XQ MATH BADGING SYSTEM

Implementation Guide for State Leaders

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Center for Assessment | XQ

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The XQ Institute is a nonprofit organization and independent affiliate of Emerson Collective founded in 2015. We work closely with students, families, educators, and district leaders to turn their ideas into action. XQ also has developed a suite of free, high-quality tools and resources that help bridge the gap between vision and practice. In addition, XQ engages in research and analysis to identify policies that support meaningful transformation—and lay the foundation for sustained change.

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AUDIENCE FOR THIS GUIDE

Thank you for your interest in the *XQ Math Badging System* (XQ-MBS).[1] This implementation guide is part of a broader set of resources designed to support different audiences involved in bringing the XQ-MBS to life. For example, a separate guide exists for district leaders, tailored to their specific roles and responsibilities.

This particular guide is written for state-level leaders—such as Directors of Innovation, STEM or Math Coordinators, and College and Career Readiness Specialists—who are interested in understanding the goals, structures, and strategic considerations for statewide implementation of the XQ-MBS.

While this guide is focused at the state level, the work it outlines will require close collaboration with district leaders and other key colleagues across your agency. Implementation is a collective effort, and your leadership at the state level is critical for building momentum, ensuring alignment, and sustaining impact over time.

OVERVIEW OF GUIDE

This implementation guide is designed to help you and your team strategically plan, launch, and sustain the XQ-MBS in your state. It supports you in identifying how best to integrate the program into existing state, district, and school structures and how to continuously evaluate and refine your approach to ensure that XQ-MBS leads to meaningful educational transformation.

The guide draws on lessons learned from early adopters in Idaho, Illinois, Kentucky, and the Bureau of Indian Education, as well as insights from the XQ-MBS design team and partners. Many of the tools and practical resources included here were created or refined by these colleagues during their pilot implementations.

To support implementation, the guide is organized into four main implementation steps, each corresponding to a major phase in the lifecycle of the program:

Step 1 - Evaluating Program Fit

This section introduces the core motivations behind the XQ-MBS, including its design principles and goals. You'll explore enabling conditions that support successful implementation and learn how to assemble a core team and broader coalition of partners to guide the work from the outset.

[1] We will sometimes refer to the XQ-MBS as a "program," depending on the immediate context.

Step 2 - Preparing to Launch the Program

In this section you'll walk through the key planning actions typically taken in the school year prior to launch. These steps help secure early buy-in from school and district leaders, teachers, families, and community partners—and ensure that systems and supports are in place for a smooth rollout.

Step 3 - Launching and Improving the Program

This section covers critical activities for supporting early implementation, including establishing a leadership structure at the state level, developing a district leader community of practice, and creating feedback loops to guide ongoing improvement. You'll also find guidance for supporting professional learning and fostering the exchange of ideas across participating districts.

Step 4 - Sustaining the Program

Finally, this section focuses on long-term sustainability. You'll explore strategies for evaluating impact, building a compelling evidence base, and deepening partnerships with postsecondary institutions and employers. You'll also learn how to grow the value of the badge system through policy alignment and community engagement.

Timeline and Iteration

While the four implementation steps suggest a general sequence, implementation is rarely linear. Many actions—especially those related to communication, professional learning, and feedback collection—will need to be revisited and adapted throughout the life of the program.

Additionally, the guide assumes that districts may roll out the XQ-MBS in phases, with different cohorts starting at different times. This approach was common among early pilot partners and can allow for thoughtful scaling and learning.

The timeline below (Table 1) offers an approximate timeline for when each step typically occurs, but you can adjust as needed.

Table 1 Steps and Timeline for Program Implementation

#	Program Step	General Timeline
1	Evaluating Program Fit	At least 1 year before starting the program
2	Preparing to Launch the Program	At least 6 months before starting the program
3	Launching and Improving the Program	During the first year (or two) of implementation
4	Sustaining the Program	During the subsequent years of implementation

Flexibility and Adaptation

Not all elements of this guide will apply equally to every state. Context matters—whether in terms of funding availability, policy conditions, or internal capacity for district support. The recommended actions throughout the guide are based on real-world implementation experiences, but should be adapted to your state context as needed.

