**CALIFORNIA
CURRICULUM
COLLABORATIVE**

Implementing Middle School Math Instructional Materials: Lessons from California Case Studies

NOVEMBER 2023

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Background

To improve math instruction, California has taken several steps over the last thirteen years, beginning with the adoption of the Common Core State Standards in 2010 and later the Mathematics Framework in 2013 and 2023, to support and incorporate those standards into instruction. However, 2023 Smarter Balanced test data shows that only 35% of California K-12 students met or exceeded mathematics standards.[1] Research has shown that an important piece of the puzzle in improving student outcomes is high-quality instructional materials.[2] While districts continue to make greater shifts toward adopting high-quality instructional materials,[3] a significant question remains: What does it take to implement these materials successfully, so that they have their intended impact?

While researchers and experts have rigorously investigated and reviewed instructional materials over the last decade, not enough attention has focused on the factors that affect their implementation. Bellwether's recent "Rounding Up" report concluded similarly about the curriculum effectiveness field: they explain that practitioners "need to know which aspects of the program are relevant to their students and are viable to implement in their contexts."[4] This reflection is significant for our field of work, as we work to dramatically accelerate math results. The authors go on to share that "understanding which curriculum is best for a specific school district can be challenging, as there are multiple factors to consider when choosing a program." This report aims to shed more light on these factors that can influence implementation.

In their recent report "K-8 Math Curriculum Landscape: Spotlight California," the Center for Education Market Dynamics (CEMD) described the evolving shift in the math instructional materials landscape in California since the last state adoption list came out in 2014.[5] Based on their research sample of districts in the 2022-23 school year, which include 58% of total public school students in the state, 76% of districts still have products from the 2014 list in place and 40% of districts have a current selection of off-list curricula for middle school math.[6] Our report, which includes a case study on a set of materials from the 2014 adoption list and three case studies with off-list instructional materials, provides a small snapshot into the multitude of deeper stories behind this data and the factors that have influenced whether the materials have been a good fit for their local education agency (LEA) in implementation.

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[1] EdSource. (2023). The State of California Smarter Balanced results. https://caaspp.edsource.org/sbac/statewide

[2] Chingos, M., & Russ Whitehurst, G. (2012). Choosing Blindly: Instructional Materials, Teacher Effectiveness, and the Common Core. Brown Center on Education Policy at Brookings.

[3] The Center for Education Market Dynamics. (Summer 2023). K-8 Math Curriculum Quality: The State of District-Led Selection. https://www.cemd.org/wp-content/uploads/2023/08/CEMD-K-8-Math-Report_Quality_2023.pdf

[4] Gold, T., Carroll, K., Newby, L.D.T., and Steel King, M. (March 2023). "Rounding Up: An Analysis of Math Curriculum Effectiveness Studies." Bellwether.

[5] 2014 Mathematics Adoption. California Department of Education.

[6] The Center for Education Market Dynamics. (Fall 2023). K-8 Math Curriculum Landscape: Spotlight California. https://cemdstg.wpengine.com/wp-content/uploads/2023/11/CEMD_K-8-Math-CurriculumLandscape_CA_Fall2023.pdf

Project Goals

UnboundEd, on behalf of CalCurriculum,[7] set out to study the enabling conditions for successful math instructional materials implementation and the degree to which select programs have been feasible to implement across a variety of LEA profiles through a set of case studies. The goal of these case studies, which examine the implementation of instructional materials within each system's context, is to provide a more in-depth snapshot into implementation experiences that other districts and charters can learn from in order to guide their own adoption and implementation planning.

These case studies describe the implementation experiences of four districts and charter networks across the state and demonstrate that the feasibility of implementing instructional materials is highly contextual. Successful implementations depend on many factors, including the extent to which the LEA deeply understood the needs of their key stakeholders, how well the materials fit with the context, the usability of the materials for staff and students, the extent to which the LEA has had the capacity to implement successfully, and the available supports for initial and ongoing implementation.

What we have learned from educators and leaders across the state has been powerful. In light of the release of the 2023 California Mathematics Framework,[8] many LEAs may be interested in adopting instructional materials that emphasize inquiry-based learning. These case studies identified important advice to keep in mind when planning to adopt and implement a set of materials that aim to shift educators' pedagogical practices, including the following:

- Provide sufficient and well-structured training around the mindset shift required to implement the materials. To maximize the usability of the materials, give staff the opportunity to see the routines modeled and engage in planning and lesson study together.

- Think through all of the parts of the system that affect implementation: strong initial and ongoing training, oversight with observations and feedback, and sufficient time in student schedules and for teachers in Professional Learning Communities (PLCs).

- Invest in publisher-led training from the beginning to set teachers and leaders up for success with how to envision and implement different parts of the lesson and how to navigate and leverage the various supports available.

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[7] CalCurriculum is a collaboration between UnboundEd and EdReports, but UnboundEd led the creation or publication of the case studies.

[8] California Department of Education. 2023 Mathematics Framework.

Looking ahead to future adoption and implementation work, the takeaways are twofold: It is important to ensure that LEAs are adopting high-quality instructional materials[9] and that there are plans and structures put in place to launch and support ongoing implementation of the materials.

We hope these case studies further inform and strengthen districts' and charter systems' instructional materials adoption and implementation plans moving forward, in order to better support California educators and their students.

Investigative Framework

The Hexagon Discussion and Analysis Tool, developed by the National Implementation Research Network (NIRN),[10] served as the primary investigative framework for these case studies. The goal of this tool is to help organizations evaluate the fit and feasibility of implementing programs or practices in a given context and is designed around six key indicators related to implementation. The original tool has been adapted for this project with a specific focus on instructional materials adoption and implementation. You can find the full set of adapted discussion questions and ratings descriptions in the Appendix of this report, and more about our adaptation process in the Methodology section.

System indicators ask teams to consider the extent to which their district or charter system deeply understands their **Needs**; how the instructional materials **Fit** with their system; and the **Capacity** of their system to implement the materials successfully.

NEED
SUPPORTS
EVIDENCE
CAPACITY
FIT
USABILITY

Instructional materials indicators assess the instructional materials under consideration along the following domains: **Evidence**, **Usability**, and **Supports**.

System and instructional materials indicators alternate in the discussion guide and case study reports. As is outlined with discussing both system indicators and instructional materials

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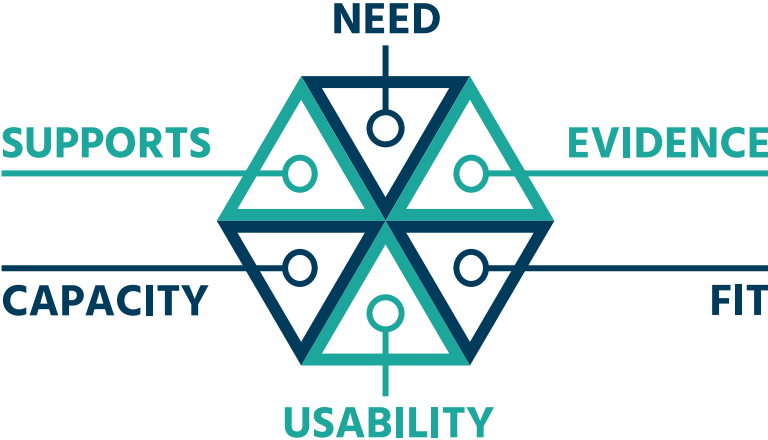
[9] Boser, U., Chingos, M., & Straus, C. (2015). The hidden value of curriculum reform: Do states and districts receive the most bang for their curriculum buck? Center for American Progress. Retrieved from https://cdn.americanprogress.org/ wp-content/uploads/2015/10/06111518/CurriculumMatters-report.pdf

[10] Adapted from: Metz, A. & Louison, L. (2019) The Hexagon Tool: Exploring Context. Chapel Hill, NC: National Implementation Research Network, Frank Porter Graham Child Development Institute, University of North Carolina at Chapel Hill. Based on Kiser, Zabel, Zachik, & Smith (2007) and Blase, Kiser & Van Dyke (2013). https://implementation.fpg.unc.edu/resource/the-hexagon-an-exploration-tool/

indicators, this framework is not just about assessing a set of instructional materials in isolation, but about contextualizing the instructional materials within the adoption and implementation processes of the district or charter system.

This tool, and the adapted investigative framework, are designed to be used by a team to facilitate discussion and ensure diverse perspectives are represented in a discussion of the six contextual implementation indicators.

Methodology

This report aims to answer the question: **How feasible have California's most popular middle school math instructional materials been to implement across a variety of district and charter profiles?** We sought to study the conditions for successful instructional materials implementation by developing an investigative framework to use with teams from districts and charters across California and share these learnings with other educators looking to adopt and implement instructional materials.

After conducting extensive secondary research, we found the Hexagon Discussion and Analysis Tool[11] (the "Hexagon Tool") to serve as the primary investigative framework for these case studies. The components of the tool aligned well with assessing the many components of implementation feasibility: how well the materials **fit** with the LEA context; how **usable** the materials have been; to what extent the LEA has had the **capacity** to implement successfully; and what **supports** have been available for initial and ongoing implementation. While the framework and design of the tool aligned well with the goals for our project, since the original Hexagon Tool is field-agnostic, we knew we would need to engage in a thoughtful and deliberative process to adapt the tool to have a specific focus on the adoption and implementation of instructional materials. Throughout our process, we worked closely with NIRN on this adaptation, including undergoing a full facilitation training on the original Hexagon Tool.

