MATH PLAN AT A GLANCE

2012-2013

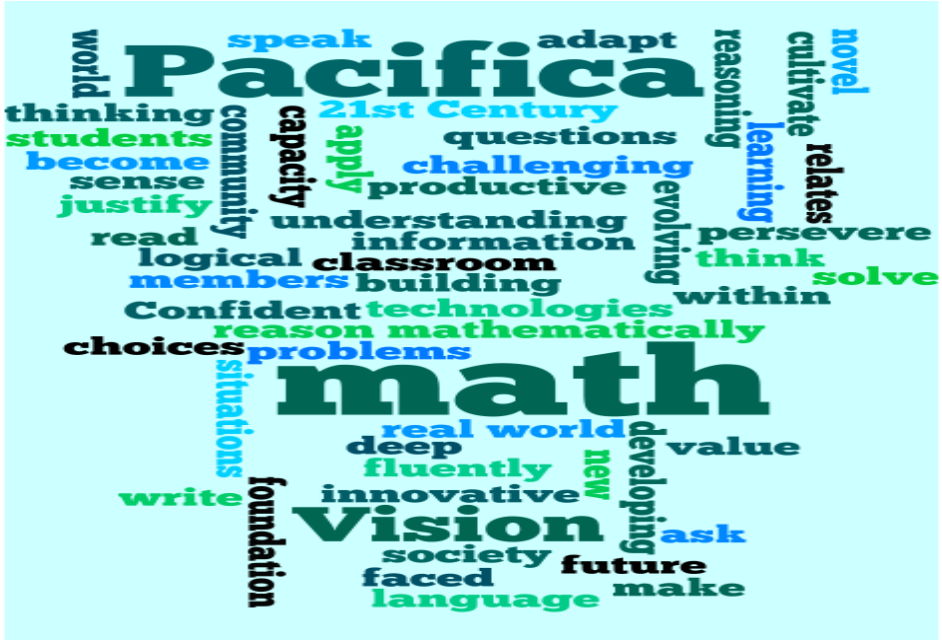
See full text version of the Math Plan for in depth descriptions and details.

PACIFICA SCHOOL DISTRICT VISION FOR MATH LEARNING

We envision confident students developing the capacity to be productive members of our 21st Century society who are able to think and reason mathematically to solve real world problems. They read, speak, and write fluently in the language of math - justifying their reasoning while adapting and persevering when faced with challenging problems.

As a community of learners our students:

- *use questioning to cultivate deep math understanding;*
- *apply logical and innovative thinking to novel situations;*
- *adapt to new technologies and*
- *view a strong understanding of math as foundation for future choices in an evolving world.*



MATH PLANNING COMMITTEE 2010-2011

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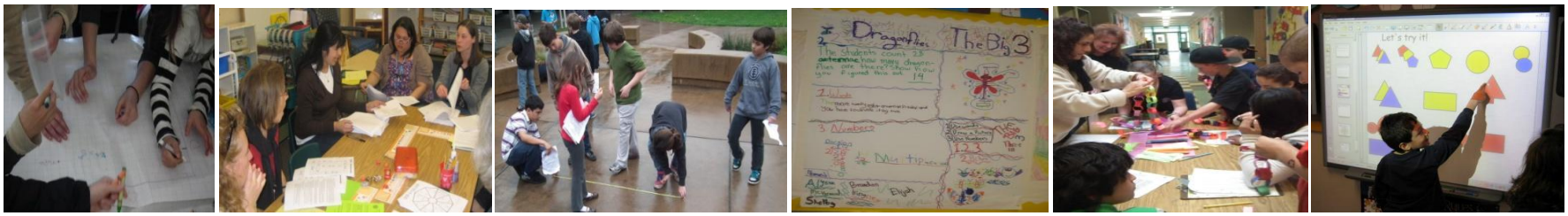
PRINCIPLES OF LEARNING AND TEACHING MATH

