

Description of Mathematics Programs

Foundational to the Dana Center/Agile Mind mathematics programs are these principles: that all students, regardless of their life circumstances, need and deserve access to challenging curricula every day, and that all teachers need and deserve tools and data that help them address the changing demands of the accountability landscape and the varied experiences their students bring.

Development of concepts to reflect the rigor of next-generation standards

A deep, authentic command of mathematics is reflected in three aspects of learning: conceptual mastery, procedural skill and fluency, and application — or the ability to correctly apply mathematics in different situations. Throughout our lessons, homework, and formal assessments, students work on rich tasks that ensure their learning reflects the rigor of the standards. Lessons are designed to support the development of deep conceptual understanding, and the use of multiple representations and real-world contexts support differentiation for diverse learners.

Strategic, deliberate practice and review—supported through print materials and online practice and assessment—enable students to attain the fluencies and procedural skills the standards require.



Why do we—and the educators we serve—think ours are the best, most supportive, programs?

- **Professional development.** Our robust professional support system—online, in print, and face to face—is described by teachers and administrators as the best they have experienced. It supports educators as elite professionals, and recognizes their differing needs, backgrounds, and practices.
- **Interactive visualizations.** Our programs include hundreds of interactive visualizations of key mathematics concepts at each grade level to promote student engagement and deepen understanding, collaboration, and discourse. By design, they enable educators to differentiate the experience of learners through multiple entry points.
- **Practice and assessment.** Our thousands of online, technology-enhanced practice and assessment resources reflect the expectations of next-generation assessment. They are automatically graded, to free educators to focus on outcomes, not on chasing or grading assignments.
- **Real-time data.** Our system reports effort, progress, and performance for individuals and groups of students in real time. This makes it easy for teachers to differentiate instruction based on data and to identify challenge areas that need further instruction. It equips students and their families to take responsibility for learning.
- **Teacher tested and proven design.** Every component of our programs is tested and improved based on the advice of educators. More than 40,000 teachers in 15,000 classrooms have used

our comprehensive programs in the last decade, and thousands have provided feedback that has shaped improvements to ensure our programs will work for all schools and districts.

Designed for all students

Our programs equip teachers to enact a curriculum in every class, for every student, every day; to enable students to take responsibility for their own learning; to intensify interactions between teachers and learners in critical competency subjects; and to use data to inform these processes.

We work to first make the most crucial big ideas transparent to teacher and learner and then sequence them in such a way that students are able to build their understanding by making connections among and across those ideas. Integrated into the syllabus are strategies and supports indicated by research to be most effective for student learning.

The programs appear in a “blended” format, meaning that some essential materials are provided online and others in print. This enables us to enrich the resources with interactive animations and extended explorations that deepen student understanding of central concepts and allow teachers to easily represent concepts that might otherwise be difficult to teach. Program materials are shared by teacher and students during class, and are used by students outside of class to reinforce their learning. Agile Mind printed materials—Student Activity Sheets—are designed to be used in tandem with online content to further develop students’ conceptual understanding, provide practice towards mastery, consolidate learning, and apply it to solving problems in real-world contexts.

Emphasis on problem solving and modeling

Through problem solving and modeling approaches, our programs require students to engage with the mathematics and draw on their existing knowledge to build new understandings. Learners are supported through embedded questions and prompts to help them get started on new activities, maintain cognitive engagement, focus on key ideas and relationships, persist productively, and internalize and engage in the Standards for Mathematical Practice.

Supports for academic literacy

Research on how language impacts learning in mathematics has expanded substantially in the past decade, and makes clear the importance of academic literacy to achieving the intent of grade-level standards. Our programs apply this research to help students build essential academic vocabulary, comprehend and analyze key elements of mathematics problems, explicitly connect different representations of mathematical situations, and reflect upon and communicate their understandings. They encompass rich, practical teaching strategies beneficial to language learners, to special populations of students, and to all students in the following ways:

- Terms are clearly defined within the context of what is being learned
- Language connections and visual representations strengthen vocabulary development
- Word origins and multiple meanings for terms are used to develop connections between familiar, everyday language and academic vocabulary
- A Glossary of key terms with visually rich examples is available in English and Spanish
- The Advice for Instruction provides targeted supports for teachers to promote academic language development and instructional strategies that are effective with English Language Learners (ELLs) as well as hesitant learners

Real-time data and reports on the progress of effort and learning

Having timely data to represent and report student effort and progress is key. Reports surface “what now?” questions in real time for individuals and groups, and support use of data to inform differentiation strategies. The data make it easy for busy educators to know how students performed on each item and identify potential challenge areas that need further instruction. Vivid graphics pinpoint student progress on assignments and identify which are struggling and which are thriving. These data equip teachers and leaders to look at instructional efficacy and connect effort with outcomes. Additionally, teachers can use data to address differences in learning needs early.