We began by interviewing several internal adoption and implementation experts at UnboundEd and CORE Learning[12] about their own adoption and implementation experiences, including criteria that they observed to affect their most successful or challenging experiences. After the interviews, we then coded the data, identified recurring themes across interviews, and developed key topics that were then used to complete the first version of our adapted Hexagon Tool.

We shared this initial adapted tool with our project Advisory Council, composed of nine adoption

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[11] Adapted from: Metz, A. & Louison, L. (2019) The Hexagon Tool: Exploring Context. Chapel Hill, NC: National Implementation Research Network, Frank Porter Graham Child Development Institute, University of North Carolina at Chapel Hill. Based on Kiser, Zabel, Zachik, & Smith (2007) and Blase, Kiser & Van Dyke (2013). https://implementation.fpg.unc.edu/resource/the-hexagon-an-exploration-tool/

[12] UnboundEd. (Sept. 2022). "Pivot Learning and CORE Learning to Merge with UnboundEd." https://www.unbounded.org/press-releases/pivot-core-merge-with-unbounded

and implementation experts, and received helpful feedback on the tool structure, guidance, questions, and ratings descriptions. Following incorporation of this feedback, we shared an updated version of our adapted tool with our project Testing Group, made up of eleven leaders from the field, including current teachers, coaches, and district and charter leaders from across California, as well as consultants who lead math adoption and implementation work across sites. We engaged in individual user testing with each of these Testing Group participants, walking through an adoption scenario based on their own experiences and then gathering feedback on the tool structure, guidance, questions, and ratings descriptions.

After gathering this feedback, we adapted the tool to take a retrospective lens that asked about past and current experiences implementing, rather than considering future implementation scenarios. We then tested the updated tool with our Testing Group by walking through two implementation scenarios with each participant based on their own experiences to gather similar feedback as the first round of testing.

Based on the feedback from our Testing Group, we created a final version of our retrospective Hexagon Tool, which we then shared back with our Advisory Council and a key group of internal stakeholders for final review and feedback. The retrospective Hexagon Tool, which is included in the [Appendix,](#) is the result of these many stages of stakeholder interviews and user testing.

Once we finalized our investigative framework, we began a recruitment process, which was open to all LEAs across California, to interview a range of LEA sizes and types, as well as a variety of instructional materials, and then moved forward with our applied case study research. Each participating district or charter included a team of three to five representatives, including at least one middle school mathematics teacher, at least one school leader overseeing middle school mathematics, and at least one district leader overseeing middle school mathematics implementation. In total, there were four participating LEA teams reviewing four sets of instructional materials. The case studies are solely a representation of each site team's experiences. Neither the UnboundEd team nor any others involved in the project, including EdReports, influenced which instructional materials were reviewed or the content of the reviews as part of these case studies.

Using the Hexagon Tool as our interview protocol, we conducted semi-structured focus group discussions with each site team. We used a focus group approach to bring together multiple roles and perspectives to build shared meaning and consensus about the broader LEA experience. With facilitation from the UnboundEd team, focus group participants discussed the interview questions for each indicator and then engaged in a consensus-building process to select a rating score based on the team's discussions. The scores represented in this report are a representation of the site team's experiences, discussions, and consensus and are not representative of the facilitator or any other researcher's opinion or observations.

After we collected focus group feedback, we then coded the transcripts, identified recurring themes within indicator sections, and developed the key rationale and advice summaries for each indicator section. The key rationale and advice for each indicator are a direct representation of

the discussions by site teams and were reviewed and approved by site leaders as an accurate portrayal of their site's experiences prior to publication.

We define a "case" as the implementation of a specific set of instructional materials at a specific LEA. We present four case studies below, which include ratings for each indicator, key rationale for arriving at the overall rating score, and advice for how to ease other LEAs' instructional materials adoption and implementation processes.

The categories for LEA size were adapted from a 2011 report by the California Legislative Analyst's Office, based on average daily attendance. Size range categories referenced in our report are:

Small	6-1,000 students
Mid-Size	1,001-10,000 students
Large	10,001-40,000 students
Very Large	40,001+ students

Case Studies

Case Study 1: Houghton Mifflin Harcourt's Go Math! California Edition (2015) at a Very Large District
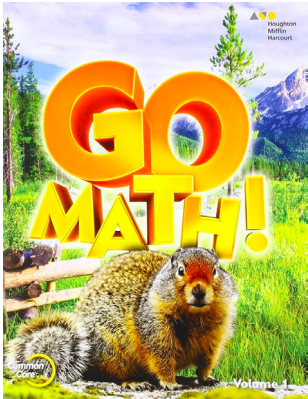
Local Education Agency (LEA) Facts

Grade Span: TK-12
Size: Very Large

Implementation Facts

Grades Using These Materials: 6-8
Years Implementing These Materials: 8

Ratings at a Glance (1=Lowest Rating, 5=Highest Rating. See Appendix for details.)

Need	1	**Usability**	2
Evidence & Impact	2	**Capacity**	4
Fit	1	**Supports**	2

*The first year of implementation for these materials was the 2016–17 school year. Focus group participants included staff who have been with the district since the prior adoption and had direct experience with the prior adoption and implementation. The district is now preparing for its next adoption cycle.

System Indicator
NEED

Rating 1

Rationale: This adoption took place in 2015-16, after California adopted the Common Core State Standards (CCSS) in 2010, so the focus of the adoption was finding materials to align to the new standards. While district and school leaders stated that they felt their standardized test scores were not satisfactory at the time, student performance data was not collected or analyzed to specifically inform the adoption, largely because of the focus on the CCSS shifts. The California Standardized Testing and Reporting (STAR) tests that had been previously used were not

considered relevant after the shift to the CCSS, and the adoption happened prior to the Smarter Balanced Assessments (SBAC) being given in order to be taken into consideration. No other student data was considered, and the test scores were not disaggregated by race, ethnicity, or other subgroups. The district did collect teacher surveys to assess teacher needs around what they were looking for in a new curriculum and found that teachers were very split in what they were looking for. No other stakeholder groups were assessed to analyze need prior to adoption.

Advice for other LEAs: Start with a deep dive into student performance data, as well as stakeholder needs assessments for all involved groups, including students, to understand the needs of your stakeholder populations and to analyze and identify priorities for your adoption process.

Instructional Materials Indicator
EVIDENCE AND IMPACT

Rating **2**

Rationale: At the time of the adoption, EdReports, a national nonprofit that provides independent reviews of instructional materials, had recently launched, and its reviews were not yet known by the district. The district learned later on that *Go Math!* (2015 National Edition) received a "Partially Meets Expectations" rating for alignment to college- and career-ready standards from EdReports. The process of winnowing their choices and evaluating the materials began with a team of teacher representatives from across the district attending a publisher fair and checking off whether various materials had particular courses available or if they generally included problem solving. Based on this initial review, they invited a narrowed down list of publishers to present a sales pitch to the team, after which they had teachers complete a more detailed rubric to check off whether more examples of the Common Core–related priorities were present, such as problem solving, reasoning, or error analysis. They ultimately decided to pilot *Go Math!* because of a report they reviewed that evaluated the available curricula at the time and stated it was more rigorous than the other final materials they had in consideration.

There has been minimal evidence of effectiveness of these materials based on implementation and student achievement data to date in the district. Shortly after adopting, it became clear to teachers that *Go Math!* heavily emphasized procedural understanding and that the materials were not fully in alignment with the CCSS Standards for Mathematical Practice,[14] such as how to shift instruction to student sense-making and developing conceptual understanding. This was both an

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[14] Standards for Mathematical Practice. California Department of Education.

important part of the Common Core shifts in mathematics[15] and a significant component of the SBAC. For this reason, teachers began looking for supplemental materials to support the shifts they needed to make, and implementation varied greatly. School sites within the district that did report using the materials with integrity alongside strong teacher collaboration and planning practices reported mostly stagnant student achievement data.

> **Advice for other LEAs:** Ensure that the adoption team reads the EdReports reviews of evidence of standards alignment, beyond just looking at an overall score. Be thoughtful about the "bells and whistles" that are often pitched by publishers, and focus on your local priorities and what students need first.

System Indicator
FIT

Rating **1**

Rationale: The district did not have a solidified vision of math instruction at the time of adoption, so there was no consideration at that time as to whether it aligned with an instructional vision. The priority at the time was to find materials aligned to the CCSS; however, participants shared that there is now agreement across the district that these materials did not fully align with those shifts.

Because staff felt like the pedagogical approach was quite similar to prior teaching practices, they did not feel these materials were difficult to implement. Teacher buy-in was a significant challenge from the outset, as the final teacher vote to make their adoption decision was split 51% to 49%, with only a very narrow margin in favor of *Go Math!* and nearly half largely dissatisfied with the materials.

Within recent years, as one focus group participant put it, "our entire district has undergone a metamorphosis with the way we're teaching" in order to support the instructional shifts required to implement the CCSS Standards for Mathematical practice. A math instructional vision was initially developed in 2018 and more fully adopted in 2021, and these materials do not align with the current vision. This district-wide shift has also included putting in place strong Professional Learning Community (PLC) structures for teachers and bringing in an outside partner to support teacher practices in the development of student conceptual understanding. Staff noted that it has been difficult to fully implement these practices because their materials don't align with the practices that the professional development initiatives are emphasizing.