Each major section includes recommended actions and sub-actions, along with helpful templates, reflection tools, and documentation strategies.

To support long-term success and leadership transitions, we encourage you to document key decisions at every stage—such as who was involved, how decisions were made, and what challenges or open questions remain. The guide includes examples from early implementation partners as well as appendices with templates to support documentation across all four steps.

Lastly, you'll find a glossary at the end of the guide with clear definitions of key terms. We've intentionally minimized the use of acronyms—except for XQ-MBS, which is used consistently throughout.

STEP 1 - EVALUATING PROGRAM FIT

There are six actions described in this section to help you evaluate whether the XQ-MBS is an appropriate fit for your state:

Action 1.1 - Review Alignment of the Math Badging Program With Priorities and Policies
Action 1.2 - Create an Exploratory Advisory Team
Action 1.3 - Review Insights About Program From Other States
Action 1.4 - Conduct an Evaluation of Fit
Action 1.5 - Identify Candidate Districts and Schools for the Program
Action 1.6 - Identify General Budget Parameters and Funding Guardrails

Appendix B has resources and templates that will help you document your key steps, reflections, and outcomes as you work through these actions.

These actions represent work that ought to be done in the year before you start the program.

Action 1.1 - Review Alignment of the Math Badging Program with Priorities and Policies

The first step in exploring the XQ-MBS is to assess how its educational vision and associated policy signals align with the priorities of your state.

What is the vision of the XQ-MBS? For more than a century, the Carnegie Unit has shaped the structure of American secondary education. This is true particularly in math, where instruction is traditionally delivered through a fixed sequence of year-long courses—Algebra I, Geometry, and Algebra II—or, in some cases, an integrated math course sequence.

The XQ-MBS challenges this legacy structure, offering an alternative approach that breaks mathematics out of rigid, time-bound pathways. Instead, it promotes a more modular, relevant, and flexible structure that certifies student learning in smaller, meaningful components—known as badges—that can be earned and celebrated in smaller units than traditional course grades or credits. Key features of the XQ-MBS include:

- **Badges are organized into learning pathways**, not traditional courses. Multiple badges may be embedded within a single course, or distributed across courses depending on instructional goals. Classroom experiences are designed to support deeper learning through real-world application of mathematics in both learning and assessment. These experiences aim to increase student engagement, build stronger math identities, and improve outcomes for both students and educators—while simultaneously transforming instructional practice. Figure 1.1 shows the connection between different badges.
- **The framework is flexible by design**, allowing districts to integrate badges into a variety of curricular and instructional models. The XQ-MBS is not a curriculum, but a structure for organizing and validating learning. Existing curricula can be mapped to the badges, and the badges can be aligned with state standards.
- **The grading and credentialing approach** is criterion-referenced and mastery-based, emphasizing formative feedback, revision, and transparent expectations. Supports are available to help educators incorporate badges into local grading systems or shift toward standards-based grading practices.
- **Students can see their learning progress** as they are awarded badges within a given course that maps to a series of badges. If a student is not passing a course, they can make up smaller units of credit rather than needing to retake a full course.

Table 1.1 below summarizes the key areas of flexibility that the XQ-MBS offers to districts and states.

Action 1.2 - Create an Exploratory Advisory Team

If you've determined that the XQ-MBS is a promising fit for your state, the next step is to convene an exploratory advisory team. This group can remain relatively small but should bring together colleagues with complementary areas of expertise, including:

- State mathematics standards
- State-recommended and district-purchased mathematics curricula
- Statewide educational innovation initiatives
- District-level program implementation and assessment
- College- and career-readiness initiatives around mathematics education

In addition, we recommend including representatives from two- and four-year higher education institutions in your state as well as those representing industry and CTE programs to ensure that the pathways developed meet the evolving expectations of those interest-holders.

