

LA Unified Math Mission, Vision, Goals & Working Theory of Action

Mission:

The mission of the Mathematics Branch is to ensure that all learners will have equitable access to a balanced and culturally relevant instructional program that provides all students with the experiences, opportunities, and resources to develop and communicate deep conceptual understanding, to be procedurally proficient, and become adept problem solvers in math.

Vision

All LAUSD students will identify as mathematicians, see the beauty and joy in mathematics, and use their math knowledge and skills as tools for empowerment and liberation, in service of becoming change agents within their local or global community. To build this identity, TK-12 Mathematics teachers and leaders in LAUSD will provide opportunities for all students to engage in mathematical discourse, sense making and meaningful problem solving to develop open, inquiring, and demanding minds with the confidence to approach novel situations with adaptability, insight, and creativity.

Math Goals

- In order to improve Algebra I pass rates, move students, on average, 50 points closer to proficiency on Smarter Balanced Assessment (SBA) math from 2019 to 2026 in Grades 3-8.
 - Performance for these student groups should be accelerated faster than the district-wide goal: English Learners: LTELs and PLTELs, African American students, and Students with Disabilities
 - [LCAP Required and Progress Monitoring Metrics:](#)
 - Average Distance from Standard Met for Grades 3-8 in mathematics
 - State Chronic Absenteeism rate for Grades K-8
 - Progress report and end of year mathematics marks/gades
 - % of students meeting interim assessment (Renaissance STAR Math or Edulastic) benchmarks
 - % of students scoring above on the CAASPP Interim Assessment Blocks (semi-annually) or scoring met or exceeded on the Interim Comprehensive Assessment (annually)

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Why an LAUSD Mathematics Theory of Action?

The LAUSD Mathematics Theory of Action, is a multi-level articulation of the changes we must make for our students across LAUSD in mathematics, that will build unity across the various leadership roles and teams to fulfill our vision. We build systematic alignment across levels and roles through articulating a clear, yet bold and possible vision and mission shared across the system, and so we can intentionally build aligned capacity building and monitoring of support systems- in service of deeply supporting all leaders and teachers, to in turn better support students in reaching their hopes and dreams because of the experience in mathematics. For mathematics to be a gateway to those hopes and dreams in LAUSD, the future of mathematics will require highly specific shifts in practice to be implemented for leaders at all levels and for teachers. **Our system is a set of connected teams with key roles that have reciprocal responsibility in the success of meeting our goals. We believe each team must work together intentionally to learn together and then implement actions aligned with these 3 categories:**

Action Category 1: Communicate and align mathematics teaching and learning mission, vision, and strategic plans.

Action Category 2: Create systems for ongoing capacity building that supports generative growth.

Action Category 3: Use student-driven data to guide equity-based resource allocation.

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Working Theory of Action - Summary

All students will realize their full and productive math achievement, have positive, productive math identities, and reach our math vision because they have consistent access to strong and empowering instruction throughout their math career in LAUSD;					
If the Central Office selects materials and tools that support that vision and incentivizes and monitors their use;	And if all Local Districts set and implement localized strategies to implement this vision and align their resource allocation;	And if all COS leverage their teams to help schools focus on instruction and use data continually (to) improve their instructional program;	And if all building leaders monitor their instructional program and provide ongoing, job-embedded and data-driven support to teachers, and build the collective efficacy of teacher teams;	And if all teachers live out productive-beliefs about mathematics teaching and learning through daily instruction by enacting effective and equity-based math teaching practices ;	And if all teachers leverage their instructional materials, student data, and professional learning to work collaboratively to continuously improve their practice;
And if all levels of LAUSD support parents and families as equal partners in mathematics teaching and learning					
The LAUSD Mathematics vision will be fully realized since all adults, at all levels in our system coherently: 1) Share in our vision for what is possible and align all plans to the mission, 2) Work as teams to capacity build and 3) Monitor implementation systematically for the sake of equity.					

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Working Theory of Action: by Level of the Organization

If adults at all layers in LAUSD believe in the potential and capacity of all students and our vision for effective and equity-based mathematics teaching and learning, deepen their understanding the type of instruction that enables that vision over time through effective ongoing adult learning at all levels, and take action by challenging and dispelling unproductive beliefs about mathematics teaching and learning;