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[15] College- and Career-Ready Shifts in Mathematics. Achieve the Core. Student Achievement Partners.

Instructional Materials Indicator
USABILITY

Rating **2**

Rationale: Staff described the pedagogical approach of the materials to be quite straightforward and prescriptive, making them easy enough for teachers of varying experience levels to understand how to utilize in a classroom. However, teachers shared that they felt that, overall, these materials are not user-friendly. At a basic materials management level, they described the challenge of not having any space for students to write in the textbooks or to show their thinking and work. Relatedly, they shared that it was very difficult to modify or adapt the materials, when necessary, to support priority student groups in accessing the instruction.

While the materials were vertically aligned with the prior elementary instructional materials, this vertical alignment has changed with time. Several years ago, prior to shifts in district-wide middle school professional development, the district began leading professional development on cognitively guided instruction for elementary staff, and this earlier shift in elementary teaching practices led to vertical misalignment with the *Go Math!* materials. Staff described challenges with this misalignment as students transitioned from elementary to middle school and shifted from conceptual to procedural instruction, and how that negatively impacted math identities and investment for many students. Teachers also shared that they felt the order of content and standards within individual courses was not thoughtfully aligned and that there was no spiral review embedded in the materials.

Rationale: The district has strong capacity overall. While there was more limited administrative capacity with the original implementation, district capacity—in particular, staff and administrative capacity—have evolved greatly since the time of adoption.

- **Staff Capacity:** Focus group participants felt that staff had sufficient capacity to implement the Go Math! materials. In order to align with the more recent math instructional vision and district goals, the district wanted to build staff capacity to fully implement all of the Common Core shifts in mathematics. To do this, the district has implemented PLCs in recent years, which staff report to be extremely valuable, and have also brought in an outside partner to build staff capacity in the importance of teaching conceptual understanding before procedural fluency.

- **Financial Capacity:** The district shared that they had sufficient financial capacity to implement these materials, including purchasing all required materials over an eight-year implementation period.

- **Administrative Capacity:** District and school leadership did not initially prioritize the implementation after adoption, or any ongoing training or coaching related to these materials. It was several years before leadership understood the extent to which teachers were seeking to supplement the materials and build their own capacity around teaching the new CCSS. After aligning on a new instructional vision, building PLC structures, and offering related professional learning opportunities, these shifts have become much more of a priority for district and school leadership. District and school leaders have started engaging in school site walk-throughs and aligning across K-12 on their vision for math instruction, which includes the National Council of Teachers of Mathematics' Effective Teaching Practices.

- **Systems Capacity:** Systems were well structured to support implementation of the materials, including sufficient instructional minutes and planning time for teachers to collaborate, as well as all necessary technology to implement the materials.

> **Advice for other LEAs:** Consider not just where staff and administrator capacity is currently, but where they can get to with strong professional development and structures to support implementation. Ongoing professional development is critical for all staff who have an impact on classroom instructional practices, including school site leaders and district leaders.

Rationale: There was a one-time publisher training right at the start of implementation, which staff reported was not helpful in orienting teachers in how to use and implement the materials. Several years later, the publisher was brought back for a single training at the district and talked about the shifts in mathematics that were needed to teach the standards. A district leader who attended the meeting noted that teachers were sharing the challenges of teaching with the materials given that they did not align to the pedagogy that the publisher was then promoting related to the CCSS shifts, and they had not been given support in making those shifts. Separately from the materials, the district is now in the third year of working with an outside partner to support teacher capacity building in making those pedagogical shifts and and ensuring that rigor (conceptual understanding, procedural fluency, and application) is balanced in instruction, which staff report to have been very useful.

There were some built-in supports to guide teacher instruction in the materials and online, but teachers shared that they were difficult to find or navigate. Similarly, they shared that the materials did include some family letters about what they were teaching in different chapters, but they were difficult to locate. The district has a large English learner[15] student population at some school sites, and staff reported that they did not find the materials to be particularly supportive of this student population. While they did receive the materials on time for implementation, they reported that many staff did not receive training on or know how to access or use the online resources.

> **Advice for other LEAs:** It is critical, regardless of what materials you select, to set up strong professional development for educators and administrators to support the instructional practices and guidance for working with English learner students and students with disabilities.

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[15] As defined in California Department of Education's (CDE) ["Improving Education for Multilingual and English Learner Students,"](#) the term "English learner" (EL) refers to students who are formally (by federal civil rights law) identified as having a home language other than English and levels of English language proficiency that indicate they need programs and services that will support them in becoming English proficient. They are a federally protected class of students with the right to specialized services to become fully proficient in English and achieve grade-level standards. We reflect the terminology used by focus group participants in this case study summary.

Case Study 2: Open Up Resources' 6-8 Math (2017) and Kendall Hunt's Illustrative Mathematics (2019)* at a Mid-Size Charter Management Organization
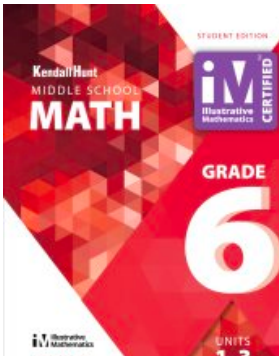
Local Education Agency (LEA) Facts

Grade Levels: TK-12
Size: Mid-Size
LEA Type: Charter

Implementation Facts

Grades Using: 6-8
Years Implementing: 7**

Ratings at a Glance (1=Lowest Rating, 5=Highest Rating. See Appendix for details.)

Need	3	**Usability**	4
Evidence & Impact	3	**Capacity**	3.25[16]
Fit	3	**Supports**	4

This charter management organization (CMO) has used different publisher versions of Illustrative Mathematics in their implementation. They began with, and some teachers are still using, Open Up Resources' 6-8 Math (2017). Some teachers are now transitioning to use Kendall Hunt's Illustrative Mathematics 6-8 Math (2019). One school site is using the version of Illustrative Mathematics that is integrated directly within the Summit Learning Platform.

**Some teachers in the CMO began using these materials in 2017-18, and then use increased across school sites. Complete alignment across all teachers did not happen until after the return to full in-person instruction in 2021-22; however, there was no formal CMO-coordinated training on the materials until the end of the 2022-23 school year, so while many staff have been utilizing these*

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[16] There was not consensus among the focus group participants on a score for this category. There was variation across positions and sites, both in the score and in the types of capacity that they observed were missing. This number reflects the average (mean) of participant scores.

materials for several years, the CMO views the 2023–24 school year as their first official year of organization-wide implementation.

System Indicator
NEED

Rating **1**

Rationale: The CMO did not engage in a formal adoption process prior to the time that teachers began using these materials. CMO and school leaders stated that they felt their standardized test scores were not satisfactory at the time of considering the use of new materials, and their priority as an organization was to utilize a standards-aligned, high-quality curriculum as a priority lever for increasing student performance data. At that time, the CMO was administering common interim assessments through the Illuminate platform, but the general guidance was that teachers and individual schools could have autonomy of choice around which resources they used in order to teach to the Common Core State Standards (CCSS). There was recognition across the organization that there was a need for a different type of approach to math instruction than their traditional direct instruction pedagogical approach. However, the practice of teacher autonomy in choosing what materials they wanted to use in order to meet those goals continued until individual schools began using the Summit Learning platform in 2018-19, and then there were more efforts to more formally align on the use of the *Illustrative Mathematics* materials in 2019-20 in order to improve collaboration around materials and practices across schools, which was unfortunately interrupted by the pandemic.

While the CMO engaged in regular disaggregated data analysis practices to analyze state testing data, student performance tasks, and other Depth of Knowledge (DoK) math tests, the data analysis they engaged in prior to more comprehensive adoption across schools was more focused on how the platform would support students, rather than on how the materials within that platform would address student needs. As this was a gradual adoption first by individual teachers and then by school sites, they did not lead stakeholder needs assessments organization-wide for teachers, students, or families prior to adoption specifically related to materials. After the return to full in-person instruction after COVID-19-related school closures, CMO leaders worked to align the remaining teachers across school sites in adopting the use of these materials in order to achieve organization-wide alignment. The CMO also engaged in needs assessments with remaining teachers and gathered feedback from those who were already using the materials.

> **Advice for other LEAs:** Engaging in intentional data analysis and stakeholder needs assessments prior to adoption can help inform the vision and goals of your adoption process, as well as guide subsequent implementation decisions.

Rationale: As mentioned previously, while there was teacher autonomy at the beginning of the gradual adoption, the priority as an organization was to utilize a standards-aligned, high-quality curriculum as a priority lever for increasing student performance data. Both the original *Open Up Resources' 6–8 Math (2017)* and *Kendall Hunt's Illustrative Mathematics 6–8 Math (2019)* received a "Meets Expectations" from [EdReports](#) for alignment to college- and career-ready standards. Both English learner students[17] and students with learning differences have been priority student subgroups for the CMO, and while there was not a specific rubric used to gather evidence regarding the ability of these materials to support these subgroups prior to adopting, participants shared that there are structures and supports within the materials for teachers to guide instruction for these student groups.

