and cost on top of all the NEW ELA curriculum we are required to use is too much.
Bridges	Eureka/ Fosnot	Everyday Math	Eureka K-5	enVision	When filling out the initial curriculum review and thinking about our best practices document the Bridges materials and Fosnot supplemental materials have the strongest alignment. While these materials may seem like a lot for teachers they will move teachers forward in meeting the needs of all students. However, materials will only be as strong as the support and professional development teachers are given in becoming strong math teachers. Therefore, I recommend these materials only if teachers are given professional development in math instruction and not only in unpacking materials. I have hesitation in adopting the materials due to lack of piloting. Spending large sums of money on a program that we have not been able to "test drive" across grade levels and schools seems a bit like blind purchasing.
Eureka/ Fosnot	Bridges	Eureka K-5	Everyday Math	enVision	My first choice is Fosnot. Fosnot has the inquiry and engagement piece that meets all kids at their developmental level, along with a solid workshop model approach. There is online PD with video clips to watch so teachers can see it in action. The program I would use along with Fosnot is Engage New York. I have used Engage New York for many years, and led after school Module Overview sessions for interested teachers. The teachers that I have talked to about ENY are not always fond of ENY because it has a lot of student reading in it (below grade level readers and ELLs might have difficulty accessing the math without support/modification), and some teachers do not think ENY is very kid friendly. Both of these things are addressed with Fosnot. If teachers are concerned with rigor in teaching Fosnot, Engage New York has the rigor. (see Eureka/Fosnot Pros and Cons page for more detailed information on Fosnot). Other cadre members seem to be in favor of Bridges, and I would be fine with Bridges as the materials adoption, as long as Fosnot was also included.

First	Second	Third	Fourth	Fifth	Rationale
Eureka/ Fosnot	Bridges	Eureka K-5	enVision	Everyday Math	In my mind the only options for adoption are Fosnot with Eureka support to fill holes, or Bridges. I cannot support the other three options for our district. Fosnot will lead to strong workshops in all classrooms. While I think Bridges looks like a great curriculum, the workbooks and homework books look like a route some teachers would take to avoid having to engage in workshop. It also seems like the district is moving away from such a paper-dependent program. ***Regardless of adoption (Fosnot or Bridges) we need strong, ongoing PD support in workshop and math instruction.
Bridges	Eureka/ Fosnot	Eureka K-5	Everyday Math	enVision	Perfect world option: Bridges with Fosnot co-adopted and to be dually taught side by side. Both programs flow similarly and piggy back each other organically. Also both are easily compatible with classrooms that want to do a math workshop setting. (concern is cost though if we want to have PD along with this) Best next option: Have Fosnot as the adoption with Eureka supplement and use the program money for best practices PD, but the concern is that the teachers who are new 2 years from now will not have the PD and will not teach with best practices in mind.

First	Second	Third	Fourth	Fifth	Rationale
Bridges	Everyday Math	enVision	Eureka/ Fosnot	Eureka K-5	Bridges: Implementation will depend on supporting teachers the most in the first month-- allowing time for teachers to get familiar with the flow of the math and the feel of the lessons. Professional Development can be very teacher driven with this resource- because the resource itself already had strong workshop models in it- the PD does not need to be about how to CREATE workshop-- but instead what is working as we try workshop. Much of this could happen in late start days-- with teacher led "cells" -- that have teachers leading other teachers. Materials- many materials to manage- but it is all included in the curriculum-- no need to justify or figure out what might work. It will come. Everyday Math/enVision: Not as familiar with these, but would take these over any version of Eureka and then do the work to make them fit with the curriculum needs and workshop needs. That means extra work but there is NO WAY it's as much work as re-doing Eureka from the form it is in. Eureka- implementation- if done as is, it won't be hard because teachers know it. But, knowing that it needs to be overlaid with Fosnot and then examined for parts to discard and parts to keep means an intense amount of work with lots of opportunity for mistakes. PD- would need to be intense, frequent, and ongoing. A combination of speakers, reading, and release time to understand and create materials would be needed. Materials: I worry about an inequity in schools where PTAs can purchase extra things and help teachers with needs- and in the end teachers may simply not access a variety of materials because of the work to get them, the expense, and the time needed to plan where to insert them- since it's not built into Eureka. Fosnot should be adopted with any of these, in some form.