In some cases, your state may already have an existing math or STEM advisory team. If so, this step may focus more on reviewing its current composition and mission and identifying whether and how the XQ-MBS could be integrated into its ongoing portfolio of work.

The following section outlines key considerations and action steps to support your team in conducting this initial evaluation and determining readiness for next steps.

Figure 1.1 Pathways for math badges within the XQ Math Badging Framework

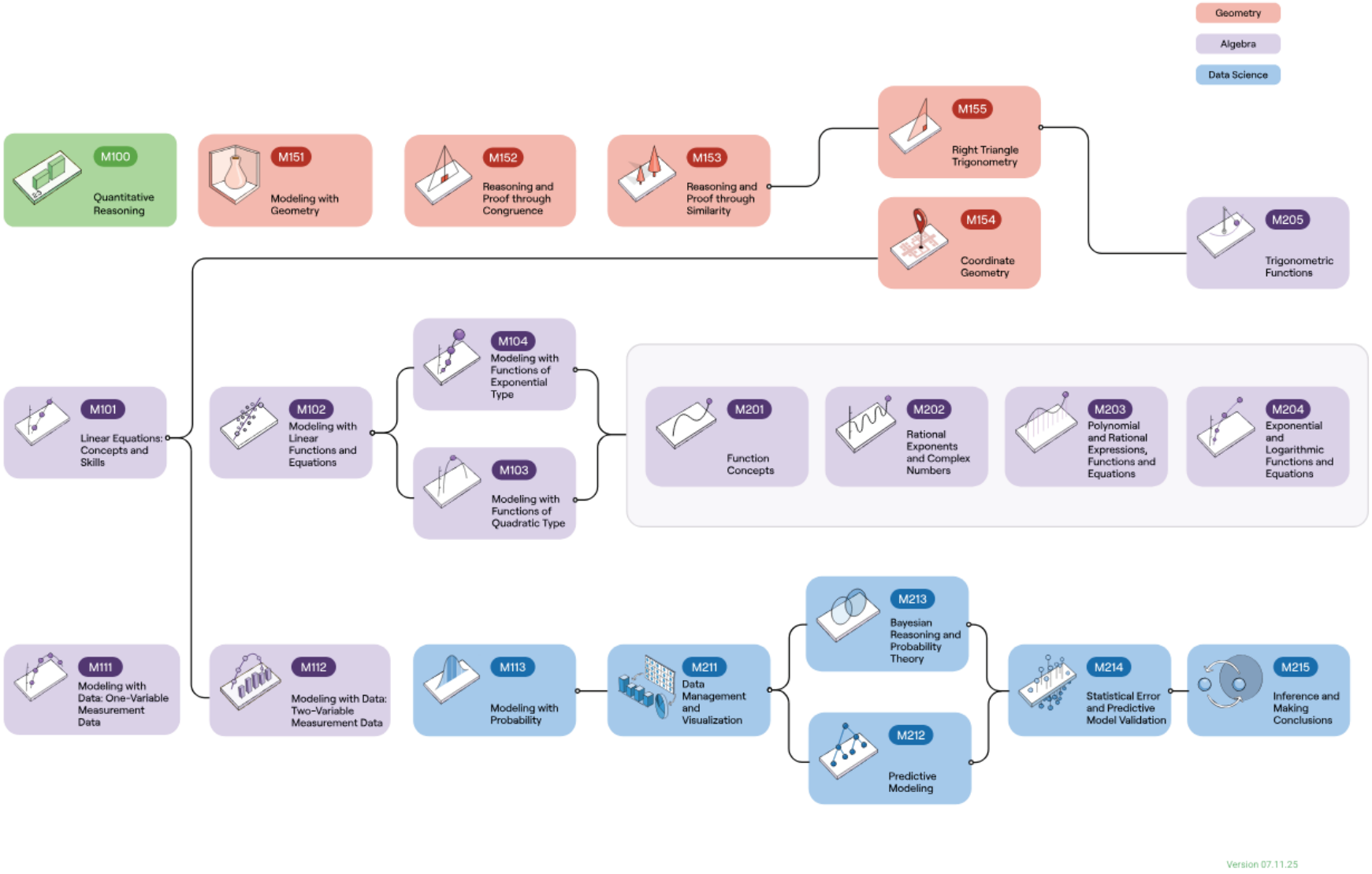


Table 1.2 Areas of Flexibility within the XQ-MBS

Areas of Flexibility	Description
Flexible Badging Pathways	The XQ-MBS is designed around math badges that cover a coherent set of content and practice expectations (CPEs) (i.e., badge-specific standards) that can be aligned with state standards. Badges (e.g., linear equations, modeling with exponentials) are smaller units of value than full courses, and can be organized into pathways or awarded within existing high school courses (e.g., Algebra I, Algebra II, Geometry). Students can choose to take one or multiple badges within a given pathway and can cross pathways for different areas of interest if desired. Students can also take multiple badges simultaneously whenever content sequencing allows.
Flexible Curricular Integration	The XQ-MBS does not prescribe a specific set of curricular content for each badge and can be aligned to a variety of mathematics curricula. The XQ-MBS is not a curriculum. It is a framework for designing instruction within a high school mathematics program. Resources include curricular alignment guidance and a set of engaging math activities to supplement existing curricula. In addition, alignment work has already been completed for the *Illustrative Mathematics* curriculum and an open-source XQ-developed math curriculum (for select algebraic badges).
Flexible Grading Alignment	The XQ-MBS uses a criterion-referenced, mastery-based approach to learning where formative feedback and the opportunity for revision is emphasized. The XQ-MBS includes resources to support working with teachers to integrate badges into local grading systems and/or to transform grading practices toward standards-based grading.

Action 1.3 - Review Insights About Program From Other States

The XQ-MBS has been implemented so far in three partner states—Idaho, Illinois, and Kentucky—as well as the Bureau of Indian Education. Their experiences offer valuable insights into both the enablers of success and the challenges to anticipate. Below is a summary of 10 key lessons learned from these pioneering partners:

Instructional Shifts

1. **Badging encourages important educational shifts.**