There has been emerging evidence of effectiveness based on implementation and student achievement data to date. While there have not yet been significant increases in Smarter Balanced Assessment Consortium (SBAC) data with access to and use of the materials over the past few years, the CMO is optimistic about emerging points of data now that they are putting in place more standardized training, observation structures, and supports over the last year. They engaged in whole-organization, publisher-led training at the end of the 2022-23 school year for the first time and this year have aligned on the vision for curriculum implementation in classrooms in walk-throughs between CMO leaders and school leaders using the *Illustrative Mathematics Implementation Reflection Tool.* They have also clarified and aligned in how they are looking at exit ticket information, scoring end-of-unit assessments, and are adhering to common end-of-unit timeframes, which allows them to jointly score and analyze student work. These practices have led to promising end-of-unit assessment data and standards master assessment scores, and while it is not consistent yet across all teachers or schools, they are optimistic about this emerging evidence of effectiveness for teachers implementing the materials in the way they are intended, based on classroom walk-throughs.

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[17] As defined in California Department of Education's (CDE) ["Improving Education for Multilingual and English Learner Students,"](#) the term "English learner" (EL) refers to students who are formally (by federal civil rights law) identified as having a home language other than English and levels of English language proficiency that indicate they need programs and services that will support them in becoming English proficient. They are a federally protected class of students with the right to specialized services to become fully proficient in English and achieve grade-level standards. We reflect the terminology used by focus group participants in this case study summary.

System Indicator
FIT

Rating **3**

Rationale: The materials, which emphasize a student inquiry–based approach, strongly align with the mathematics vision of instruction for the CMO, which focuses on teaching all students through an equitable and inquiry-based approach. Since use of the materials was initially by teacher choice, then by individual school sites through a gradual adoption process, buy-in also was not a barrier to implementing the materials. However, since this inquiry-based pedagogical approach was quite different from their prior, more traditional "I Do, We Do, You Do" direct instruction approach, it posed more of a challenge for some staff to learn to teach in this way. One of the biggest challenges that teachers and leaders observed in implementing these materials as they are intended to be taught was in the mindset shift required to facilitate students exploring and building deeper understanding in order to apply their learning.

A big challenge for this CMO in terms of fit was competing, concurrent initiatives. As mentioned earlier, more staff began using the materials once some schools adopted the Summit Learning platform. While the *Illustrative Mathematics* materials do integrate well with the Summit Learning platform, each initiative required a significant amount of training to learn to implement on their own, and at the time of its adoption, training around the Summit Learning platform was prioritized. In addition to the time needed to train staff on use of the platform, how to set up routines and procedures for the classroom, and how to teach students to access and utilize the platform, they also rolled out Summit Mentoring, which required more time, training, and systems to set up. Shortly after, the CMO also introduced a new social-emotional learning initiative, which took additional time, energy, and training. A few years after that, the CMO decided to use *iReady* diagnostic assessments, which became an organization-wide priority and the focus of professional learning, at the expense of focusing on curriculum implementation. While school and district leaders shared that the *iReady* diagnostic assessments and the *Illustrative Mathematics* materials have not been strongly aligned, they recently shifted to use of the iReady standards mastery assessments, which they feel has been better aligned with allowing students to apply what they're learning in the curriculum.

Instructional Materials Indicator
USABILITY

Rating **4**

Rationale: Staff shared that the materials are easier to navigate at a baseline level and that the materials are easy to make sense of and organize, even for new teachers. The materials have a very clear structure to each lesson. However, as one participant stated, "It's not difficult to [execute the lessons]. It's just really difficult to do it well." Staff noted that there are advanced teacher moves involved in implementing lessons effectively, such as "amplify a student who approaches the problem this way," and it can be easy to revert back to prior instructional approaches. As one experienced teacher shared, "What I would do in the past is I would give the activity, and then I'd be like 'They're not understanding it; I just need to explain it.' So then I'd explain to them how to do it. Maybe in the short run, they're successful, but they're not learning the concepts. They're not learning how to apply [them]. I was actually working against what I wanted, but I didn't have the training to understand that." Staff shared how helpful it was to receive training from the publisher during the last school year in order to understand the mindsets behind the materials and talk through how to implement different parts of the lesson.

Staff also shared that there are strong supports within the materials to modify or adapt in order to meet the needs of priority student groups; however, the key is learning to not over-scaffold in ways that take away from the materials being implemented with fidelity. They noted they had to learn to not step in to immediately help students when they get stuck and that letting students engage in this productive struggle was important for their long-term learning. As one participant shared, "The only way this curriculum is effective is if students are thinking and exploring and trying to make connections." They also noted the benefits of aligning in this approach and teacher and student mindset across grades. Their elementary schools are using materials that have a similar pedagogical approach.

Rationale: The perspectives on which capacity areas were strong and which were areas of growth differed both by role and across school sites. The CMO has been prioritizing strengthening a couple areas of capacity over the past year in particular.

- **Staff Capacity:** The materials require a mindset shift for many teachers, as well as experience in how to facilitate the learning and set up strong classroom environments that make students feel safe and supported in mathematical risk-taking. There is variation across the system in how this aligns with current staffing, as the CMO experiences a degree of teacher turnover each year. Because schools in the CMO are smaller and only have one grade-level math teacher per school, collaboration structures across schools are needed and is an area in which the organization is working to create more opportunities.

- **Financial Capacity:** *Illustrative Mathematics* materials are available from a variety of publishers, including several that can be accessed for free (including from Open Up Resources and Kendall Hunt), which has allowed schools to maintain the same core curriculum regardless of budgetary constraints. When the CMO sought to bring in publisher-led training the past school year, there were sufficient budgetary resources. There has also been financial capacity for purchasing digital learning platforms like Summit, physical workbooks, and related materials at most schools.

- **Administrative Capacity:** Prioritization of the curriculum implementation has had to compete over time with other organization-wide initiatives, as noted in the above Fit section. There are strong coaching structures that exist across the CMO, such that every teacher has someone on staff at their school who is meeting with them once a week and supporting them in their instruction. However, with the shift in coaching structures away from a district-level math expert coach to school-based coaches, this has also led to a math experience gap in some coaches who do not have expertise in the instructional materials. Building in training for all coaches and regular instructional walk-through practices between CMO leaders and school leaders is a priority area for this year ahead to support implementation.

- **Systems Capacity:** Staff shared that systems have generally been supportive of the implementation. There was a shift in school schedules from one-hour classes, which fit with lesson timing, to a block schedule, but a participant noted that the materials do have block schedule guidance and that this shift has been helpful in order to have more time to check

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[18] There was not consensus among the focus group participants on a score for this category. There was variation across positions and sites, both in the score and in the types of capacity that they observed were missing. This number reflects the average (mean) of participant scores.

in with students and get sufficient practice. The only complication of this schedule shift has been that Wednesdays are devoted to social-emotional and individualized learning days, so they have one less day a week of instructional time, and this has led to an impact on how much of each unit teachers are able to address.

Advice for other LEAs: To set up a strong implementation, it's important to start with building strong leader capacity in order to have an aligned approach in coaching and supporting teachers.

Instructional Materials Indicator
SUPPORTS

Rating **4**

Rationale: After several years of utilizing the materials, staff received a two-day, publisher-led training at the end of the 2022-23 school year. Staff shared that having an *Illustrative Mathematics* presenter come in to talk through the mindsets behind the materials, how to implement different parts of the lesson, and how to shift the ways staff viewed certain components of the materials, such as exit tickets, was extremely valuable. They also noted that they believed teachers need more training around how to execute lessons, what the big ideas are, and how to use the scaffolds effectively. As noted in the Usability section, staff shared that to implement these materials well, staff need to deeply understand what they're trying to get out of each lesson and activity before they teach, and training can help with this.

Staff shared that while there are many supports built in to to guide teacher practice, such as deep notes within the materials or unit story videos, it would be beneficial to have more training on how to navigate and leverage those resources for teachers, as well as more resources to support teachers in envisioning what each lesson should look like. The materials do have supports and routines built in to support English learners and students with Individualized Education Plans (IEPs), but similar to teacher supports, staff noted that spending more time to help teachers internalize the available resources could help with stronger utilization and implementation of those supports. Finally, the materials offer strong resources for partnering with families, including videos on each unit, letters to send home describing the approach, practice problems that can be done at home, and guidance around how to talk to their children about those problems, as well as a family portal with online copies of materials in Spanish.

Advice for other LEAs: Invest in publisher-led training from the launch of your materials to set teachers and leaders up for success with understanding the mindset shifts, how to envision and implement different parts of the lesson, and how to navigate and leverage the various supports available.

Case Study 3: Open Up Resources' 6-8 Math (2017) at a Small Charter Management Organization

Local Education Agency (LEA) Facts

Grade Levels: 6-8
Size: Small
LEA Type: Charter

Implementation Facts

Grades Using: 6-8
Years Implementing: 5*

Ratings at a Glance (1=Lowest Rating, 5=Highest Rating. See Appendix for details.)

Need	3	**Usability**	3
Evidence & Impact	4	**Capacity**	4
Fit	4	**Supports**	4

The charter management organization (CMO) adopted Open Up Resources' 6-8 Math and began implementing the materials during the 2018-19 school year. The CMO shifted to using the materials remotely between the spring of 2020 through the 2020-2021 school year and then returned to using the materials in person.