First	Second	Third	Fourth	Fifth	Rationale
Bridges	Eureka/ Fosnot	Eureka K-5	Everyday Math	enVision	When considering our district and the wide range of teacher skill and expertise in teaching math, Bridges seems to be the program that would best support a wide range of teaching abilities. It may be the most complete of all the programs that could be used within a workshop model. It also covers the standards according to the information given. The tricky part is that most people on the cadre do not have experience teaching this curriculum. As with any of the adoption, there is a high need of professional development needed to move all teachers in the direction of best math practices. Bridges - seems complete; expensive; packaged; addresses the standards; not very many people have actual experience teaching it; possibly approachable for all ranges of teacher skill level Eureka K-5 - teachers are familiar with it; not consistently used across the district; addresses the standards; not approachable for all students; teaches specific Eureka math vs. just math Fosnot - seems to be supportive of inquiry and workshop model; not a complete program; does not address all the standards; requires heavy professional development Needs of adoption to be considered: professional development, equitable manipulatives and materials across the district, intervention, extension, language accessibility, allows for cohesiveness across the district
Eureka/ Fosnot	Bridges	Eureka K-5	enVision	Everyday Math	Since our focus is on the workshop model, I would like to see teachers have quality professional development in this area as well as the learning targets/math practices. For materials I think the new units from Cathy Fosnot would be a great resource. I think the Eureka materials on their own do not support workshop model (nor do Everyday Math or enVision.) The Bridges program does support math workshop model, but it does not completely align with CCSS at all times (no "program" does.) Teachers must understand the math concepts and be able to make informed choices in resource/material support and differentiation as needed. To achieve this goal, teachers must have quality professional development first and foremost. I would support an implementation with professional development first, some new materials (Fosnot), and then continued professional development. We could also give out Fosnot in the the first tier of implementation and do a 3 year roll out of Bridges. Continuing professional development each year.

First	Second	Third	Fourth	Fifth	Rationale
Eureka/ Fosnot	Bridges	Everyday Math	Eureka K-5	enVision	I feel my recommendation of a program is dependent on strong professional development to support teachers in making them better teachers of mathematics. In whatever program we need to include student talk about math, struggle and justification. I know this kind of ongoing training is hard to maintain, but it is best for our students. I would not support Eureka without the Fosnot supplement. A book does not change teaching practice. It can only be done through good, continuous PD.
Bridges	Eureka/ Fosnot	Everyday Math	Eureka K-5	enVision	Engage NY is easy for teachers to teach and is free, but it not best practice. It is not worth feeling good that we are cover standards, when we are doing just that: covering standards and not helping students become deep mathematical thinkers. - Fosnot reflects the philosophy that we know helps students thrive as critical thinking mathematicians. It is the one curricular resource that helps teachers create learning environments for students that will facilitate inquiry and discourse. I am worried that going back and forth between Eureka will difficult for students because the approach to instruction is so different. When this happens, teachers usually abandon one of the approaches. Because easier to just teach Eureka because it is what is familiar, teachers might not truly give the Fosnot units a chance. This would put us in the position that we are in right now, teaching something that covers the standards, but helping our students become true mathematicians. - Bridges is the only curriculum that is constructivist. It would bring hands on learning back to the classroom. This openness would bring more joy back into the math classroom. Without PD, it is the one curriculum that would help teachers make the switch to a more inquiry based approach. However, without quality PD, teachers could miss the philosophy and purpose behind the lessons and revert back to teaching direct instruction or just having students fill out the wor+E14kbook. It would be made even more powerful if it was supplemented with Fosnot units and Jo Boaler week of inspirational math lessons. C14 - I know the district would never continue with Everyday Math, but philosophically, it is better aligned to what we have found to be best practice than Eureka. Unfortunately, it isn't aligned to the standards, but it at least teaches students to think critically as mathematician