Students engaged in learning math	In the classroom, exemplary math teachers	Professional math teachers
▪ Actively participate in productive conversations with classmates. ▪ Solve problems in a variety of ways and describe how these approaches are related to each other. ▪ Are resourceful, curious, persistent, and able to apply successful strategies, thinking, and approaches to new situations. ▪ Justify their reasoning and seek to understand the reasoning of others. ▪ Analyze misconceptions and mistakes to clarify understanding. ▪ Value the process of finding a solution and consistently check for reasonableness of answers. ▪ Identify connections between words, math diagrams, numbers (symbols). ▪ Apply math knowledge to concepts in science, literacy, art, social sciences, health education. ▪ Build mathematical models using everyday materials and digital media. ▪ Use a variety of technology tools to visualize, explore and solve problems. ▪ Explore meaningful mathematics that will enrich their lives and opens doors to future success.	▪ Utilize a variety of assessments to guide learning experiences based on state standards (Common Core State Standards for Mathematics). ▪ Guide student learning by creating safe, child-centered environments where students are comfortable taking risks, learn from mistakes. ▪ Facilitate math discussions by asking questions that push students' math understanding and help students see relationships between ideas. ▪ Provide a wide array of learning experience that enable students to build with their hands, use technology to explore concepts, reason abstractly, and use literacy skills to use communicate their reasoning.	▪ Engage in life-long learning, using, and doing math together to increase their knowledge and confidence in math. ▪ Learn from their colleagues in grade levels and value each other as resources for teaching ideas and techniques. ▪ Collaborate across grade levels to ensure coherence and alignment as students progress from Transitional Kindergarten to eighth grade. ▪ Create, use, and analyze common assessments that provide a window into students' math understanding of important concepts. ▪ Participate in professional development on math performance tasks through the Silicon Valley Math Initiative, the use of technology as learning tools, and on increasing facilitation and classroom management techniques. ▪ Learn through observing colleagues within schools, grade levels, and across the district to see exemplars of student learning.



STRATEGIC AREAS OF MATH FOCUS:

The table below provides a snapshot of nine strategic areas of focus identified by the district math committee that will enable us to achieve our vision for student learning and the teaching of math. These areas of focus address the three interrelated components of the district strategic plan that recognize our students' right to learning that is rigorous, differentiated and holistic. These areas of focus address what students need to learn, how we assess student progress, create and maintain healthy learning environments, and ways teachers collaborate and develop professionally in order to provide students with learning experiences that build a strong foundation for future choices.

<table>
<tr><th colspan="5">I. LEARNING THAT IS RIGOROUS</th></tr>
<tr><td>I. A - Plan and implement transition to the Common Core State Standards for Mathematics (CCSSM).</td><td>I.B - Integrate MARS tasks and other SVCF materials into grade levels.</td><td>I.C - Develop a technology resource library where teachers can access different ways to use technology to support student learning in math.</td><td>I.D - Support and encourage teacher professional development in MARS, problem solving technology integration, group work and classroom management through PLCs, online message boards, peer observations, and collaboration.</td><td>I.E - Implement robotics curriculum at the 4th and 7th grade level is aligned with math and/or science content standards.</td></tr>
<tr><th colspan="5">II. LEARNING THAT IS DIFFERENTIATED</th></tr>
<tr><td colspan="2">II. A – Implement Tier 1, differentiated and enriched first instruction. Provide additional, Tier 2 support for students who are .5 - 2 years below grade level.</td><td colspan="3">II. B – Implement technology based programs for RTI^2 tier 1 and 2 supports.</td></tr>
<tr><th colspan="5">III. LEARNING THAT IS HOLISTIC</th></tr>
<tr><td colspan="2">III. A - Create mathematics learning environments that follow socio-mathematical norms and promote persistent problem solving and independence through teaching the Standards for Mathematical Practice.</td><td colspan="3">III.B - Encourage family involvement with mathematics through parent and family communication, workshops, community involvement and web-based resources.</td></tr>
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See the full text version of the Pacifica School District Math Plan for specific details related to these areas of focus.

