

# Profile of District C

## CONTEXT

District C is a small suburban district with seven elementary schools and two middle schools. Students come from a relatively small geographic area that includes a variety of neighborhoods, ranging from an upper-income enclave that attracts high-tech executives to a fairly low-income region with many immigrant families who rent their homes. With its location in the Bay Area and proximity to Silicon Valley, cost of living issues loom large for teachers and families alike.

Like the “.com culture” that surrounds it, District C takes pride in being both academically excellent and innovative. According to principals and administrators, teachers are generally open to new approaches and show interest in trying new things. In a time when money for schools is scarce, the district has procured additional funding from a variety of sources. In a partnership with the city, they have built a state-of-the-art community center on the grounds of one of the middle schools. They have also received a series of grants from a local foundation to support the improvement of math education district-wide.

District C also boasts a unique history as one of the oldest school districts in the state of California. It has a long tradition of strong academic performance and an excellent reputation among teachers as a supportive and professional district in which to make their careers. Teachers across the district tend to know each other and to perceive their colleagues as resources. District-wide meetings and events are held throughout the year that encourage both formal and informal collaboration among teachers. Despite these supports, many educators express concerns about the professional development of the many new teachers in District C. They are generally young, with less than three years of experience, and often lack the content knowledge that they need especially in the intermediate grades and particularly in math.

## LEADERSHIP

The district leadership here consists of a Superintendent and Assistant Superintendent, both of whom want District C to be on the cutting edge in terms of curriculum and pedagogy, yet also within the parameters of what the state requires with respect to standards and textbooks. As district leaders, they have made it a priority to provide regular staff development inside the district and admit that over the last several years the emphasis has been on literacy. The Assistant Superintendent tells us that there has never been a doubt that math is very important and that there is a new focus on professional development in math, thanks in large part to grants from a local foundation and the benefits that come with this source of additional funding.

As part of its math improvement grant, District C now has a full-time Math Resource Teacher – a long-time veteran of the district who her colleagues refer to as “the math guru” and “the math assessment queen.” She is in the midst of her 2<sup>nd</sup> year and continues to refine her role to best

meet the needs of district teachers. The position is a new concept for District C, which historically never had the funds to support someone working outside of the classroom. The Math Resource Teacher in District C has a variety of roles: from overseeing the Summer Math Lab program, to coordinating the work of four district math cadres, to acting as an on-call support for all district math teachers. She attends regular meetings, sponsored by a local funder, that are designed to build her skills as a math leader, and tries to bring what she has learned back to the district as a whole.

Through the work of the Math Resource Teacher, a second tier of math teacher leaders is developing in District C. These are the teachers participating in the Math Leadership cadre. At the end of last year, each school in the district was asked to select one of their staff to serve as the school's Math Lead Teacher. This group works closely with the Math Resource Teacher, meeting with her on a regular, almost monthly, basis. Depending on the school, the Math Lead Teachers facilitate math-focused staff meeting and serve as a source of on-site support for their colleagues. They receive release time and stipends to attend additional math professional development. Most of the Math Lead Teachers have participated in the Summer Math Lab and have learned to be official scorers for the district math assessment (this is the MARS test for grades 3, 5, and 7 – more grades will be added this year). This group serves as a critical communication link between the Math Resource Teacher and all district schools.

## **VISION**

The Assistant Superintendent tells us that there is not really a “teaching philosophy” in District C, but she is also careful to point out that “it’s not as loose as ‘everyone just go ahead and do your own thing.’” New teachers go through an orientation where they learn about district-adopted materials and programs – all of which reflect, at least to some extent, the educational character of the district. They review the district mission statement, which articulates District C’s aim to “empower all students through innovative and exemplary practice.” They also go over the various ways that teachers in this district are expected to evaluate student learning and how the district conducts its own assessments. When viewed together, an inherent vision surfaces.

This is a district that desires continual innovation and improvement. Although closely aligned with California Curriculum Frameworks and Math Standards, the curriculum in District C is not static. In fact, it is always changing, aiming to challenge students in more ways and to be more relevant for their lives. Thoughtful use of the most current assessment tools is a major component of the district’s attempt to be on the educational forefront. District leaders believe that high-quality performance-based assessments can help inform instruction provided that teachers understand how best to use them.

