

DJUSD Elementary Schools

Math Instruction Update June 2014

In May, 2013 the Board of Education directed staff to work with teachers and sites to ensure appropriate placement in math at all sites. Below is a list of Differentiation Strategies that elementary principals report are taking place in their intermediate classes.

Birch Lane

- 4th grade pull-out intervention group with Math Specialist (from all 4th grade classes): 9 students
- 2 -3 additional students who receive additional support in-class with the teachers.
- 5th and 6th grade pull-out intervention with classroom teacher -23 students (these are from neighborhood program), mixed 5th and 6th
- 5th and 6th grade intervention in Montessori is with the teacher within their class there are 3-4 students in each class who need additional support.
- One teacher had the 6th grade students for more practice work and another had the 5th graders for more practice work
- 4th grade pull-out enrichment with Math Specialist 9 students (from all 4th grade classes)
- 5th and 6th grade pull-out enrichment with Math Specialist (when we have math groups): 27 students from neighborhood program (16 – 5th graders, 11-6th graders)
- 5th and 6th grade pull-out enrichment with Math Specialist: 26 students from Montessori program (12 – 5th graders, 14 – 6th graders)
- Offered an after school math club once a week at Birch Lane for extra enrichment. A college student from UCD volunteered with me to introduce students to mathematical concepts and theories (binary code, sparse rulers, logic puzzles, the golden ratio, to name a few). There were about 15 students who attended ranging from grades 4-6.

Cesar Chavez Elementary School

Grade Level	Strategies
4th	<ul style="list-style-type: none">• Math rotations/stations• Students grouped by ability level• Using challenging/enriching activities for advanced students• Follow the suggestion for Differentiation, Individualized Learning and Enrichment Activities as listed in step 3 of the lesson plans in the Everyday Mathematics Teacher's Lesson Guide. Activities include, but are not limited to games, Math Masters pages, problem solving tasks, small group activities, use of manipulatives and integration with other subject areas.• Advanced kids on an individual program where they do some of the regular work, and then advanced pages as well. They take the tests when they are ready and get support from me as they need it.

5th	<ul style="list-style-type: none"> • For lower kids, I meet with them individually or in little groups. • Small group instruction • Parent volunteers • Games • Re-teaching • Shortening/ eliminating assignments • Math coach lesson plan guides that she sends with each unit. • UCD interns to play math games with groups of students while I pull other students for individualized instruction. • Looking for patterns. • Looking for varied ways to solve a problem. • Have students explain their solution so that everyone is convinced that the solution is correct and reasonable. • Estimating in every possible situation. • Using dates in Social Studies to estimate and calculate historic time lines and longevity of key people. • Using the atlas portion of the Everyday Math student reference book to read charts, tables, graphs, and diagrams and interpret the meaning. Often used to compare and contrast growth in the United States. • Art work based on math such as drawing to scale, geometric figures, quilting, tessellations. • Using the Enrichment boxes that were set up for Unit 5 at our site. Would like to develop this for each unit. • Utilizing the expertise of our math specialists when they work with our students and class. • Planning with our math specialists and discussing teaching strategies. • Constant communication with parents about what we are doing in math.
6th	<ul style="list-style-type: none"> • Pretests given; all students take notes on the lesson, but, then, the students who passed specific lessons on the pretest skip the independent practice and go right to the homework which they finish in school. This then gives them the opportunity to do any of the math stations, one of which was an old seventh grade Transitions text; however, this system will not work next year as the classes have changed completely. I will still have the other math stations available to them. • To catch struggling students, I give math quizzes often and then work one-on-one or in a very small group the next day on the missed concepts, even if they only missed one problem, so that they know the material before we move on. • Use the differentiation that came with the text book adoption. In addition use Marcy Cook which has different levels of math ability activities

Korematsu Elementary School

4th Grade AIM 2013-14

This year, there has been a greater range in student ability, so I have used a variety of strategies to differentiate, particularly this term.

- Students who did not pass a unit test were retaught in small groups, and retested using a teacher-made test rather than a repeat of the same *Everyday Math Assessment*, focusing on key skills.
- I did small group after-school math for 4 or 5 students in January and February.
- Students are now working in the 5th grade Journal 1 at an independent pace with a minimum of 3 pages per day. Much of the content had been covered in 4th grade Journals with some extension added to the 5th grade. It has been reinforcing for the students who needed review in fractions, multiplication, and division.
- Rather than giving individual unit tests, I am checking and conferencing independently with students several days a week before corrections are done. Correcting missed problems in daily work has been mandatory.
- Three students have completed all of Journal 2, shown mastery on the Midyear Test, and are now collaborating on math projects. I expect a number of students to complete Journal 2 this week and work independently on projects in the remaining weeks. It allows me more time to work with students who have gaps and challenge for those most in need of the freedom and ability to work independently.
- (Math projects have been gathered from extension activities in *Everyday Math Grade 4 and Grade 5*.)