Level of the Organization and Role For a more detailed resource of Possible Actions by Role, go HERE .	<u>Action Category #1:</u> COMMUNICATE AND ALIGN MATHEMATICS TEACHING AND LEARNING MISSION, VISION, AND STRATEGIC PLANS	<u>Action Category #2:</u> CREATE SYSTEMS FOR ONGOING CAPACITY BUILDING THAT SUPPORTS GENERATIVE GROWTH	<u>Action Category #3:</u> USE STUDENT-DRIVEN DATA TO GUIDE EQUITY-BASED RESOURCE ALLOCATION
Division of Instruction (Central Office) Role: DOI TK-12 Math Leadership Team <i>And if the DOI TK-12 Math Leadership Team . . .</i>	Clearly and regularly communicates a vision for high quality mathematics teaching and learning.	Supports Local Districts in recognizing and communicating a common instructional focus around effective and equity-based math teaching practices and in providing math professional learning and implementation support to school leaders, coaches, and teachers.	Encourages, supports, and incentivizes the use of high-quality instructional materials; sets and monitors progress towards clear milestones for effective implementation; and shares useful and actionable progress monitoring data to allocate resources.
Local Districts Role: Local District TK-12 Math Leadership Team <i>And if Local District Leadership Teams....</i>	Clearly and regularly communicates a vision for high quality mathematics teaching and learning with a Local District strategic plan that offers specific attention to the support structures that are available across the LD to support school leaders, coaches, and teachers and which includes a feedback loop from CoSs to build capacity and drive coherence.	Provide math professional learning and implementation support to school leaders, coaches, and teachers on implementing high-leverage math instructional activities with aligned observation tools to measure the use of effective and equity-based math teaching practices; and support school leaders and ILTs in designing, implementing, and maintaining collaborative inquiry systems and structures.	Use evidence-based practices and progress monitoring data to maximize and allocate resources that support strong implementation of the vision, provide time for educator collaboration, and teacher leadership.

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Community of Schools Role: CoS TK-12 Math Leadership Instructional Team <i>And if Community of Schools TK-12 Math Leadership Teams...</i>	Clearly and regularly communicates a vision for high quality mathematics teaching and learning that aligns with and reinforces the Local District strategic plan for implementing this vision and which includes a feedback loop from school leaders and teachers about the effectiveness of the Local District strategic plan.	Provide math professional learning and implementation support to school leaders, coaches, and teachers on implementing high-leverage math instructional activities, use observation tools and data to support the enactment of effective and equity-based math teaching practices at a high level; and support school leaders and ILTs in designing, implementing, and maintaining collaborative inquiry systems and structures.	Work with school leaders to prioritize their resources and use progress monitoring and observation data to continually improve their instructional program.
Schools Role: School Leaders and ILT <i>And if School Leadership Teams ...</i>	Clearly and regularly communicate a vision for high quality mathematics teaching and learning.	Implement and maintain systems, structures, and safe spaces for teachers to engage in new learning, deliberate practice, and reflection; prioritize time to regularly observe instruction and provide developmental and mathematics content/curriculum specific feedback; and provide ongoing job-embedded, mathematics professional learning and implementation support to teachers on implementing high-leverage math instructional activities, with an emphasis on enacting effective and equity-based math teaching practices.	Develop teacher leaders to facilitate high quality and effective collaborative inquiry cycles using student work and progress monitoring data; recruit highly qualified teachers and make instructional programming decisions guided by students' needs and classroom observations.

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Classrooms Role: Teacher Teams (Grade Levels OR Math Departments) <i>And if Teacher Teams.....</i>	Understand and articulate a vision for high quality mathematics teaching and learning to all stakeholders.	Consistently use high leverage math activities in enacting effective and equity based math teaching practices and standards-aligned lessons; engage in collaborative inquiry cycles to investigate and inform instructional decisions based on student data, with a goal of continuous improvement; and have the time and support they need to persistently enact new learning through deliberate practice and reflection.	Understand the structure and purpose of the high-leverage math instructional activities from their instructional materials and consistently examine the result of math teaching by eliciting and responding to student thinking as part of a formative assessment process, including modifying instruction and providing feedback to students.
Math at home Role: Parent/Families <i>And if Parents/Families.....</i>	Understand the vision for high quality mathematics teaching and learning;	Experience high leverage math activities as a learner at schools in math workshops and math family nights in order to support sense making at home for their children and understand the structure and purpose of the instructional materials and high-leverage math activities used in their child's classroom;	Are empowered with regularly provided data on their child's progress and understand where to obtain resources to support them in learning rigorous mathematics at home.
Then teachers will live out productive beliefs about mathematics teaching and learning through daily instruction by enacting effective and equity-based math teaching practices; and then, students will improve their math achievement, have positive, productive math identities, and reach our vision because they have consistent access to strong and empowering instruction.			