   Badging encourages shifts toward student-centered, problem-based learning, often transforming teachers' roles into curriculum adapters and coaches. Teachers often appreciate the focus on metacognitive reflections and students being able to engage in activities that resonate with them.

2. **Shifting assessment practices takes time.**
   Teachers need to adopt feedback-driven and mastery-based assessment approaches. Portfolio systems for capturing student work, aligning on definitions of proficiency, and gauging sufficiency of evidence of mastery for awarding badges are a powerful mechanism for these, but they require calibration in a community of teachers. Some teachers are fine without a skills-focused standardized badge assessment while others desire it or use local interim assessments or state summative assessments as stand-ins.

3. **Student engagement and identity can transform positively.**
   Students, particularly those with historically negative math experiences, tend to report increased confidence, interest, and persistence in math classes designed around badging. In order to increase a sense of relevance and authenticity of math learning with badges, teachers need to develop locally relevant, authentic tasks aligned to each badge and/or provide students with agency to choose their own contexts in student-led projects.

4. **Portfolios are transformational experiences.**
   Portfolios, whether physical or digital, serve an important role in transforming the educational experiences. They encourage careful curation of artifacts, self-reflection, and the use of more complex projects and associated work products. However, the thoughtful management of portfolios requires planning so that workloads remain acceptable and students receive meaningful feedback for learning.

Program Implementation Approach

5. **Flexible, local implementation models with state support work best.**
   Allowing districts and schools to customize their rollout—based on readiness, context, and capacity—is key to successful uptake and local ownership.

6. **Professional learning communities accelerate practice change.**
   Teachers benefit from structured, recurring professional spaces to collaborate, troubleshoot, and co-develop solutions—both within their local communities of practice and within the broader math badging educator community.

7. **High-quality resources matter.**
   Teachers need to be able to share resources with one another and have access to already developed high-quality instructional materials for badging so that each school is not developing everything they need from scratch. Resources should include example tasks, rubrics, and annotated student work. Districts value having access to common badge-to-standards mappings done by the state to help with managing badge-to-course and badge-to-assessment alignments, among other aspects.