All students participated in Math Olympiad contests. We discussed problem solving strategies before and after each Olympiad contest. Though some students did not score high on the individual competitions, the exposure and discussions helped students to feel more confident, especially in breaking down the language of math related to problem-solving.

Korematsu 4th grade General Ed.

- Clustered AIM students that chose to stay in general ed. or were not selected in the AIM program into one general ed. classroom.
- Create an opportunity, during class time for:
 - Complexity, acceleration, compacting
 - Used flexible grouping
- Used multitude variety of assessments
 - Teacher made
 - Performance based
 - Rubric based
 - Curriculum embedded

- District benchmarks
- Teacher observations
- Student self-reflection
- Traditional tests/quizzes
- Grouped students during math instruction by need, in the classroom, based on the above assessments
- Used curriculum, supplemental materials, teacher made materials, Khan Academy, learn zillion, etc.
- Math Club , extended learning for 4th/5th after school
- No pull out, unless Special ed.
- Did not share students, only 1 student left the classroom for instruction in another classroom.

Korematsu Elementary 5th/6th grade Math differentiation

- Time in class to concentrate, work and complete a task
- Quiet Time
- Intervention occurs in the classroom
- Group work
- Extension problems
- Multiple answer problems
- No pull out during math in most cases (Special Education)
- Pull out later to back fill
- Oral presentations by all
- Questioning-ask why or how a student got the answer, not right or wrong
- All students ask questions
- Allow students to struggling with problems in the classroom
- Give guidance instead of giving answers
- Allow frustration
- Allow wrong answers
- Persevere Time
- Allow time to think
- Math journals
- Writing in Math
- Show finished work of students, then allow all students to rewrite their own work

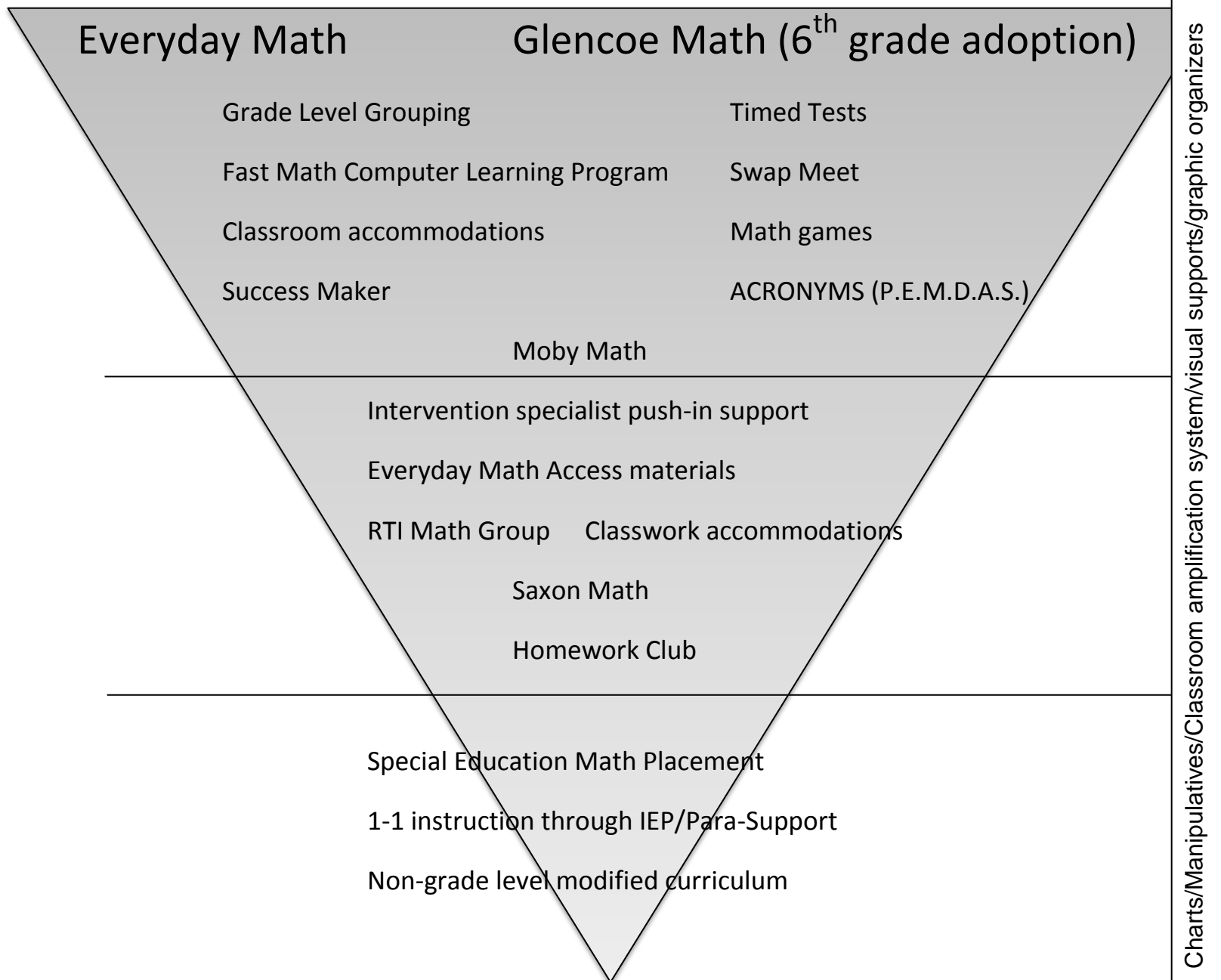
- Allow student critiquing of other student work
- Differentiated extension problems