System Indicator
NEED

Rating **3**

Rationale: The CMO led an informal adoption process at the beginning of the 2018-19 school year that led to the adoption of Open Up Resources' *6-8 Math* partway through that year. At the time, CMO leaders set out to identify a new set of materials that would provide greater conceptual knowledge supports for teachers in order to more deeply understand the root of and how to address student misconceptions. CMO leadership wanted to find a set of comprehensive

instructional materials with vertical alignment for 6th to 8th grade that would be accessible to all teachers and believed that Open Up Resources was more approachable for a first-year teacher based on the built-in guidance within the materials. They also wanted to identify a set of materials that would set up their students for success on summative assessment measures, such as the state test, based on aligned question types and practice. Given the extremely wide range of remediation and acceleration needs based on mathematics data from the beginning of the school year, their priority for identifying a new set of comprehensive instructional materials was to focus on student exposure to grade-level material at a conceptual level, while building up their procedural skill sets through supplementary avenues.

Open Up Resources' *6-8 Math* is a free, open-source set of instructional materials, and since the CMO's budget was limited, this was an added benefit. Teachers tested out the materials for several weeks to assess student response and teacher comfort with the materials. The CMO received positive feedback, so leadership decided to move forward with fully adopting and implementing Open Up Resources' *6-8 Math* for the entire CMO.

Advice for other LEAs: Engage in an alignment check between the vocabulary and question types in your state achievement test and the instructional materials in consideration to ensure the materials will address student needs to prepare for success on summative assessment measures.

Instructional Materials Indicator
EVIDENCE AND IMPACT

Rating **4**

Rationale: The materials have received a "Meets Expectations" rating from EdReports for alignment to college- and career-ready standards. In their evidence analysis phase, CMO leaders also connected with other nearby districts and charters with similar demographics that were implementing the same materials and asked them about the student achievement results they were seeing. Based on the evidence of standards alignment, the recommendations and data they saw from other trusted leaders, and the stronger teacher conceptual knowledge supports, CMO leaders decided to move forward with the use of Open Up Resources.

The CMO has seen evidence of effectiveness for most staff and student groups based on implementation and student achievement data to date. The CMO expanded their student enrollment to all grades in the 2019-20 school year, but given COVID-19-related interruptions and school closures beginning in March of 2020, CMO leaders view the 2020-21 school year as the first year of "fully implementing" the materials with their larger student population. During this year,

they saw remarkable results in student growth data on the Northwest Evaluation Association (NWEA) Measures of Academic Progress (MAP) assessments, with growth above the 90th percentile. Reflecting upon this growth, a CMO leader shared that this data gave them confidence that the basics of the curriculum work when implemented to a higher degree of integrity. Another contributor to this data, they shared, was that during this year of online instruction, they had more time to set students up on individualized learning pathways for 20 to 30 minutes a day focusing on remedial skills, while still receiving grade-level instruction during core class time and for homework. The leader shared that for students who truly engaged in this work, they saw up to four years of growth in a single school year. Coming back to in-person instruction since the 2021-22 school year, they have continued to see strong growth data across student subgroups and are now focused on how to improve their absolute levels of achievement by supplementing the core instructional time with more time to practice procedural and remediation skills. For their English learner[19] student population, while overall growth has been positive, it has been slower paced than other student groups, which leaders shared they believed is due to a need for stronger explicit vocabulary instruction. Vocabulary supports do exist within the materials, and building in stronger routines around vocabulary is a focus area of improvement for their core instruction for the current school year.

Staff utilize strong data monitoring and analysis practices, including daily monitoring of student work and analysis of their diagnostic assessment data. Staff shared that the collective analysis of their NWEA MAP assessment data has been very beneficial to understand the alignment with Open Up Resources' lessons and how this informs any adjustments they want to make to class instruction. A school leader shared that they work closely with teachers to analyze student exit tickets on a regular basis and then action plan based on the gaps they are seeing, which they believe leads to strong growth. Teachers also shared that monitoring student homework, which they use as an additional opportunity for independent practice of Open Up Resources' practice problems, acts as another helpful indicator of student lesson mastery throughout the unit.

Advice for other LEAs: Set up strong data analysis routines between school leaders and teachers to collect and analyze student data, including daily response to student work and interim analysis of diagnostic assessment data.

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[19] As defined in California Department of Education's (CDE) "Improving Education for Multilingual and English Learner Students," the term "English learner" (EL) refers to students who are formally (by federal civil rights law) identified as having a home language other than English and levels of English language proficiency that indicate they need programs and services that will support them in becoming English proficient. They are a federally protected class of students with the right to specialized services to become fully proficient in English and achieve grade-level standards. We reflect the terminology used by focus group participants in this case study summary.

System Indicator
FIT

Rating **4**

Rationale: The materials align with the instructional vision for the CMO. A big focus of the organization is on leading engaging and culturally responsive instruction and being responsive to student needs, and they shared that they feel the materials have been a good fit because they allow for flexibility in adapting to their instructional model. For example, in their sixth-grade classes, they are utilizing an instructional model with rotating stations where they break up different components of the Open Up Resources lessons, utilizing resources from the publisher's Community Resources hub as well as creating their own supplementary Nearpod videos for students to access and engage with the lessons. While leaders noted that the pedagogical approach of the materials was a shift for any teacher coming in who had learned or been trained in a more procedurally focused way, they also shared that their priority was to give teachers the space to wrestle and grapple with the materials up front. Leaders shared that while buy-in was not automatic for all staff, this onboarding approach has led to strong buy-in and implementation of the materials.

The CMO has been leading several internally designed initiatives focused on student comprehension strategies and oral drills to support vocabulary development, and teachers and school leaders shared that these have worked well in conjunction with the materials. In terms of fit with their student population, staff shared that while the base materials are relatively culturally relevant, teachers and school leaders do take additional measures to adjust some question topics or supplement instruction with additional engagement strategies to ensure they are being culturally and linguistically responsive to their student population.

> **Advice for other LEAs:** Design a consistent plan for how to implement the materials on a daily basis, taking into consideration any necessary adjustments to fit with the system's instructional model.

Instructional Materials Indicator
USABILITY

Rating **3**

Rationale: Teacher participants shared that they feel the materials are easy to understand and the platform is easy to use, so, overall, the usability is strong. However, leaders also shared that they feel they are fortunate to currently have math teachers who have a natural aptitude for

conceptual understanding and an openness to learning the pedagogical approach and how to navigate the materials. As one CMO leader shared, "I think schools that are looking to implement [Open Up Resources] are going to need to just give teachers time to get used to how to read it. [...] It's not a plug-and-play automatic type of thing; as much as it pushes students on conceptual understanding, it is also going to push teachers on conceptual understanding." They noted that it does take a significant amount of time and investment to learn how to use the materials and navigate all components of a lesson with fidelity.

Staff shared that while the materials build an in-depth conceptual understanding for students, there is not always enough of a focus on building and gauging their procedural knowledge. One solution staff have found for this need is to increase the number of practice problems in each lesson to provide students with more practice opportunities. The other challenge they face with the materials is the balance of supporting intense remedial and acceleration needs for students. Especially in their student population where they see students "ranging from second grade through eleventh grade [mastery levels, based on diagnostic assessment results] in the same classroom," it can be difficult to figure out how to put in both the remedial and acceleration supports, while at the same time teaching to grade-level expectations. The CMO leader reflected that "I don't think it would be such a daunting task to make those two worlds live in harmony [with Open Up Resources] if we weren't also having to do such significant remediation." They shared that while the materials do reference prior standards that lessons are building on, when their teachers need to think back to as far as third- or fourth-grade standards for middle school instruction, the materials do not reference back as far as they need.

In terms of modifying or adapting the materials to meet the needs of specific student populations, staff shared that there is some guidance, but they have had to do additional work to meet the needs of their students. Staff noted that there is guidance around supports for English learner students in each lesson, and there are also translated versions of the practice problems and exit tickets in Spanish. For their students with Individualized Education Plans (IEPs), they noted that there are some suggested manipulatives and visual supports, but these are not always accessible for staff to utilize.

> **Advice for other LEAs:** When utilizing a conceptually-based set of instructional materials, consider what other kinds of hands-on manipulatives and supplemental materials might be needed to enhance instruction and support student understanding.

Rationale: Participants stated that the CMO has strong capacity overall. They shared that their staff capacity has strengthened with time and that leaders are considering how to continue to prioritize this area in coming school years.

- **Staff Capacity:** Staff shared that having strong content knowledge and open mindsets make it easier to learn the materials, and this has informed how the CMO approaches hiring. While it has not always been the case, the CMO feels fortunate to currently employ teachers who meet the staffing needs for implementing these materials. Because the CMO is smaller and only has one math teacher per grade level, the organization has focused on designating common planning times to allow for math collaboration across grades. They also provide time for math teachers to observe each other, which has benefited staff capacity development in learning from each other as they work to strengthen implementation.

- **Financial Capacity:** Open Up Resources is open source, which has given the CMO the financial capacity to order all of the necessary manipulatives to support instruction annually.

- **Administrative Capacity:** CMO and school leaders have greatly prioritized the success of this implementation and are therefore knowledgeable about the materials. Staff shared that they feel school and CMO leaders are approachable and helpful and that there are open communication structures to support implementation. There are coaching structures in place at the CMO to provide support from school leaders to teachers on a regular basis based on their area of need, whether that be a particular component of the curriculum or maintaining the classroom culture necessary to support inquiry-based instruction.

- **Systems Capacity:** The CMO has put in efforts to think about how to supplement the core instructional minutes from an Open Up Resources lesson to balance students' procedural needs. One CMO leader noted that it takes a full 60 to 70 minutes to complete a lesson largely focused on conceptual knowledge, so they have had to consider what other structures they can put in place to give students additional practice time. A teacher also noted that there have been challenges in accessing and downloading some documents within the online platform with the software and programs utilized by computers from the CMO.