Robust teacher supports

The tools and resources that accompany each topic support teachers as professionals and equip them in their daily practice. Advice for every topic contains respectful guidance for planning and teaching each lesson:

- Strategies for facilitating exploration of key concepts that engage all learners
- Suggestions for promoting discourse, and for individual, small-group, and whole-class learning
- Guidance for scaffolding and deepening student learning, and for differentiating instruction for learners with diverse needs
- Embedded questions and advice in lessons to help teachers support struggling learners
- Instructional strategies proven to be effective with English Language Learners as well as hesitant learners
- Further questions to extend students’ conceptual understanding and push at higher Depth of Knowledge indicators
- Periodic advice to teachers that highlights strategies to build students’ proficiency with the Standards for Mathematical Practice

Blended professional supports

Our model of professional development is designed to introduce and sustain high-yield strategies in the use of our programs to increase student engagement, achievement, and persistence in mathematics. Partner schools report significant gains in the number and diversity of students who are leaving high school ready for college and for the contemporary workplace.

During annual face-to-face professional development Institutes and ongoing in-person and virtual support, teachers, coaches, and instructional leaders learn to use and integrate Agile Mind resources into their practices, gain experience in collaborating on common lessons and assessments, and learn strategies for ensuring a successful, rigorous learning experience for all students. In addition to Institute attendance, most partner districts choose to have follow-up sessions during the academic year customized to meet specific needs of participating faculty and students.

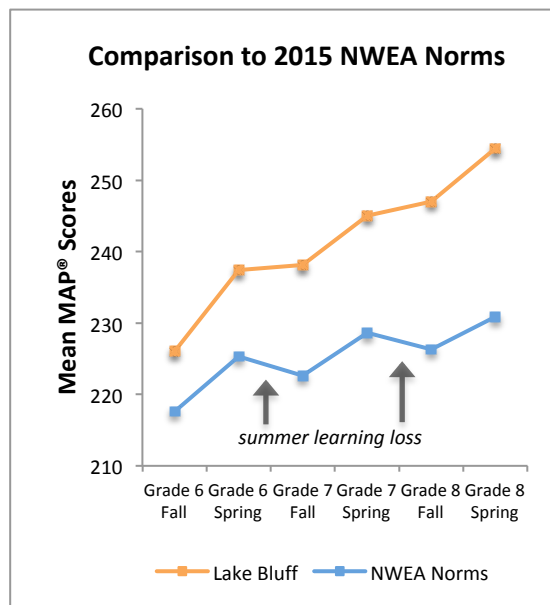
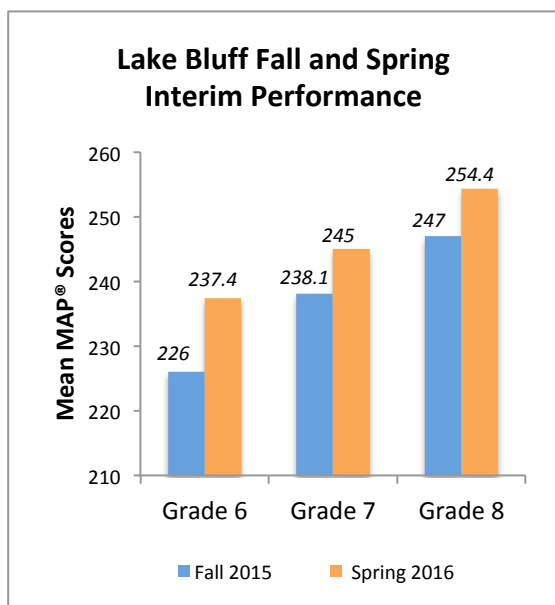
Evidence of Efficacy as Reported by Districts

Lake Bluff, IL

North of Chicago, Lake Bluff Elementary School District 65 serves approximately 1000 K-8 students.

Agile Mind's **Middle School Mathematics 6, 7, and 8** programs have supported dramatic gains in student achievement. Lake Bluff students are far outperforming the 2015 NWEA 2015 MAP® normative data across the board, and 2016 results demonstrate growth increasing at each benchmarking stage:

- **Lake Bluff's MAP growth significantly outpaced NWEA norms** from beginning- to end-of-year assessment, with **48% greater growth at Grade 6**, **15% greater growth at Grade 7**, and **61% greater growth at Grade 8**.
- Unlike what is predicted by NWEA norms and similar data nationwide, **Lake Bluff students experienced no summer learning loss**.
- From the beginning of grade 6 to the end of grade 8, district MAP scores grew by 28.4 points. This represents 114% greater growth in middle school than that predicted by NWEA norms.



Farmington, NM

Farmington Municipal Schools is a comprehensive school district in New Mexico serving over 11,000 students at 18 schools. More than 50% of students in the district qualify for free and reduced lunch.

During the 2015-2016 school year, Farmington enacted Agile Mind's ***Middle School Mathematics*** programs as the core instructional resource for middle school. Students' performance on end-of-course (EOC) exams revealed dramatic growth – a **37% increase in the number of students who achieved proficient or higher on the EOC.**