Mathematics Differentiation and support at **Marguerite Montgomery Elementary** 2013-2014

The following activities supported differentiated math support and achievement at MME this year:

- Co-teaching grades 2/3 core and intervention lessons. Included model lessons, curriculum mapping and support, small group core instruction in both push-in small group and leveled groupings amongst multiple classrooms as well as targeted intervention
- Co-teaching grades 4-6 core and intervention lessons. Included model lessons, curriculum mapping and support, , small group core instruction in both push-in small group and leveled groupings amongst multiple classrooms as well as targeted intervention
- Lesson planning support for differentiation in grades 3 – 6
- Curriculum mapping for grades 3-6
- Create assessments to support Academic Conferences which result in differentiated instruction, intervention and on-going appropriate grouping for grades 1 – 6
- Coach all teachers with special emphasis on teachers new to MME and Everyday Math in grades 3 – 6. Coaching included student engagement, differentiated instruction, data analysis, EDM, CCSS
- Staff professional development in CCSS, Depth of Knowledge, CCSS math practices, and Illuminate

Math Interventions: North Davis Elementary 13/14



Patwin Math Differentiation

FOURTH GRADE

Informal assessments/observation and formal assessments including daily math, unit assessments, and one on one assessments. Instruction is designed for differentiation and we also use partners to work effectively together. Assessment occurs continuously although there is not formal grouping; teachers usually differentiate within the classroom. There are approximately four different levels of math instruction needed. Students work at their own pace. They work on lots of problem solving that uses various methodologies to complete. They have time to figure out problems and use writing to explain what they know. When writing we use sentence frames. Everyday Math games practicing skills that need honing. Materials include Everyday Math, Everyday Math games, Marcy Cook tiles, POW (Problem of the Week), math videos from various online sources. Diana Zaragoza assists. In addition, we use UCD interns and parent volunteers (not staff).

FIFTH GRADE

Assessments include standardized tests/STAR, teacher placement from previous grade level on placement cards, previous adoption's fluency test, timed tests in x/\pm . Students are assessed at academic conferences and/or after chapter tests as needed. There are three levels formally, although within a class there could be further distinction of levels, sometimes all year, other times as needed.

Placement in levels, scaffolding, skills work, computer work at ability level, projects, use of aides and interns in class, individual work/small group work/whole class, more time allowed, less or more problems, monthly challenge problems, open-ended extra credit, etc. Materials include EveryDay Math and they also pull from a huge variety of materials collected and perfected over the years; Moby Max. Support is provided to students through the grade level team and math specialist.

SIXTH GRADE

Sixth grade currently uses the 6th grade Glencoe placement test, a teacher created operations with decimals page, and input from the Math Specialist and previous teachers. Teachers also look at their past STAR scores and how they do on a multiplication facts test. They re-assess for movement after most chapter tests. Students are broken out into two levels at present because we only have two teachers. Within the class of students who go to the at/below level group, there are 4 additional levels. (Total of 5 levels in the grade.) In this class students work in small groups at their ability level. They rotate through 4 stations daily: small group instruction, guided practice, independent goal work, problem solving/challenge. All students receive instruction at grade level as they are ready, but also receive intensive intervention in targeted areas. The advanced group also works through stations, has projects, POWs, Challenge Problems, Logic Problems, and Math Olympiad. Materials used includes Glencoe, Mathlinks, UCDMP, Marci Cook, MobyMax, Singapore Math, math projects, challenge, and logic books, teacher made materials designed to meet students individual needs. Diana Zaragoza and UCD Mast interns provide support to group work as they can.