Advice for other LEAs: Consider how to allocate time and resources to balance conceptual and procedural study and practice, and ensure there are adequate structures and time across the full school schedule to do both.

Rationale: While the district has not sought out professional development from the publisher or other external providers, they are intentional about providing development and support from school and CMO leadership, as well as looking for additional content-specific summer professional development opportunities for their staff. Staff shared that supports within the materials, such as course guides and unit guides, are well organized and helpful to orient staff to the materials. As one CMO leader shared, "I think it's highly supportive for someone coming in who has the requisite background knowledge to be able to translate that into an effective lesson for students." As noted in the Needs section, the selection of these materials was partly for the reason that CMO leaders believed they have stronger conceptual knowledge supports for teachers, and teacher feedback seems to suggest this has been true. As one first-year teacher participant shared, "If I do need a little extra understanding on the specific topic, I know that [the guidance] is there for me to read through and digest. So, that's been very helpful."

Participants shared that one of the most valuable resources for these materials is the Community Resources hub, which allows schools and LEAs implementing these materials to connect and share examples of resources they've created to implement the materials. The materials do have multiple supports for their Spanish-speaking student population, including translated materials, though one teacher shared that having translated lesson plans would be a valuable addition. The materials also offer letters that teachers can send home to families. All materials were available and accessible when implementation started.

Advice for other LEAs: Give staff time to familiarize themselves with the resources and guidance available for each lesson, and utilize the Community Resources hub.

Case Study 4: Curriculum Associates' Ready Mathematics (2017) and iReady Classroom Mathematics (2021) at a Large District
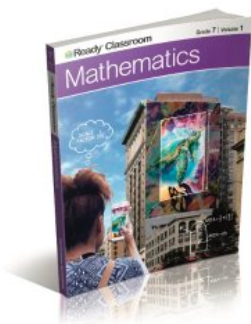
Local Education Agency (LEA) Facts

Grade Levels: TK-12
Size: Very Large
LEA Type: District

Implementation Facts

Grades Using: 6-8
Years Implementing: 5*

Need	3	**Usability**	4
Evidence & Impact	3	**Capacity**	4
Fit	4	**Supports**	5

The first year of implementation for these materials was the 2019–20 school year, so the first two years of implementation were highly irregular for many contextual reasons due to the pandemic. For this reason, the district decided to "relaunch" implementation in the 2021–22 school year, meaning that while they are technically five years in, they view this as their third year of full implementation. When the updated version of the materials became available in 2021, they transitioned to iReady Classroom Mathematics (2021) and have been using this version since then.

System Indicator
NEED

Rating **3**

Rationale: At the time of the prior adoption, the district engaged in a disaggregated data analysis, focusing in particular on their Smarter Balanced Assessments (SBAC) state test data and student grades. District leaders stated that they were concerned with their math SBAC

data overall and noticed lower performance for their multilingual learners[20] and across various subgroups within their middle schools. When analyzing their student grade data, they identified very high math failure rates for middle schoolers, which they observed was impacting student readiness and performance in high school math. They used the Curriculum and Instruction Steering Committee (CISC) Resources and Tools to guide their adoption and piloting protocols. The district surveyed staff stakeholders to gather feedback around what they were looking for in new materials but did not gather feedback from other key stakeholder groups, including students.

Advice for other LEAs: Utilizing a group of key stakeholders to synthesize feedback and provide guidance on the adoption process can be a valuable way to ensure the adoption is taking into account a variety of perspectives. Make sure to include students in the process to assess their needs and experiences through empathy interviews or other feedback mechanisms, both prior to adoption and during piloting.

Instructional Materials Indicator
EVIDENCE AND IMPACT

Rating **3**

Rationale: At the time of the adoption, the district became aware that their prior set of instructional materials had received a "Does Not Meet" rating from EdReports for alignment to college- and career-ready standards. When they began their materials investigation process, identifying a new set of materials that had received a "Meets Expectations" rating from EdReports became an important foundational criteria, which the *Ready Mathematics* materials did receive. They also used the CISC Resources and Tools to identify a rubric that their team used to evaluate materials and whittle down their options to two final choices, which they piloted. Their investigation also revealed that the *Ready Mathematics* materials had multiple supports for student discourse and engagement, which was important for them as they considered the needs of their multilingual learners.

There has been emerging evidence of effectiveness based on implementation and student achievement data to date. While there has been a switch to standards-based grading within the last couple of years, which makes it difficult to directly compare prior student failure rates

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[19] As defined in California Department of Education's (CDE) "Improving Education for Multilingual and English Learner Students," the term "English learner" (EL) refers to students who are formally (by federal civil rights law) identified as having a home language other than English and levels of English language proficiency that indicate they need programs and services that will support them in becoming English proficient. They are a federally protected class of students with the right to specialized services to become fully proficient in English and achieve grade-level standards. We reflect the terminology used by focus group participants in this case study summary.

with current grades, other sources of data have been promising. For example, they are noticing a higher correlation between proficient scores on diagnostic assessments and students getting proficient scores on their report cards, which seems to signal clarity and coherence around what is being taught and how students are being assessed. There have been moderate increases in SBAC data since the beginning of implementation, with relatively significant increases for particular subgroups of students (one group had a 14% increase over the past five years). Recent alignment on data analysis and formative assessment practices stemming from time in Professional Learning Communities (PLCs) has resulted in higher comprehension test scores at school sites than they had seen in the past. While teacher turnover in the math department has made it challenging to maintain positive momentum, the district is optimistic that by continuing the implementation of recent shifts, including strong onboarding, increased PLC time, and more instructional minutes, they will see even stronger student results.

> **Advice for other LEAs:** High-quality instruction is contingent on high-quality planning, and there's a power of collective efficacy in planning and aligning in PLCs. Increasing the time spent in PLCs aligning on the materials and formative assessment has allowed for stronger data analysis practices.

System Indicator
FIT

Rating **4**

Rationale: The materials, which emphasize a student inquiry–based approach, strongly align with the mathematics vision of instruction for the district. However, since this pedagogical approach is quite different from what they'd seen with their prior curriculum, as well as the prior training of some teachers, it posed more of a challenge for some staff to learn to teach in this way. One of the biggest challenges that school and district leaders observed at the beginning of implementation was teacher mindset around what students are capable of accomplishing and how to shift the cognitive load from teachers to students. In addition, a significant lift at the beginning was how to set up discussion protocols in math classrooms. But through district-led and school-based inquiry cycles, teachers have worked through these changes.

More of the work around teacher buy-in began when the district relaunched their implementation process two years into the original implementation. Since then, district leadership has focused on honing in on providing high-quality support for teachers, coaches, and leaders so that everyone feels equipped to grapple together with the changes needed to implement these materials successfully. They are leading lesson studies and instructional walk-throughs with staff from all levels to align on what they are seeing in math classrooms and what supports are needed, which

has led to stronger buy-in from staff. As one focus group participant put it, "Everyone really feels like part of the success and wants to grow as well through this."

The materials align strongly with their diagnostic assessment system, which work together to support teacher planning and instruction, as well as strategic small grouping of students based on need. Addressing uniform access for their multilingual learners continues to be a priority for the district, and they feel that the materials offer ample supports for this student group.

Advice for other LEAs: Knowing that language and discourse routines are a strong prerequisite for implementing these materials, understanding where staff are with these routines as a baseline can help inform initial implementation planning to support teacher needs.

Instructional Materials Indicator
USABILITY

Rating 4

Rationale: Teacher feedback has been very positive overall with regards to usability. The district sends out an annual teacher feedback survey, and typically around 80% of respondents report they feel "somewhat knowledgeable" to "highly knowledgeable" when it comes to how to implement the curriculum, which includes all of the long-term substitute teachers. The materials are highly predictable and staff share that it is easy to understand what the routines will be for the day, week, and month. Staff shared that the lessons, structures, and learning objectives and targets are very clear for staff at any experience level. It was also noted that the "Lesson Zero" components, which introduce students to the routines, provide a helpful opportunity for teachers to practice routines with students.

While there are a lot of resources to support teachers, including within the margins of the Teacher Edition of the instructional materials, staff shared that the usability of the materials greatly increased after engaging in shared lesson studies, where they were able to illuminate all of the key resources and supports available to teachers to maximize instruction. Now that instructional leaders also have a stronger understanding of how to orient staff to these key supports within lessons, this has helped with accelerating the learning and onboarding of new staff in implementation.

Vertical alignment has been strong, as they are using the same materials in their elementary schools, and they are also now thinking about how they can take what they've learned from their implementation experience to the high school level to create even stronger alignment K-12. Overall, they feel that the materials have adaptable components, and rather than modifying the

curriculum, they have focused on adding in layered supports for students to access the materials. Utilizing the acceleration pacing guide has allowed teachers to ensure that students continue to get access to grade-level content while also getting the supports they need, and the prerequisite mapping within the system makes it easier to differentiate.

> **Advice for other LEAs:** Providing sufficient and well-structured training is critical for setting staff up to maximize the usability of these materials. Allowing staff to see the routines modeled and engaging in planning and lesson study together is highly valuable.

System Indicator
CAPACITY

Rating **4**

Rationale: The district has strong capacity overall. They have seen challenges that arise from high teacher turnover and having to reset the foundation with training each year but are optimistic that this will continue to improve with strong training and development structures.