8. **Communication with families and broader interest-holders is important.**
   State leaders noted the need for clear messaging and outreach to families, community members, and postsecondary representatives about what math badging is, how it supports student success, and in what ways it can be valuable for students' course choices in high school or their transition to postsecondary life.

Program Scaling

9. **Scaling requires systematic onboarding.**
   Implementation is generally most successful when states provide structured onboarding, mentoring, and pacing—helping new sites learn from experienced ones. Regional math specialists can play an important support role in these efforts.

10. **Systemic change takes time and policy support.**
    Long-term sustainability depends on addressing policy barriers related to credit, transcripts, course approvals, and high school graduation requirements. Badges have foundational value for transforming educational experiences for students, but using them in more high-stakes contexts (e.g., as replacements for remedial course requirements) requires additional buy-in and eventual policy changes.

Action 1.4 - Conduct an Evaluation of Fit

At this stage, engage your advisory team in a brief but purposeful review of the XQ-MBS Badge Framework and a sample badge(s) and its(their) associated resources. While curricular decisions ultimately lie with districts, this review will help your team more effectively communicate the program's value to local leaders and better understand how the badge system intersects with state and local policies—particularly those related to graduation requirements, transcript innovations, and credentialing initiatives.

Table 1.2 provides an overview of the core design components of the XQ-MBS XQ-MBS Badge Framework that your team may choose to review. If capacity is limited, consider having all members watch a short overview presentation by XQ, while assigning one or two team members—particularly those with expertise in state standards and curriculum design—to dive deeper into the full guide and bring back key insights for group discussion.

Table 1.2 Core Design Components of the XQ-MBS

Framework Section	Content
Learning Principles	These principles, developed by XQ and its partners, reflect modern conceptions of math teaching and learning grounded in the learning sciences and related research. They outline an ambitious, forward-looking vision for what 21st-century mathematics education can be.
Badge Catalog	The XQ-MBS includes 23 mathematics badges. These can be grouped and integrated into various course structures depending on district needs. The catalog includes visualizations showing how badges relate to one another. For example, in Kentucky, badges M101–M104 were aligned to Algebra I, while in Idaho, M201–M204 were embedded in a rigorous Algebra II alternative course. Other badges (e.g., M151) can be integrated into interdisciplinary, CTE, or advanced data science courses for instance.

Framework Section	Content
Badge Frameworks	This section describes for each badge: • The core CPEs and kinds of activities that would demonstrate evidence for each CPE (indicators) • The points of emphasis in each badge that show how the learning principles can be applied when teaching each badge • How evidence of learning can be collected and evaluated • Annotated student work for example tasks

Note: There are between 4 and 11 CPEs for each badge and between 5 and 25 indicators for each badge with typically about 2-3 indicators per CPE (see Appendix A).

Those reviewing the frameworks in depth may consider the following:

- **Which aspects of the XQ learning principles resonate most with your state's vision for math education?** Are there particular districts where these ideas might have the strongest traction?
- **How do the principles and badge structures align with ongoing state efforts**—such as transcript reform, microcredential initiatives, project-based learning, or workforce readiness strategies?
- **Are there areas of tension or misalignment?** If so, are these barriers to adoption or challenges that can be addressed with thoughtful planning and support?
- **Which badge pathways are most relevant** given your state's common course offerings? What existing structures or flexibilities could support badge completion across multiple courses rather than within a single class?

The next section of the guide asks your advisory team to reflect on key enabling conditions for successful and sustainable XQ-MBS implementation, which are outlined in Table 1.3. Even if conditions are not yet fully in place, the XQ-MBS can be a catalyst for strengthening them over time.