First	Second	Third	Fourth	Fifth	Rationale
Bridges	Eureka K-5	Eureka/ Fosnot	Everyday Math	enVision	I do have a concern with Fosnot and Eureka... They are such polar opposites as far as philosophy in teaching. Bridges seemed to have everything needed to teach a solid math program that allows with inquiry. Strong math teachers are able to go from Eureka to Fosnot and make Eureka more inquiry based. However, many teachers are not strong in this area and will struggle.
Bridges	Eureka/ Fosnot	Eureka K-5	Everyday Math	enVision	Bridges is my first choice because it is a complete curriculum with all of the major components of a math workshop built in. It seems like this would best support all teachers, especially considering teacher who do not feel confident or lack experience with the workshop model and also considering new teachers. If there are limited funds for PD, having a complete program seems to support helping more teachers to be successful with this model. Adopting any new curriculum will require PD, but this one seemed to have the most clear structure for a workshop model. The Eureka/Fosnot combination could also be a good choice because many teachers in the district are already familiar with Eureka and have had some PD around using it in a workshop model. If each teacher could receive the complete Fosnot program, this would be a good foundation for math workshops. The PD required for that could be cost prohibitive. Leaving teachers with Eureka math could also cause many to teach directly from the Eureka math plan. I like the manupulatives component of Bridges and think having these in all classrooms would be a good resource. The free online component of Zearn is also good for a math workshop that uses Eureka math. Bridges seems to promote more independent thinking in students and Eureka math seems more rigid with the strategies and models taught.
Bridges	Eureka/ Fosnot	Eureka K-5	enVision	Everyday Math	I would rather PD on math than a curriculum teaching the teacher. Concern about another "new" thing in math. Implementation will need to be done well or just pilot some teachers next year? If we had Bridges, I think it would be easier for teachers to stick with the math workshop. I really am excited about teaching the Fosnot stuff and do not know how bridges really is. I know we heard, but everyone is different and I personally have no experience with it, so it's hard to really choose it as number one, but overall it is number one. My dream is Fosnot with Bridges and PD:)

First	Second	Third	Fourth	Fifth	Rationale
Bridges	Eureka/ Fosnot	Everyday Math	Eureka K-5	enVision	Bridges is complete curriculum that follows the workshop model and covers all standards. It needs support with math forums/congress in lower grades - but Cathy Fosnot units can be used to support the holes. It engages students in math and provides opportunities for students to work together and individually, allows for differentiation, intervention, and encourages multiple ways of representing mathematical thinking.

First	Second	Third	Fourth	Fifth	Rationale
Bridges		Eureka/ Fosnot	Everyday Math	Eureka K-5	(Note: I did not rank enVision because I do not have any experience with this program and I am not familiar enough with the materials to rank it.) For all the reasons listed below, I believe Bridges is the strongest math program our district could adopt at this time. The members of the Math Cadre were all in agreement that we would NOT recommend adopting Eureka/Engage NY on its own. I would like to adopt Fosnot as a supplemental material regardless of whatever curriculum we end up choosing. In my ideal dream world, we would adopt Bridges; in addition, we would use Fosnot's approach, mindset, and lessons to make our math workshop structure even stronger. If I follow what I know and what I have learned in PD about strong math teaching practices, Bridges meets them all. It also meets the criteria outlined on the "Initial Curriculum Review" used by the Math Cadre. As soon as I started using Bridges, I felt like a stronger math teacher; I also enjoyed teaching math more. Furthermore, I noticed a striking increase in engagement from my students; Bridges makes math interesting, challenging, and fun. Here is a list of reasons why I think Bridges is the strongest math program we could adopt at this time: - It is clear and easy to follow for students and teachers - It encourages many types of thinking and discussion - Authentically and frequently hits the Common Core Math Practice Standards - Introduces many strategies and encourages students to choose the best, most efficient strategy for them - Builds in time for reflection, work stations-- you don't have 'steal time' to make that happen - Follws the true workshop model (as defined articulately by Fosnot here: http://www.contextsforlearning.com/samples/46overviewteachlearn.pdf) - it's not just stations for each day (that is some days-- but other days it's quick intro and then student
Eureka/ Fosnot	Bridges	Eureka K-5	Everyday Math	enVision	No program is perfect and will need PD along with the implementation and materials. Fosnot is a great supplement regardless of the curriculum to support the Math Workshop Model and differentiate instruction to engage all learners. Considering there are many Future Ready schools, we also need to factor in the digital component with the Math Workshop Model and where it fits in with whatever materials are chosen. Please note although Eureka K-5 was my 3rd choice, I would NOT recommend using it by itself since it does not provide differentiation for all students nor follow a Math Workshop model though it scored higher than Everyday and enVison on edreports.org.