- **Staff Capacity:** The materials did require a mindset shift for many teachers in shifting the cognitive load from teachers to students. Greater content knowledge can be beneficial in guiding the instructional decision-making, but the materials do provide scaffolds for teachers with a range of content knowledge. While ongoing training supports and extended time in strong PLC structures have been critical for and were put in place to support teachers in this implementation, higher teacher turnover and onboarding new staff each year have made it difficult to sustain strong staff capacity to implement.

- **Financial Capacity:** The district has had the financial capacity to order all of the necessary materials annually, including associated manipulatives, as well as ongoing support and training from the publisher.

- **Administrative Capacity:** District and school leadership have greatly prioritized the success of this implementation, particularly since they relaunched their implementation process after returning to full in-person instruction. District and school leaders engage in regular walk-throughs to observe implementation and calibrate on what they are looking for with different routines and components of the curriculum. Staff share that they feel administrators are very knowledgeable and that communication structures are strong between district leaders, school administrators, coaches, and teaching staff. Coaching takes place individually with teachers and through PLCs.

- **Systems Capacity:** Significant systems changes were put into place to support this implementation. As already mentioned, they extended the time teachers spent in PLCs from 60 to 120 minutes every week, which allows teams to engage in item analysis and plan around intervention, acceleration, or small group support. Shifting schedules across the district to include TK-8 schools also allowed for an overlap between TK-8 and 6-8 schools to support the ability to engage in common pullout days and lesson study. They also shifted from a six-period day to a 4x4 block schedule where students receive a double block of math every day.

> **Advice for other LEAs:** Creating the conditions for high-quality implementation matters. Anyone considering adopting these materials must think through all of the parts of the system that affect implementation: strong initial and ongoing training, oversight with observations and feedback, and sufficient time in student schedules and for teachers in PLCs.

Instructional Materials Indicator
SUPPORTS

Rating **5**

Rationale: The district has contracted with several outside organizations, including: the publisher to come in and provide training and support for multiple years; an outside technical assistance provider for implementation guidance and support over a multiyear period; and an outside professional development provider for teacher professional development and lesson study support. While teachers shared that some of the initial trainings when implementation was first rolled out were not as effective, they reported that recent offerings focusing on lesson study with the materials have had an extremely high impact for their teams. Both school and district administrators shared that engaging in instructional walk-throughs together and the implementation-focused professional development have been supportive of building a collective vision of what they want to see in classrooms and transparent communication in what they are prioritizing in implementation.

Staff shared that there are very strong built-in supports within the materials for teachers to guide instruction—the key for these materials is knowing where to find all of the resources available to teachers, and what to pay attention to. Staff noted that when these resources are used well, they are very helpful to teachers. The materials do have multiple supports for student discourse and engagement, which has been supportive for their multilingual learners. The teacher toolbox offers a letter to families at the start of every lesson, as well as a home packet for families to do with

kids, all available in multiple languages. The materials also offer the option of accessing the entire book in Spanish. All materials were available and accessible when implementation started.

Advice for other LEAs: It's important to think about and put in place strong supports for all the staff who interface with learning in order to make sure that students get access to a high-quality experience: teachers, coaches, school administrators, and district leaders.

Conclusion

Our report set out to answer the question: **How feasible have California's most popular middle school math instructional materials been to implement across a variety of district and charter profiles?** These case studies demonstrate that the answer to this question is highly contextual, and all of the factors outlined in the Hexagon Tool investigative framework are important to consider when discussing the feasibility of implementation of a given set of instructional materials. The takeaways of the case studies are twofold: It is important to ensure that LEAs are adopting high-quality instructional materials and that there are plans and structures put in place to launch and support ongoing implementation of the materials.

The first case study, which details a district that adopted *Go Math! California*, is likely one that some of the estimated **76% of CA districts who still have middle school math products from the 2014 state adopted list**[21] can relate to, as they look ahead to their next adoption. This case provides insight into how much adoption processes have changed over the past decade and the valuable lessons learned from this district as they look ahead to their next adoption. As their team shared, it's important to "start with a deep dive into student performance data, as well as stakeholder needs assessments for all involved groups, including students, to understand the needs of your stakeholder populations and to analyze and identify priorities for your adoption process." In short, adopting materials that are going to be the best contextual fit for an LEA requires that adoption committees deeply understand and center their students' needs.

The subsequent case studies, focused on more recent adoptions of off-list materials, detail many valuable lessons learned and best practices from adopting materials that required substantial shifts in teacher pedagogical practices. Particularly in light of the release of the 2023 California Mathematics Framework,[22] their experiences will be valuable for those considering the shift to materials that emphasize inquiry-based learning. These case studies illustrate that there are important pieces of advice to keep in mind when planning to adopt and implement a set of materials that emphasize a shift in pedagogical practices for teachers, including the following:

- Build the foundation to strengthen **fit and usability:** Provide sufficient and well-structured training around the mindset shift required to implement the materials and to set staff up to maximize the usability of the materials. Give staff the opportunity to see the routines modeled and engage in planning and lesson study together.

- Create the conditions for strong **capacity** to implement: Think through all of the parts of the system that affect implementation, including strong initial and ongoing training, oversight with observations and feedback, and sufficient time in student schedules and for teachers in

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[21] The Center for Education Market Dynamics. (Fall 2023). K-8 Math Curriculum Landscape: Spotlight California. https://cemdstg. wpengine.com/wp-content/uploads/2023/11/CEMD_K-8-Math-CurriculumLandscape_CA_Fall2023.pdf

[22] California Department of Education. 2023 Mathematics Framework.

PLCs.

- Plan for the necessary **supports** from the start: Invest in publisher-led training starting from launch to set teachers and leaders up for success with how to envision and implement different parts of the lesson and how to navigate and leverage the various supports available.

Across all case study focus groups, it was clear that engaging in a group reflection around implementation experiences, like the one structured by the adapted Hexagon Tool, is a valuable way to surface insights from varying roles. Each question and the discussions that emerged from them illuminated new perspectives relating to the materials and prompted teams to consider future adjustments to strengthen their ongoing implementation process.

We hope these case studies, coupled with the adapted Hexagon Discussion & Analysis Tool, inform and strengthen districts' and charter systems' instructional materials adoption and implementation plans moving forward in order to better support California educators and their students.

APPENDIX

Hexagon Discussion & Analysis Tool: Investigative Framework[23]

System Indicator: Need

Discussion Questions

1. What focus population(s) and subpopulation(s) within your school or district community did you set out to impact with these materials? How were your priority subgroups identified?

2. Was an analysis of quantitative or qualitative data conducted to identify specific area(s) of need relevant to the instructional materials? If yes, what data were analyzed? Were these data disaggregated by race, ethnicity, language, and other characteristics specific to the focus population and subpopulation(s)?

3. Were school stakeholders (students, school staff, and families) engaged to assess need prior to adoption? If so, how? What were the areas of need for these stakeholder populations at the time of your prior adoption?

4. What advice would you offer to others in relation to this indicator? **Or,** if you could go back and implement this again, would you do anything differently in relation to this indicator?

Ratings

5 - Strong Needs Analysis

The implementing site[24] demonstrated a **comprehensive understanding of the needs** of the focus population in relation to instructional materials. The implementing site has included **three or more data sources** when conducting the needs assessment, including student achievement data and perspectives of staff, students, and families, and has disaggregated data to identify needs of specific and relevant subpopulations.

4 - Adequate Needs Analysis

The implementing site demonstrated an **understanding of the needs** of the focus population in relation to instructional materials. The implementing site has included **two or more data sources** when conducting the needs assessment, including student achievement data and perspectives of staff, students, and families, and has disaggregated data to identify needs of specific and relevant subpopulations.

3 - Some Needs Analysis

The implementing site demonstrated **some understanding of the needs** of the focus population in relation to instructional materials. The implementing site has included **two or more data sources** when conducting the needs assessment, including student achievement data, but has done **limited stakeholder needs assessment and/or has not disaggregated these data.**

2 - Minimal Needs Analysis

The implementing site demonstrated **minimal understanding of the needs** of the focus population in relation to instructional materials. The implementing site has included **only student achievement data** when conducting the needs assessment and **has not disaggregated these data.**

1 - No Needs Analysis

The implementing site did not **demonstrate an understanding of the needs** of the focus population in relation to instructional materials.

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[23] Adapted from: Metz, A. & Louison, L. (2019) The Hexagon Tool: Exploring Context. Chapel Hill, NC: National Implementation Research Network, Frank Porter Graham Child Development Institute, University of North Carolina at Chapel Hill. Based on Kiser, Zabel, Zachik, & Smith (2007) and Blase, Kiser & Van Dyke (2013). https:// implementation.fpg.unc.edu/resource/the-hexagon-an-exploration-tool/

[24] Throughout the tool, "implementing site" refers to the LEA engaging in use of the tool. If a school staff member is answering questions as a member of a larger LEA, they should speak to their own school experience, and the LEA as a whole to the best of their ability. Larger LEAs should answer to the majority of school experiences, or the LEA on average, to the best of their ability.

Instructional Materials Indicator: Evidence and Impact

Discussion Questions

1. What data was reviewed or evaluated to assess evidence of effectiveness (e.g., alignment to standards with appropriate depth and rigor; demonstrated impact on student learning) prior to adoption?

    a. Has EdReports reviewed this set of instructional materials (from the same publication year as when adopted)? Was it considered in adoption? Please describe.

    b. Was there evidence available (e.g., external evaluation criteria; internal rubric) prior to adoption to demonstrate the ability of this set of instructional materials to support the needs of priority subgroups? Please describe.