Link to [LA Unified TK-12 Mathematics Working Theory of Action: Possible Actions for Roles](#)

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Sample Implementation Team Membership

Local District TK-12 Math Leadership Team	Administrator of Instruction COSAs Data Coordinator All Math Coordinators PL Provider (Partnership, LE or ANet) Implementing Principals and or AP/Coach (Optional: LD Superintendent)
CoS Math Leadership Team	
School-Level Team	Principal ILT AP Over Math Coach Math Dept Chair (Teacher Leader)
Teacher Teams	Math Dept. Chair (Teacher Leader) All Math Teachers Math Instructional Aides Math Focused Special Education Teachers Optional: Title III

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Glossary of Terms (Alpha Order, terms in blue below are linked for further reading)

Collaborative Inquiry Cycles: Cycles of inquiry engaged in by teacher teams (i.e. grade level or math departments) and typically include a planning stage, teaching/assessing stage, study/analysis phase, and an action phase based on the results of study/analysis phase. These cycles can be for the purpose of learning about and enacting new instructional activities and afterwards the focus might shift to continuous improvement to address a SMARTE goal/AIM Statement/Problem of Practice around these high-leverage math instructional activities. *A short presentation on the why, what, and how of collaborative inquiry and cycles are included with a walkthrough of one example of this cycle, a PDSA cycle, in the graphic linked to the term.*

Note: These cycles intentionally occur with the building and maintenance of systems and structures by school leadership/ILTs to organize time and space for them to occur regularly throughout the school year.

Deliberate practice: Practice that is intentional and mirrors the actual performance of that task. In teaching it can be a grade level/department rehearsal of a high-leverage math instructional activity such as a choral count or number talk. *See the link to the term for a short 10 minute TED Talk on the term.*

Effective Math Teaching Practices: A set of eight mathematics teaching practices (skillsets for math teaching) from the National Council of Mathematics' (NCTM) book *Principles to Actions* and their *Taking Action* book series which support teachers with engaging students with the [Common Core Math Practices](#) and the National Research Council's math strands of proficiency.

Equity-Based Math Teaching Practices: A set of five mathematics teaching practices (equity-focused skillsets for math teaching) from the book *The Impact of Identity in K-8 Mathematics* (NCTM, 2013) and the *Taking Action* book series that support teachers with building positive, productive mathematics identities for their students in the mathematics classroom.

Formative Assessment Process: The Formative Assessment Process is a deliberate process used by teachers and students during instruction that provides actionable feedback that is used to adjust ongoing teaching and learning strategies to improve students' attainment of curricular learning targets/goals.

High-Leverage Math Instructional Activities: A mathematics activity that has a beginning, middle, and end and is a vehicle/container for teachers to enact effective and equity-based mathematics teaching practices (see above). These activities are student-centered because they provide the teacher with opportunities to be responsive to students as mathematicians (student thinking) and as people (their identities) and because the burden for making sense of mathematics concepts and procedures through problem solving is on the student(s) and not the teacher, as opposed to activities in a traditional direct instruction mathematics classroom using traditional textbook materials. These activities also serve as the container for rigorous and relevant mathematics tasks and provide the opportunities for teachers to authentically engage students with the [Common Core Math Practices](#). They are considered high-leverage exactly because they engage teachers in using *many* of the effective and equity-based mathematics teaching practices and [Common Core Instructional Shifts](#) and as a result students

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in the mathematics classrooms with standards-based rigorous and relevant mathematics tasks and *many* of the [Common Core Math Practices](#). *See the linked term for examples of these activities and the mapping of the [effective and equity-based math teaching practices](#) and [Common Core Math Practices](#) to specific [high-leverage math instructional activities](#), many of which are common in the CGI classroom and in classrooms using student-centered mathematics curriculum like Illustrative Mathematics.*

Implementation Support: Professional learning structures that support teachers with implementing a high-leverage mathematics instructional activity (i.e. a number talk or problem-based lesson) at the school site with a teacher team/group of teachers (i.e. grade level or math department) after an initial introduction/new learning on the activity. Examples of professional learning structures at the teacher teacher/group level include lesson study cycles, math learning labs, rehearsals, doing math/engaging in the discipline, book studies, examining student work, analyzing classroom video, and coaching cycles. These particular learning structures are all identified as having all five characteristics of high-quality professional learning. *They can be found in the linked article in the table (Figure 2) on page 416.*

Mathematics: “Mathematics is a way of thinking that involves studying patterns, making conjectures, looking for underlying structure and regularity, identifying and describing relationships, and developing mathematical arguments to show when and why these relationships hold.” The following definition, provided by Susan Jo Russell, Deborah Schifter, and Virginia Bastable in their *Connecting Arithmetic to Algebra* (Portsmouth, NH: Heinemann, 2011), describes the scope of mathematical thinking that we seek for all students.