First	Second	Third	Fourth	Fifth	Rationale
Bridges			Eureka/ Fosnot	Eureka K-5	I think Bridges and Fosnot would be a great co-adoption. Bridges is a wonderful resource for kids, teachers and the community. It is a complete curriculum that supports teachers who join our District at any phase of the adoption. The teacher materials support teachers professional growth. The curriculum design of Fosnot acts as it's own PD. Fosnot is a great set of open-ended materials, that not only is standards based, but the prior research of these authors is the basis of many of the Common Core Standards. I also believe we need a strong PD to support teachers as we take a new journey with mathematics education. Eureka Math is a program that directs thinking and understanding. It lacks multiple entry points, conceptual understanding, differentiation, and enjoyable experiences in math education. I would find it difficult to support Eureka Math as an adoption.
Eureka/ Fosnot	Bridges	Eureka K-5	Everyday Math	enVision	
Eureka/ Fosnot	Bridges	enVision	Everyday Math		My first choice would be a combination of Eureka and the Fosnot materials, but with the caveat that there would be money in the budget for teacher support and training. We know that the student engagement in the Fosnot materials is high and the rigor and models in Eureka align with CCSS. I'd like to see teachers become highly skilled in teaching and conferring in the workshop model using Eureka as a guidepost with the inquiry of the Fosnot units.

Math Project Team Session Notes February 22, 2017

Attendance: Amy Henning, Brandie Clark, David Strayer, Dawn Stepenson, Debbie Hicks, Deborah Starr, Devra Silva, Dennis Williams Emma Winkel, Geoffrey Hunnicutt, Heidi Hanson, Jared Cordon, Karl Meyer, Ken Struckmeier, Kerrin Moeller, Megan McCoy, Rebecca Carney, Sean Leverty, Steve Simpson, Susan Greenberg
Note: Ken Struckmeier, Jared Cordon, Susan Greenberg

Agenda Overview

- Last Meeting instructional materials were narrowed down to the three choices below. Reflects 2/15 Project Team ranking

Bridges Only
5 - 1
4 - 11
3 - 2
2 - 0
1 – 1
0 - 0

Bridges/Fosnot
5 - 7
4 - 4
3 - 2
2 - 1
1 – 1
0 - 0

Eureka/Fosnot
5 - 3
4 – 3
3 - 7
2 - 1
1 – 0
0 - 1

- This past week a survey went out to all elementary teachers. Results are posted on the Project Team website
- Survey asked teachers to rank the three options listed above
- Results were inconsistent and contradictory
- Teachers were asked to rank Bridges. Many have not used it, but received info, and spoke with peers
- Comment: Bridges has been around for many years, but the version currently being considered is vastly different
- Project Team reviewed survey results
- Rank Chart – Slide. Blue and Red combined equals Bridges.
- About 50 percent of all elementary teachers responded to survey
- Administrators prefer Eureka
- Primary teachers feel manipulatives are needed for Eureka
- Comment: Teachers are not familiar with Fosnot. Would answer many of the concerns and fill the gaps
- Question: Can Primary use Bridges and 4-5 continue to use Eureka? Comment: Vocabulary differences
- ELA time commitments may impact teachers' preference to stay with something familiar. Time issues
- Workshop model will be supported with Fosnot
- New way of utilizing Eureka with/Fosnot would result in a need for PD
- What's the best way to get better at teaching math?

Cadre Work & Clarifications

- Doesn't feel need to work the survey data any further
- Best Practices needs to be reviewed and kept in mind during all considerations of resources
- Feels Eureka in a workshop model and Bridges have the same support for Best Practices
- Side by Side Comparison – slide
- Zearn – Digital component of Eureka that follow unit by unit. Uses technology to double the impact of instruction
- Not all teachers take advantage of Zearn, but it is available at no charge with Eureka
- Bridges has no online assessment component
- Fosnot units could be done with entire class

- Bridges comes with manipulatives, Eureka does not
- Manipulatives can be bought outside of a package (separately) to be used with Eureka
- There are a number of manipulatives out in buildings currently that are left over from past adoptions
- Bridges could be done without Fosnot

Three recommendations narrowed down to two recommendations - Unanimous

- Bridges
- Eureka with/Fosnot

Group Discussion comparing Differentiation, Spanish, Technology, Parent Resources, Professional Development and Cost between Bridges and Eureka/Fosnot