Table 1.3 Contextual Conditions Affecting Implementation of the XQ-MBS at the State Level

Conditions	Elaborations/Considerations
Favorable policy and priority conditions	**The XQ-MBS works in ways that echo the core tenets of certain modern educational approaches, so policies and educational priorities that are aligned with such approaches present a favorable space for implementing badging.** For example: • Is your state already advancing or spotlighting efforts related to mastery-based or competency-based education (CBE)? • Do any districts offer flexible graduation pathways that prioritize demonstrations of learning over seat time? • Are there local innovations such as alternative high school transcripts where credentials and micro-certifications play a meaningful role in communicating student readiness? • Are some districts driving toward deeper-learning models, emphasizing project-based learning and performance assessments as core instructional practices? • Are there industry partners or academy-industry partnerships in the postsecondary space that can be leveraged to incentivize the implementation of the badging program for dual credit, CTE, or other courses in high school? By identifying and connecting these promising practices, state leaders can amplify innovation, reduce fragmentation, and build a coherent vision for student-centered learning and credentialing that aligns with future-ready learning goals.
Opportunities for learning and sharing among district leaders	**When district leaders are energized by an initiative and empowered to lead alongside their peers, the likelihood of long-term success with XQ-MBS increases dramatically. Sustained impact often hinges on cultivating networks of leadership and learning across districts.** What statewide professional learning communities or collaboration structures can you tap into, either virtually or in-person? For example, in Kentucky, educational service centers ("regional cooperatives") play a key role in bringing district leaders together, while regional innovation specialists offer targeted support for scaling innovation within geographic clusters. The state has worked with districts to co-create a statewide Portrait of a Learner reflecting core readiness competencies and has encouraged districts to develop their own and share their learning. Leveraging these types of networks can accelerate momentum, foster shared problem-solving, and support consistent implementation across diverse contexts.

Conditions	Elaborations/Considerations
Resources available to support program implementation	**Implementing the XQ-MBS will require some state- and district-level investment—particularly in professional learning for teachers, curation of instructional resources, and, ultimately, technology solutions supporting badging and alternative credentialing.** While partnerships all require dedicated time, funding, and strategic planning, it can be very impactful to identify potential collaborators early on in this work. Are there existing partnerships with professional learning communities that can be leveraged? Are there resources in the state such as the Idaho Regional Centers or partnerships such as the Kentucky Department of Education with the Kentucky Center for Mathematics? States can also play a key role in identifying or recommending tools that reduce the burden of labor-intensive tasks, such as portfolio management systems or platforms that support performance-based feedback and credential tracking. For example, in Idaho, the state is supporting the use of SkillStack, a system built for credentialing and delivering CTE badges, for use with math badging. As a state leader, it's important to proactively identify funding sources—whether through innovation grants, workforce development funds, or philanthropic partnerships—to support districts in launching and sustaining math badging efforts without diverting resources from other priorities. In addition, don't overlook the value of experienced district leaders themselves as critical resources—offering implementation insights, peer coaching, and practical guidance that can accelerate adoption and deepen impact across the state.

You may wish to expand the list above with additional areas relevant to your state's context. These conversations should guide your advisory team toward a clear recommendation—helping you, as a state leader, determine whether the XQ-MBS is a strong fit for select districts and how best to position it with district leaders.

The more questions your advisory team can answer affirmatively—or identify clear, manageable solutions for—the smoother the path to successful XQ-MBS implementation will be. However, if the majority of responses raise significant concerns or uncertainties, it may be wise to focus first on strengthening local conditions before moving toward a full launch or to plan a phased rollout. For instance, you might begin with a small cohort of districts, allowing time to learn from their experiences, refine supports, and build statewide momentum based on real-world insights.

To support this process, Appendix B includes a *State Readiness Self-Assessment*—a tool you can use with your advisory team to reflect on your current context and capacity. Ideally, by this stage, your team sees clear promise in the XQ-MBS—at least for a subset of districts—and you've captured their initial perspectives in a document like Table A2 in Appendix B.

Action 1.5 - Identify Candidate Districts and Schools for the Program

At this stage, it's useful to begin drafting a candidate list of districts that could serve as strong early adopters of the XQ-MBS. This list should be considered a living document—a starting point that can grow as additional districts express interest or as momentum builds statewide.