The principals we met in District C explain to us that while they find it hard to articulate a K-8 math vision or philosophy, there is a common belief in teaching that is student-centered, that encourages critical thinking, that actively involves students in the lesson, i.e., through “hands-on” activities. They describe District C as a place that values multiple measures of student

achievement. One principal clarified further, “These are very assessment driven times and we know we must meet the state standards so we have the SAT 9. But we also have three different areas that are measured district-wide with our own assessments. For us, Grades 3, 4, and 5 are now MARS, but at every grade level the district also has a math assessment, a writing prompt, and a reading assessment.” The Assistant Superintendent expressed similar sentiments, “There is an unwritten philosophy that you assure kids have the basics but you provide a program rich in problem solving, mathematical thinking, and communication activities. We value a balanced approach and I think our assessment bears that out.”

## **PROFESSIONAL DEVELOPMENT**

A variety of opportunities exist for District C teachers to build their professional skills both in and out of the district. All schools in District C have Site Councils that allot funds for teachers to attend individual workshops and conferences. Principals report that they often suggest upcoming events to their staffs and request that those who take advantage of these offerings share some aspect of the experience with their colleagues, generally by giving a report or demonstration at a staff meeting. The district also has a tradition of providing a limited set of district-wide staff development experiences each year – for example, an in-service day with an outside consultant. According to principals and district leaders, there is an expectation that all teachers will not only take part in district-sponsored events, but also seek out opportunities elsewhere.

Mathematics is a particular focus of the professional development in District C at present. As part of its math improvement grant, the district offers following opportunities to teachers:

- Summer Math Lab: As previously mentioned, for the last three years District C has offered a special summer program in which math teachers team-teach to small classes of students as a means of piloting new materials and trying innovative methods. During the week before the Summer Lab, teachers participate in five days of special training. Once the Math Lab begins, they take part in daily after-school debriefing sessions with the entire Math Lab staff. The Math Resource Teacher for District leads the Summer Math Lab and facilitates the training for teachers. It is seen as an opportunity to practice new math teaching strategies to collaborate with colleagues in a way that the regular school year does not allow.
- Elementary Grade Level Math Cadres: There are three of these groups – one for each of grades 3, 4, and 5. Each of the elementary schools sends a representative to each of the three cadres which meet monthly to discuss ways of supporting teachers in math at their grade level. Much of the work done in the cadres relates to assessment. As one participant told us, “The meetings are geared toward doing better on the MARS test. The Math Resource Teacher gives us resources to use and we spread it out to the other teachers at our grade level. They’re mostly critical thinking-type problems. Then we talk about them and there are practice tests. We can give those and then grade a sample together. It helps us develop consistency.” The Elementary Cadres existed prior to the Math Leadership Cadre (mentioned earlier). They serve as a source of both teacher

professional development and leadership development in mathematics for the district, but participation remains limited to only the three grade levels.

- MARS Scoring Sessions: Those who are interested can learn to be district scorers for the MARS assessment. We met a number of teachers who had taken advantage of this opportunity. Many felt that doing this helped them to understand the meaning of “assessment informing instruction.” They also reported getting great pleasure out of the actual grading process itself. All graders go to a large gym where they are given a single task to score and they get the chance to see how 100’s of students responded. One teacher described this as “an incredible experience!”

In addition to the professional development connected to the math grant, regular district-wide meetings provide some of the few opportunities for elementary and middle school to come together and have professional conversations about mathematics across grade-levels. The middle school teachers we met told us that there seemed to be more of these kinds of meetings as a result of trying to implement the MARS test. They appreciate this chance to come together with their elementary colleagues to learn about the test and to talk about it.

At the elementary level, all schools in District C recently instituted early-dismissal on Wednesdays. These afternoons are used for site-based planning meetings and in-services. Most importantly, they provide an opportunity (roughly three times per month) for grade-level teams to coordinate curriculum and to plan a common program.