Mathematician: A [mathematician](#) can be anyone from a middle school algebra teacher to a computer programmer. The [Standards for Mathematical Practice](#) which describes varieties of expertise that mathematics educators at all levels should seek to develop in their students is an attempt to develop mathematicians. Students should be engaged in problem solving, reasoning and proof, communication, representation, and connections as well as adaptive reasoning, strategic competence, conceptual understanding, procedural fluency, and productive disposition to be developed as mathematicians. Therefore, a mathematician is someone who uses an extensive knowledge of mathematics in their work, typically to solve mathematical problems. Some mathematicians primarily conduct research to explore and develop theories, while others are applied mathematicians who use theories and techniques to solve everyday problems. Mathematicians use formulas and models to support or refute theories. Data is also an important aspect in the field, as mathematicians analyze and interpret data for practical purposes, such as business, engineering or science decisions and problems.

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APPENDIX A: Working Theory of Action - Details

If adults at all layers in LAUSD

- Believe in the potential and capacity of all students;
- Believe in our vision for effective and equity-based mathematics teaching and learning;
- Understand the type of instruction that enables our vision;
- Understand that effective adult learning at all levels is necessary to enable that vision;
- And are equipped to challenge and dispel unproductive beliefs about mathematics teaching and learning;

And if teachers:

1. Understand and articulate a vision for high quality mathematics teaching and learning to all stakeholders;
2. Consistently use high leverage math activities in enacting [effective and equity based math teaching practices](#) and standards-aligned lessons; engage in collaborative inquiry cycles to investigate and inform instructional decisions based on student data, with a goal of continuous improvement; and have the time and support they need to persistently enact new learning through deliberate practice and reflection;
3. Understand the structure and purpose of the instructional materials and high-leverage math instructional activities and consistently examine the result of math teaching by eliciting and responding to student thinking as part of a [formative assessment process](#), including modifying instruction and providing feedback to students;

And if school leaders:

1. Clearly and regularly communicate a vision for high quality mathematics teaching and learning;
2. Implement and maintain systems, structures, and safe spaces for teachers to engage in new learning, deliberate practice, and reflection; prioritize time to regularly observe instruction and provide developmental and mathematics content/curriculum specific feedback; and provide ongoing job-embedded, mathematics professional learning and [implementation support](#) to teachers on implementing high-leverage math instructional activities, with an emphasis on enacting [effective and equity-based math teaching practices](#);
3. Develop teacher leaders to facilitate high quality and effective collaborative inquiry cycles using student work and progress monitoring data; recruit highly qualified teachers and make instructional programming decisions guided by students' needs and observations;

And if COS Leaders:

1. Clearly and regularly communicates a vision for high quality mathematics teaching and learning that aligns with and reinforces the Local District strategic plan for implementing this vision and which includes a feedback loop from school leaders and teachers about the effectiveness of the Local District strategic plan;

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2. Provide math professional learning and [implementation support](#) to school leaders, coaches, and teachers on implementing high-leverage math instructional activities, use observation tools and data to support the enactment of [effective and equity-based math teaching practices](#) at a high level; and support school leaders and ILTs in designing, implementing, and maintaining collaborative inquiry systems and structures;
3. Work with school leaders to prioritize their resources and use progress monitoring and observation data to continually improve their instructional program;

And if the Local District Leaders:

1. Clearly and regularly communicates a vision for high quality mathematics teaching and learning with a Local District strategic plan that offers specific attention to the support structures that are available across the LD to support school leaders, coaches, and teachers and which includes a feedback loop from CoSs to build capacity and drive coherence;
2. Provide math professional learning and [implementation support](#) to school leaders, coaches, and teachers on implementing high-leverage math instructional activities with aligned observation tools to measure the use of [effective and equity-based math teaching practices](#); and support school leaders and ILTs in designing, implementing, and maintaining collaborative inquiry systems and structures;
3. Use evidence based practices and progress monitoring data to maximize and allocate resources that support strong implementation of the vision, provide time for educator collaboration, and teacher leadership;

And if the Division of Instruction:

1. Clearly and regularly communicates a vision for high quality mathematics teaching and learning;
2. Supports Local Districts in recognizing and communicating a common instructional focus around [effective and equity-based math teaching practices](#) and in providing math professional learning and [implementation support](#) to school leaders, coaches, and teachers;
3. Encourages, supports, and incentivizes the use of high-quality instructional materials; sets and monitors progress towards clear milestones for effective implementation; and shares useful and actionable progress monitoring data to allocate resources;

And if parents/families:

1. Understand the vision for high quality mathematics teaching and learning;
2. Experience high leverage math activities as a learner at schools in math workshops and math family nights in order to support sense making at home for their children and understand the structure and purpose of the instructional materials and high-leverage math activities used in their child's classroom;
3. Are empowered with regularly provided data on their child's progress and understand where to obtain resources to support them in learning rigorous mathematics at home

Then teachers will live out [productive-beliefs](#) about mathematics teaching and learning through daily instruction by enacting [effective and equity-based math teaching practices](#); and then, students will improve their math achievement, have positive, productive math identities, and reach our vision because they have consistent access to strong and empowering instruction.