A multi-pronged outreach strategy will be most effective in identifying and engaging these districts. Consider the following approaches:

- **Direct outreach** to district leaders who already demonstrate favorable conditions for XQ-MBS implementation (e.g., who have customized state graduation policies by adapting them to local priorities, have shown an interest in credentialing, a desire to improve mathematics teaching and learning, and strong instructional leadership)
- **Connecting the XQ-MBS to existing school visits**, especially in high schools where math improvement is a priority or where deeper learning initiatives are already underway
- **Requesting agenda time at network meetings or convenings** where district leaders gather to discuss innovation and strategic planning that fits well with the XQ-MBS
- **Promoting the XQ-MBS through established state communication channels**, such as your department's website, newsletters, or innovation spotlights, with follow-up information sessions

In particular, leverage any existing outreach methods that have proven successful in your state, including regional cooperatives, innovation hubs, or district peer-to-peer networks. The goal at this stage is not just to recruit participants but to seed local leadership and build early momentum.

Action 1.6 - Identify General Budget Parameters and Funding Guardrails

There is no way around it—the implementation and ongoing support for an innovative educational program like the XQ-MBS requires sustained funding. The following is a list of approximate budget allocations based on reports from our partners but also similar programs in CBE, project-based learning, and technology-integrated models.

1. Invest heavily in professional learning and teacher support (~30–40%)

Across all pilot states, ongoing, high-touch support for teachers was the single most frequently cited success factor. Consider prioritizing:

- Stipends for teacher participation in PD (especially summer and after-school)
- Regional or statewide workshops (about two a year)
- Cross-district PLC facilitation and tech support (monthly meetings)
- Coaching, observation, or "in-the-room" support from math specialists (weekly visits)
- Travel costs for convenings or site visits
- In-state professional development partner with math expertise to provide the support listed above

2. Provide resources for curriculum, tasks, and assessment development (~15–20%)

Teachers need help creating, curating, and adapting resources aligned to badges. Consider providing:

- Badge-standards alignment and course mapping
- Teacher-led task and portfolio development teams
- Resource creation stipends (e.g., lesson adaptations, badge-aligned projects)

- Tools for student self-assessment and reflection
- Support for aligning tasks to performance expectations and assessments
- In-state professional development partner with math expertise to coordinate and lead these efforts

3. Fund technology tools and infrastructure (~10–15%)
Portfolio management and badge tracking are core to implementation but often under-supported. Consider funding:

- Access to vetted digital platforms for portfolio and badge tracking
- Development or licensing of low-barrier tech solutions (e.g., Google-based tools)
- IT setup and training for assessment platforms
- Centralized tech support for teachers and districts

4. Support mentoring, site onboarding, and expansion (~10–15%)
As states grow program implementation, they need to invest in deliberate scaling—especially teacher-to-teacher onboarding and peer support. Consider providing:

- Stipends for mentor teachers
- Travel or release time for site visits or shadowing
- Development of onboarding materials or orientation sessions
- Cohort-based implementation support models

5. Enable storytelling, research, and postsecondary engagement (~10%)
Pilot states that invested in systematic storytelling and research efforts saw stronger interest-holder engagement and policy momentum. Consider creating:

- Student and teacher video storytelling or documentation
- Research partnerships (e.g., with universities or evaluation firms)
- Convenings with postsecondary partners (panels, co-design events)
- Creation of messaging materials for families and counselors

6. Reserve flexible funds for specific school-based needs (~5–10%)
Several states reported that small but timely investments—in supplies, incentives, substitute coverage, or classroom materials—helped teachers succeed. Consider supporting:

- Mini-grants for school-level innovation
- Supplies for project-based or task-based learning
- Local badge exhibitions or student events

No single support will provide a comprehensive, stand-alone solution to implementation needs but a carefully configured set of supports can make a huge difference in long-term implementation success.