ANNUAL GOAL: *Align and enhance math instruction to meet or exceed:*

1. *The NCLB mathematics target of 79% proficiency rate district-wide and for all significant subgroups on California Standards Test, and*
2. *A target of 79% proficiency rate for 2nd – 5th grade students and 65% proficiency for 6th-8th grade students for all significant subgroups on annual MARS exam.*

STANDARDS: *Common Core State Standards for Math* (CCSSM) – math content and practices

INSTRUCTIONAL MATERIALS WE USE

DISTRICT ADOPTED TEXTS: K-6 – *EnVision* CA, 7-8 *College Preparatory Mathematics* (CPM)

SUPPLEMENTAL RESOURCES AND MATERIALS FOR SUPPORT AND ENHANCEMENT: SVMI resources (MARS and Problems of the Month), Navigator, UCLA Algebra Readiness, Khan Academy and other adaptive web based (additional to be selected), Mathland, Math Their Way, Investigations, San Diego materials etc.

ASSESSMENT: HOW WE KNOW STUDENTS ARE LEARNING

- Performance Assessment, interim common MARS/performance tasks,
- California Standards Test (CST),
- Text based and/or grade level created tests,
- Ongoing checks for understanding to inform teaching

TIMELINE/KEY PEOPLE	ACTIVITIES	MEASUREMENT /EVIDENCE	FUNDING SOURCE(S)
5/2012- ongoing Teachers, Math Facilitator, district leadership	**Common Core State Standards for Math (CCSSM) Implementation:** 1. Explore Standards for Mathematical Practice 2. Revise and maintain common scope & sequence aligned with text materials, reflective of CCSSM allocate time for collaboration 3. Utilize and update performance assessments to prepare for upcoming assessment system	☐ Artifacts: PD agendas, reflections, observations ☐ Trimester Scope & Sequence K-8 ☐ MARS Correlation (grades 2-8) ☐ Interim MARS & annual MARS exam	Silicon Valley Community Foundation (SVCF) Grant Title II
5/ 2012 ongoing teachers, Math + 21st Century Facilitator Coastside STEM	**21st Century Learning & Math** **1.** Connect math plan to operational and technology/media/ library plans to ensure infrastructure and support for technology tools 2. Maintain Robotics Units in 4th and 7th grades and implement 6th grade activities	☐ Artifacts: PD agendas, reflections, observations	SVCF Grant PEF
5/ 2012 ongoing Teachers, Math Facilitator,	**RTI^2 – Support and Enhance Instruction** 1. Implement web-based adaptive math programs 2. Develop technology/media resource library 3. Explore appropriate intervention tools for students who need support 4. Explore differentiation programs and instruction for mathematically gifted students	☐ Artifacts: PD agendas ☐ Criteria for web-based programs ☐ Number of students using web-based programs	EIA Title I PTO/PTA SVMI Grant PEF
5/ 2012 – ongoing Teachers, parents, PSV, PEF, PTO	**Family and Community Involvement** 1. Maintain collaborative partnerships with Pacifica School Volunteers ,PTO, PEF 2. Support math events dependent on school 3. Continue discussion about the role of homework ***i*** 4. Develop and maintain partnerships with articulating high schools	☐ Artifacts: workshop agendas, participation	(PSV) EIA Title I PTO/PTA PEF
5/ 2012 ongoing Teachers, Math Facilitator, district leadership	**Professional Development** 1. Silicon Valley Math Initiative 5-day series + Coaching Institute 2. SIP days and grade level meetings 3. Robotics – 4th & 7th ; 6th grade 21st Century Learning Experience 4. Individual coaching and support 5. San Mateo County offerings – Math Matters, CPM, Common Core Leadership 6. Participation in North County Math Collaborative events and grant activities	☐ Artifacts: workshop agendas, participation	SVCF Grant Title II Title II PEF