Input

- Bridges is cost: prohibitive
- Eureka as written doesn't teach math the way we want to teach math
- Time to cut the cord and get rid of Eureka
- Leaning toward Eureka
- Leaning toward Bridges
- Primary does not mesh well with Eureka
- Concerns about implementation
- Leaning towards Bridges
- Leaning towards Eureka/Fosnot. Less of a learning curve. Workshop Model
- Like Fosnot. Doable. Good PD. Bridges fits better with Middle School. Work load concerns. Soft roll-out needed
- Leaning towards Bridges. Best Practices – Eureka too ridged. Not enough student conversation
- Do not like using Eureka
- Fear of future budget, standards, staff. Eight year commitment
- Bridges better fit for primary
- Leaning towards Bridges. Could support Eureka. Some teachers are comfortable with Eureka
- Split. Would like to see Eureka expanded. Bridges time and energy intensive. Eureka is text heavy. Mixed adoption?
- Eureka is labor intensive. Fosnot is heavy in multiplication and division. Leaning toward Bridges
- Math programs are available to supplement Eureka. What's wrong with Eureka is known, what's wrong with Bridges is unknown
- Fosnot/Eureka combination will fundamentally change the way we teach math. Fosnot provides techniques to use with Eureka
- Fosnot has PD throughout the year. Teachers are learning along with students
- Primary and linguistically diverse kids have trouble with text heavy Eureka. Adaptations of Eureka and the new Fosnot resources would improve the issue
- Fosnot provides differentiation and supports the workshop model
- Maybe neither one is the right fit? Too hasty of a decision? More piloting may be needed. Uncomfortable to commit for 8 years
- The Eureka/Fosnot fusion needs to be created
- All the information is never available
- Given what we know, what is the best decision right now?
- Recommendation: Work through lessons as a group to compare the two
- Variable in any program is the teacher (top of Best Practices document). An effective math practitioner could work with any curriculum
- Concern: Little known about Fosnot
- Eureka on its own ranked last in initial rankings. Fosnot will make the difference

- How much PD will be provided with either program? A. Cadre feels that the PD would be an equal focus with both. Note: Budget is not known yet
- Is money a factor? Possibly. Budget won't go to Board until April. Could impact amount of funds available for PD
- Math is fundamental & foundational and needs to be funded and supported
- Have other districts successfully blended Eureka and Fosnot? Unknown
- Can the meld be developed in time for implementation? A: Yes

Intent is that Project Team feel comfortable and informed enough to make a decision

12/17 Project team members feel comfortable enough to vote tonight

Decision Making Process to further narrow down the options. Results:

Bridges Only
5 - 3
4 - 9
3 - 1
2 - 4
1 - 0
0 - 0

Eureka/Fosnot
5 - 5
4 – 3
3 - 7
2 - 2
1 – 0
0 - 0

Four Project Team members with "2" votes for Bridges comments:

- Money saved by selecting Eureka would go to PD and manipulatives. Lots of budget issues on the horizon
- Assessment, interactive, adaptive online components with Eureka plus dream box, Fosnot, Zearn
- Would still choose Eureka if money was not an issue
- Eureka is the only program that has been used by choice
- Eureka will come up with new stuff regularly
- Adaptive programs are usually funded by individual schools
- I like Zearn
- Budget uncertainty
- See the appeal in the primary grades of Bridges, but feel Eureka could be adapted to meet those needs
- Current work with kindergarten classrooms taking place to improve Eureka

Two Project Team members with "2" votes for Eureka comments:

- Students not as engaged with Eureka. Different for workshop. Works well with MS materials
- Afraid to select a program that is unknown
- Implementation plan needs to include melding of programs

Additional comments:

- Cost of Eureka duplication is much less than Bridges
- Difference in costs could be used to purchase needed manipulatives and professional development
- Project Team member proposed Eureka/Fosnot with additional components for the team to vote on as the elementary instructional resource recommendation to the School Board.

Proposal: Eureka with Fosnot including PD and Manipulatives, summer and ongoing PD with face-to face and online workshop model and access to student-interactive and adaptive technology.

Decision Making Process Results:

Eureka/Fosnot/Manipulatives/PD/Tech
5 – 6
4 – 6
3 - 5

Next Steps

- Phase II Report to School Board to include Instructional Resources recommendation, Professional Development plan and Rationale
    - First Reading – March 13, 2017
    - Second Reading – April 24, 2017