## **CURRICULUM**

The Assistant Superintendent tells us that assessment and test scores are what drive the curriculum in District C, especially in mathematics. *Mathland* is currently the officially adopted text for the grades K-5 and has been since 1995. However, the elementary teachers we met use a variety of materials; some do not use *Mathland* at all. For example, many of the K-1 teachers use *Math Their Way* and those in the intermediate grades seem to like TERC *Investigations*. The demands of the new California State Standards have exacerbated some teachers frustrations with *Mathland* – a teacher explains, “It’s heavy on concept development, but there’s just not enough drill.” Because next year is an adoption year, schools in District C are currently piloting new materials. Many elementary teachers told us that they were using a book called *Math Steps* to supplement the *Mathland* text. One elementary school with particularly challenging demographics and a 40% mobility rate has turned to Saxon Math in hopes of unifying the curriculum across teachers and grade levels and raising assessment scores. Because the District relies on state funding for textbook purchases, schools are instructed to choose the materials they pilot from the state-endorsed materials lists.

The two middle schools operate quite differently with respect to curriculum and instruction. One middle school has gone to the math/science core idea, in which students have an 86-minute math/science block each day – extended time that supports lab activities and more complex problem solving. They also use completely heterogeneous grouping. At the other middle school,

all subjects are taught separately (except for a couple of self-contained 6<sup>th</sup> grade classes) in a 7-period schedule that allots 40-43 minutes per day to math. The different math options at each grade level operate as a way of grouping students according to their achievement level. Both schools use different Algebra texts – one uses *Integrated Algebra/Geometry* by McDougall-Littell, and the other reports great success with the CPM curriculum. Most of the 6<sup>th</sup> and 7<sup>th</sup> grade math teachers are using Glencoe *Interactive Mathematics*, the district-adopted text, with plenty of the supplements from other sources. At both middle schools, the math departments meet monthly to discuss any issues related to their program. Assessment is reportedly a frequent topic. Much like the middle school teachers we have met elsewhere, high school math placement is a concern for this group as are student standardized test scores.

Across all grade levels in District C, we sensed that teachers (to varying degrees) were growing frustrated with piecing together their programs, particularly in light of the new State Math Standards and mounting assessment pressure. We heard things like: “I’d like it laid out for me – I just want something user-friendly.” In order to ease some of this burden, the Assistant Superintendent’s office has prepared a series of brochures entitled “Guide to the Core Curriculum” for each grade level – these are updated every year as state standards and frameworks change. However, the math portion of these publications is essentially a list of topics that students should experience in each grade – clearly a help, but not the kind of specific direction that teachers want at this time – a common situation in the year prior to a new adoption.

It seems that District C is on the verge of having many components of its math program come together to form something much better than what it has today. As one elementary principal stated, “We have pieces of a good program, but not a good program yet.” Officially, math is very much a priority in the district at the present. In the district’s four-year strategic plan for 2000-2003, Strategy #1 is “All students will achieve academic and personal success.” The first item underneath that strategy states: “Create a math program that aligns instruction and assessments with state and district standards.” District C is in the midst of accomplishing this goal.

## **ASSESSMENT**

As a group, students in District C do well on standardized tests – average percentiles on the most recent SAT 9 are above the 70<sup>th</sup> percentile at every grade level. While district leaders do not want to devalue these results, they make it quite clear that state standardized test scores are just one indicator of student achievement and a limited measure of students’ capacity to think mathematically. District C wants something more.

For this reason, the district has a history of having its own assessment tools – performance assessments that are given in math, reading and writing in all grade levels. The primary purpose of these tests has been to provide teachers and students with a more meaningful measure of student performance, aligned with the educational priorities of the district. The district also emphasizes the importance of varied teacher assessments at the classroom level: daily checking for understanding, formal and informal testing, observations, portfolios, and so on.

It follows that the current math improvement effort in District C has assessment at its center. Through its math improvement grant, District C became one of 29 schools participating in the Northern California Math Assessment Collaborative. This group contracted with MARS to write the assessment that is currently being implemented district-wide. Most of the work that the Math Resource Teacher currently does with teachers is connected to assessment, particularly helping teachers understand and prepare for the MARS test. The three grade level cadres have essentially been a vehicle for getting sample assessments to teachers and making sure that they have a sense of the kinds of questions that appear on the MARS test. The Math Resource Teacher told us, “Teachers are beginning to call and ask if I can help them analyze an assessment. They want to know how the scoring is done and what the results say about their students.” An increasing number of teachers are volunteering to score the tests, knowing that first they must be officially trained at a MARS workshop.