Pioneer Elementary

Instructional Strategies

- Time in class to concentrate, work and complete a task
- Quiet Time to think about problems
- Intervention occurs in the classroom in “real time”
- Group work – usually groups of 2-3, teachers make sure all contribute
- Extension problems
- Multiple answer problems
- No pull out during math in most cases (Special Education) – pull out is done after lesson when needed
- Oral presentations by all
- Questioning-ask why or how a student got the answer, not right or wrong
- All students ask questions
- Struggling in the classroom – allowing students time to work out problems
- Give guidance instead of giving answers
- Allow frustration, wrong answers
- Many classes use white boards to check for understanding
- Use of document camera to show student work and different representation of answers

Time

- Allow time to think
- Math journals to show work and reflection (explain in writing how they got answers)
- Writing in Math
- Show finished work of students, then allow all students to rewrite their own work
- Allow student critiquing of other student work
- Differentiated extension problems

Math Differentiation at Willett 2013-2014

4th Grade:

For differentiation in Math, I use my MAST and UCD interns to circulate while I pull individuals or small groups to work with students. They also can work with students individually. Games also provide a way for students to practice skills and work at their own pace. We have lots of drills and mini exit quizzes to check for understanding along the way. I have a math enrichment corner where students who are done early can do some extension activities. We work in table groups or pairs during lessons to solve problems and come up with multiple answers for open ended problems.

I use all the “readiness” and “enrichment” activities that accompany the Everyday Math adoption for each unit.

I use EM games from other grade levels – both higher and lower – for different groups of students.

I also pull materials (both high and low) from other / past adoptions, such as Math Steps or Envision.

I organize my students into somewhat leveled groups for 3-4 days per week, and differentiate my directed instruction for each group.

I have different requirements – expectations for both the performance task and the grading criteria – when we do open ended problems.

I keep all the differentiated instruction within the current unit/topic I am teaching from the adoption—i.e. I do NOT have a small group of students working independently on a totally different topic or in a textbook from another grade level.

I differentiate in math by creating different expectations on the same problems, depending on skill level. For example, one person might do basic division and show the remainder as digits. Others might show it as a fraction. Others might show remainders as decimals, or carry it out multiple places. I also use parents to help me monitor progress and provide one on one help when needed. I try to keep them on the same topic, but allow for extension and experimentation for those who are ready.

Math rotations

Math links packets for re-teaching

Small group work with classroom teacher

Independent assignments

Enrichment packets

Supplemental materials from EDM at other grades, Math Steps, Envision

Readiness and enrichment materials from EDM

5th Grade:

Learn Zillion video lessons for remedial and for advanced students

Small group instruction with me or MAST intern

Small group projects and performance tasks for enrichment-used many performance tasks from the Georgia Frameworks and projects from Teacher Pay Teacher

Project based learning

6th Grade:

Lower performing students:

Math Links packets for re-teaching

MAST intern support during direct instruction

Small group work with me once others are started on assignments

All students:

Visual/manipulative aids for Algebra and Geometry especially

Real world math work (i.e. planning cost/funding ratios for field trips and class events, school survey results interpretation for percents and statistics)

Art combined with math (i.e. Dr. Seuss style 'function machines' for algebra, Escher study and tessellations for geometry)

High Achieving students:

Math for Smarty Pants challenges

Real world applications/PBL (i.e. research, design, present costs/benefit ratios, meet with engineers, and present overview of project to principal and M & O for construction of Bocce Ball court on Willett campus)

Use as 'teachers' in small group settings with peers ("If you can teach it, you must understand it on so many levels")

1. I celebrate as many ways to work a problem as possible (validating different approaches to problem solving) and write them all down for the Lady Bug. We talk about the different ways and question if any seem 'easier' to use than others and 'why' each way works. This helps everyone see the problem in very different ways. It enlarges a student's problem solving tool kit while promoting understanding. All students move forward from where they are to as far as they are able, at the moment, to go.
2. I also have my students seated with a math partner, that I have chosen for them, every day. I choose these partners to help further math understanding, so if I have a student who needs some help in working things through I place them with someone (a) who is slightly above where the first student is, and (b) who can work well with this student socially, and (c) who is able to verbalize math procedures in a clear manner. Some students who already have a very high understanding of math I seat with students who are like them so as to help each challenge each other. It's very effective. This seating helps everyone to access the material but 'differently.'

I have done a combination of the following: different independent assignments, differentiating the level of questioning, having students explain/teach concepts, using both heterogeneous and homogeneous grouping, working with intern(s) to support higher/lower small groups.

Real world applications

Peer teaching

Math for Smarty Pants

Moby Max

Learn Zillion

Leveled math based on student assessments