2. What has the data signaled to date as to the impact of this implementation (such as student achievement data, student work data, or implementation fidelity as measured by classroom observations, common planning time routines, etc.)? Was this data disaggregated by race, ethnicity, language, and other characteristics specific to the focus population and subpopulation(s)?

3. What advice would you offer to others in relation to this indicator? **Or,** if you could go back and implement this again, would you do anything differently in relation to this indicator?

Ratings

5 - High Evidence and Impact

The instructional materials have **demonstrated strong evidence of effectiveness based on implementation data to date and had strong evidence of effectiveness based on external review** (e.g., EdReports "Meets Expectations" score on the first two gateways).

4 - Evidence and Impact

The instructional materials have demonstrated **evidence** of effectiveness based on implementation data to date **for most staff, sites, or student groups.**

3 - Some Evidence and Impact

The instructional materials show emerging **evidence** of effectiveness based on implementation data to date for s**ome staff, sites, or student groups and had evidence of effectiveness based on external review** (e.g., EdReports "Meets Expectations" score on the first two gateways).

2 - Minimal Evidence and Impact

The instructional materials show **minimal evidence of effectiveness based on implementation data to date and had limited evidence of effectiveness based on external review** (e.g., EdReports score of "Partially Meets" on the first or second gateway).

1 - No Evidence or Impact

The instructional materials **do not have any evidence of effectiveness** (e.g., no demonstrated impact or received an EdReports score of "Does Not Meet" in the first gateway for alignment).

System Indicator: Fit
Discussion Questions

1. How have the instructional materials fit with the instructional vision of your site?

    a. How easy has it been for staff to learn to use the instructional materials based on the pedagogical approach, in comparison with prior instructional practices? If challenging for some staff, what were the needs of staff making a bigger shift?

2. How have other initiatives being implemented supported, hindered, or affected in any way the implementation of these instructional materials (e.g., supplementary instructional materials; intervention or tutoring programs; technologies in use)?

3. Were there steps to facilitate buy-in for staff and other key stakeholders prior to and after adoption? What steps were taken to facilitate any needed mindset shifts for staff? Please explain.

4. How do the instructional materials fit with family and community values and assets in the impacted community (e.g., are they culturally and linguistically responsive to the focus population)?

5. What advice would you offer to others in relation to this indicator? **Or,** if you could go back and implement this again, would you do anything differently in relation to this indicator?

Ratings

5 - Strong Fit
The instructional materials **aligned with instructional vision, stakeholders were bought in, and the transition to implementation went smoothly.** The materials were a good fit with other existing initiatives and are culturally and linguistically responsive to the impacted community.

4 - Good Fit
The instructional materials aligned with instructional vision but **required a shift from prior instructional vision and practices**. Stakeholders were bought in. The materials were a good fit with other existing initiatives and are culturally and linguistically responsive to the impacted community.

3 - Some Fit
The instructional materials required a s**izable shift from prior instructional vision and practices, and stakeholders were moderately bought in.** It was unclear whether the materials aligned with community values and other existing initiatives.

2 - Minimal Fit
The instructional materials fit with some but not all of the priorities of the implementing site, including instructional vision, other initiatives, and community values, and there was moderate stakeholder buy-in.

1 - Does Not Fit
The instructional materials **did not fit with the priorities of the implementing site,** community values, or other existing initiatives, and there were significant challenges with stakeholder buy-in.

Instructional Materials Indicator: Usability

Discussion Questions

1. What has the teacher feedback been on the usability of these materials to implement in the classroom?

   a. What has the feedback been on usability from other stakeholders (e.g., school leaders or students)?

2. Is each core feature well operationalized (e.g., staff know what to do and say, how to prepare, how to assess progress)? Are the materials easily usable by new teachers, if staff are less experienced? Explain why.

3. Is there vertical alignment with the pedagogical approach of the instructional materials in the grades or courses before or after that of your focus population (e.g., if adopting for 6-8, consider what K-5 and 9-12 are using)? If not, explain why.

4. Have teachers been able to easily modify or adapt the materials to meet the needs of priority groups? Are these modifications meeting the needs of students and continuing to provide access to grade-level content? Explain why.

5. What advice would you offer to others in relation to this indicator? **Or,** if you could go back and implement this again, would you do anything differently in relation to this indicator?

Ratings

5 - Highly Usable

The instructional materials have operationalized core components that are easy to access, understand, and utilize f**or staff at any experience level.** There is **strong vertical alignment within and beyond the focus population,** and when needed, staff are easily able to adapt and modify the materials to meet the needs of all students.

4 - Usable

The instructional materials have operationalized core components that **most staff are able to access, understand, and utilize.** There is strong vertical alignment within the focus population, and staff are able to adapt and modify the materials to meet the needs of all students.

3 - Somewhat Usable

The instructional materials have operationalized core components that most staff are able to access, understand, and utilize. There is **some vertical alignment,** but staff are not easily able to adapt and modify the materials to meet the needs of all students.

2 - Minimally Usable

The instructional materials have identified core components; however, there is l**imited vertical alignment, and it is difficult for staff to adapt and modify** the materials to meet the needs of all students.

1 - Not Usable

The instructional materials **are not usable in the focus context.**

Discussion Questions

1a. Staff Capacity: Do these materials require a certain experience or content knowledge level of staff, or a change in teacher expectations of students? How has this aligned with the staffing of your site?

1b. Staff Capacity: Have any adjustments been needed and/or made in relation to teacher collaboration time (e.g., Professional Learning Communities) in order to implement the materials? Please describe.

2. Financial Capacity: Have there been sufficient budgetary resources to support the cost of implementing these materials over time?

3a. Administrative Capacity: Has leadership been knowledgeable about and in support of prioritizing the implementation of these instructional materials? Has coaching and support from school and district leaders been available for building capacity of teachers and leaders for implementation? Please explain the structures and impact of this support.

3b. Administrative Capacity: Have the current communication systems facilitated effective communication with implementing staff and the community related to implementation? Explain why.

4. Systems Capacity: Have site systems sufficiently supported effective implementation of these materials (e.g., school schedule, such as instructional minutes and teacher planning; or technology, such as hardware or software)? Explain why.

5. What advice would you offer to others in relation to this indicator? **Or**, if you could go back and implement this again, would you do anything differently in relation to this indicator?

Ratings

5 - Strong Capacity

The implementing site has had **all** of the capacity necessary, including **all of the following:** staff capacity, financial capacity, administrative capacity, and systems capacity required to implement and sustain the instructional materials with integrity.

4 - Adequate Capacity

The implementing site has had **most** of the capacity necessary, including **three of the following:** staff capacity, financial capacity, administrative capacity, and systems capacity required to implement and sustain the instructional materials with integrity.

3 - Some Capacity

The implementing site has had **some** of the capacity necessary, including **two of the following:** staff capacity, financial capacity, administrative capacity, and systems capacity required to implement and sustain the instructional materials with integrity.

2 - Minimal Capacity

The implementing site has had **minimal** capacity necessary, including only **one of the following:** staff capacity, financial capacity, administrative capacity, and systems capacity required to implement and sustain the instructional materials with integrity.

1 - No Capacity

The implementing site **has not had the capacity** necessary, including any of the following: staff capacity, financial capacity, administrative capacity, and systems capacity required to implement and sustain the instructional materials with integrity.

Instructional Materials Indicator: Supports

Discussion Questions

1. Has there been **publisher or outside expert-led training or professional development** for teachers and leaders to help with implementation over time? To what degree has this met the needs of implementing staff?

2. Have the instructional materials included **built-in supports for teachers to guide instruction** and the use of the materials? To what degree have the supports in the instructional materials aligned with the support needs of staff?

3. Do the instructional materials have **built-in supports for specific student populations** (e.g., English learners; students with disabilities)? Please describe.

4. Do the instructional materials have built-in supports for partnering with families? Please describe.

5. Were the materials for all staff and students required for implementation readily available and accessible by the implementation start date? If not, please elaborate.

6. What advice would you offer to others in relation to this indicator? **Or,** if you could go back and implement this again, would you do anything differently in relation to this indicator?

Ratings

5 - Strongly Supported

Comprehensive resources have been available from an outside provider or in the materials to support implementation, including all of the following: external training or coaching, materials to support strong staff implementation, materials to support implementation with priority student subpopulations, materials to support partnering with families, and readily available materials.

4 - Well Supported

Many resources have been available from an outside provider or in the materials to support implementation, including four of the following: external training or coaching, materials to support strong staff implementation, materials to support implementation with priority student subpopulations, materials to support partnering with families, and readily available materials.

3 - Somewhat Supported

Some resources have been available from an outside provider or in the materials to support implementation, including two or three of the following: external training or coaching, materials to support strong staff implementation, materials to support implementation with priority student subpopulations, materials to support partnering with families, and readily available materials.

2 - Minimally Supported

Limited support resources have been available beyond the instructional materials themselves or a one-time training.

1 - Not Supported

There have been no resources available to support implementation.

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The California Curriculum Collaborative (CalCurriculum) is a partnership between EdReports and UnboundEd. CalCurriculum helps districts adopt and implement great instructional materials by providing independent reviews, content-specific resources, and adoption and implementation guidance tailored to the California context.

Learn more at calcurriculum.org.