As with the previous district-based assessments in math, teachers and students have the opportunity to look at the new assessments after they have been scored. Teachers generally find the results informative, particularly those who are MARS-trained scorers. “We do MARS for grades 3, 4, and 5, and it’s a great assessment tool because the kids get credit for showing their understanding of the math – it reminds me of those big long problems in college and your professor gives you some points for showing your work.”

Principals and teachers tell us that the assessment-driven culture in this district reaches down to the student level. We were told, that the middle school students, in particular, are very conscious of the SAT 9 and district assessment scores. They know that teachers get reports of these scores and that poor performance can lead to summer school or other remediation. According to one middle school principal, they also take pride in getting an API rating above 800 (the state cutoff for a school meeting standard).

## **INSTRUCTION**

Unfortunately, our research team did not observe actual math lessons in this district. Therefore, we must extrapolate about instructional practice in District C based on our conversations with teachers, on the examples of student work in classrooms and hallways, and on the brief glimpses of classes in session that we happened to witness as we completed other portions of our work.

The elementary teachers we met told us about a rich variety of resources that they make use of throughout the year: *Mathland*, Marilyn Burns replacement units, TERC *Investigations*, *Math Steps*, *Math Coach*, and many teacher-generated activities like “1000 Beans.” Students sit in groups or tables and all classrooms have a set of manipulatives – part of the *Mathland* adoption. Our sense is that the manipulatives get used once in awhile, but not as often as they might. Many of the elementary teachers we met in District C also used phrases like “teaching for understanding.” They told us about how important it is that students be able to convey their mathematical understanding in words, which usually means writing. They talked about emphasizing problem solving and using math to do everyday things – things related to what children experience in their lives. However, we also had a 2<sup>nd</sup> grade teacher tell us how much

her students love getting “drill and kill” worksheets. Most of all, the K-5 teachers in District C told us how much they rely on each other and their Math Resource Teacher for support and how grateful they are for any planning time that have together. As a result, they think students in the same grade in the same school, and across classrooms, are having more consistent experiences.

It is more difficult to get a handle on the middle school levels. Our sense is that the student experience in grades 6-8 is much dependent on the school and the individual teacher. Some students are in heterogeneous classrooms, where they work collaboratively on hands-on activities, and put together portfolios of their work over the course of the year. Others are tracked according to prior achievement; they sit in fairly traditional classrooms where they spend a lot of time listening to the teacher and doing practice problems. We had one middle school teacher tell us that he does no extra preparation for the district assessments and another say that he had decided to give only multiple choice tests because of the SAT 9. We saw some lovely tessellation projects hanging on the wall of one classroom and we saw a teacher at an overhead leading students through the steps of the long division algorithm in another. The teachers at the middle school level did not talk about collaboration in the same way that their elementary colleagues did. They also did not readily share the specifics of their classrooms practice. They did indicate, however, feeling rather left out of the District’s current math improvement effort aside from participating in the MARS test – partly because so much of the math leadership is concentrated in one person, the Math Resource Teacher, and partly because her experience is solely at the elementary level.

## **COMMENTARY**

The administrators in District C know that they are still very much in the midst of putting together a coherent K-8 mathematics program. However, they also recognize that some important pieces are falling into place, assessment being a particularly important one. There is a tradition of innovation in this district and a culture that values trying new things. Teachers view each other as resources and enjoy working together – as one teacher put it, “I’ve never been in a district where we’ve had this kind of collaboration.” District C also benefits from a very supportive parent community and a School Board that has not put pressure on teachers and schools to shun reform. The district in return has tried to be proactive in communicating with parents, i.e., through Family Math Nights and inviting them to visit schools. As the Assistant Superintendent told us, the bottom line is likely “our parents are very aware of our test scores, but they look at them and they are satisfied. We work very hard and have no illusions that our math program is perfect.”

The teachers and administrators in District C act and talk as if there is always room for improvement – that if they just work a little harder or focus a little more carefully, then they will come that much closer to meeting the educational needs of all their students. Underlying this approach is the fundamental belief that assessment will provide the direction they need. A newcomer to District C, reflecting on what she viewed as the “assessment focus”, explained the phenomenon this way, “You can tell in this district that they’re making kids think at an early age. I mean if a kid has basic skills and you give them one of those word problems, they’re lost. In

this district, they focus on giving kids those critical thinking skills at a young age, as early as 1<sup>st</sup> and 2<sup>nd</sup> grade.”