STEP 2 - PREPARING TO LAUNCH THE PROGRAM

There are 10 actions described in this section to help you get ready to launch the XQ-MBS in your state:

Action 2.1 - Expand Your Advisory Team
Action 2.2 - Solidify Statewide Vision and Goals for Program Implementation
Action 2.3 - Determine Badge-to-Standards Alignment
Action 2.4 - Determine Badge-to-Course Alignment
Action 2.5 - Determine Badge-to-Curriculum Alignment
Action 2.6 - Determine Badge-to-Assessment Alignment
Action 2.7 - Develop Criteria for High-quality Implementation Practices
Action 2.8 - Engage District Leaders Around the Program
Action 2.9 - Plan Supports for District Leaders
Action 2.10 - Identify Provider for Managing Professional Learning Supports

Appendix B has resources and templates that will help you document your key steps, reflections, and outcomes as you work through these actions.

These actions represent work that ought to be done in the six months before you start the program.

This section is first and foremost about all of the preparatory steps that state leaders need to spearhead to get ready to launch the XQ-MBS—in collaboration with school and district leaders, partner organizations, and other kinds of collaborators of course. This work typically takes place during the prior school year to the launch but many of the preparatory steps remain relevant throughout the implementation of the program, particularly if you add additional badges in later years.

The amount of time the actions in this step take can vary anywhere from a few weeks or months to an entire calendar year. The exact timing will depend on the scope of the initial implementation and can be modified in partnership with the advisory team.

Providing consistent, thoughtful leadership throughout all phases of implementation of the XQ-MBS is essential as district and school leaders encounter mathematics learning opportunities that may be significantly different from what they have historically experienced.

Action 2.1 - Expand your Advisory Team

To support this change effort, seek to expand awareness of the program and to engage partners across the agency, in districts, and in postsecondary institutions in your state (e.g., higher ed, CTE programs, industry).

Depending on how your statewide support for the XQ-MBS is organized at this point, you might want to include regional support specialists from the SEA as well as select representatives from educational service agencies who work with multiple districts in which the XQ-MBS is scheduled for implementation.

This formal advisory team should meet regularly—perhaps bi-monthly or quarterly, depending on size and availability—to think through key implementation steps and to help you keep an eye on blind spots that may threaten the efficacy of the program or its long-term sustainability.

This group will be able to identify pain points within and across schools and quickly elevate them to the larger team to be able to problem-solve quickly. It can also weigh in on the range and timing of communications needed for other interest-holders.

Action 2.2 - Solidify Statewide Vision and Goals for Program Implementation

Strong program implementation typically requires a clear internal understanding about how the program is situated within other educational priorities for the state. The key elements are generally captured in a theory of action and a logic model, which summarize aspects such as:

- What are the **primary motivations** for implementing the program? What core educational priorities / issues is the implementation designed to address?
- What are the **short- and longer-term outcomes** you would like to see from the program implementation? In other words, **what would success look like** in one year, two years, five years?
- What are the **key actions** that different interest-holders at the state office and the districts need to take to make the program implementation successful?
- What are some **resources that can be leveraged** to facilitate program implementation?
- What are some **challenges that have to be addressed** during implementation?

To illustrate, Tables 2.1 and 2.2 show simple, high-level summaries of these ideas from Idaho while Figure 2.1 shows an Idaho roadmap for course-taking pathways in high school. The roadmap shows a flexible structure at the course level for grades 10 and 11 that mirrors the flexibility of badges, thus signaling a coherent system that is designed to provide reasonable flexibility to students without sacrificing common expectations for all students.

Table 2.1 Theory of Action for Idaho Implementation of the XQ-MBS

If...	Then...	Then...	Then...	Then...
Idaho SDE, RMCs, and XQ collaborate to develop a mastery-based math badging system	Student portfolios created for math badges provide evidence of student mastery of mathematical skills and concepts that are relevant to Idaho colleges and industries	Students can share evidence of mastery with college advisors and employers AND Students can earn credit for high school mathematics using micro-credentials	Students will easily transition from high school to college and career opportunities that utilize mathematics skills	Students will graduate with the math skills that are most important for their college or career field of choice

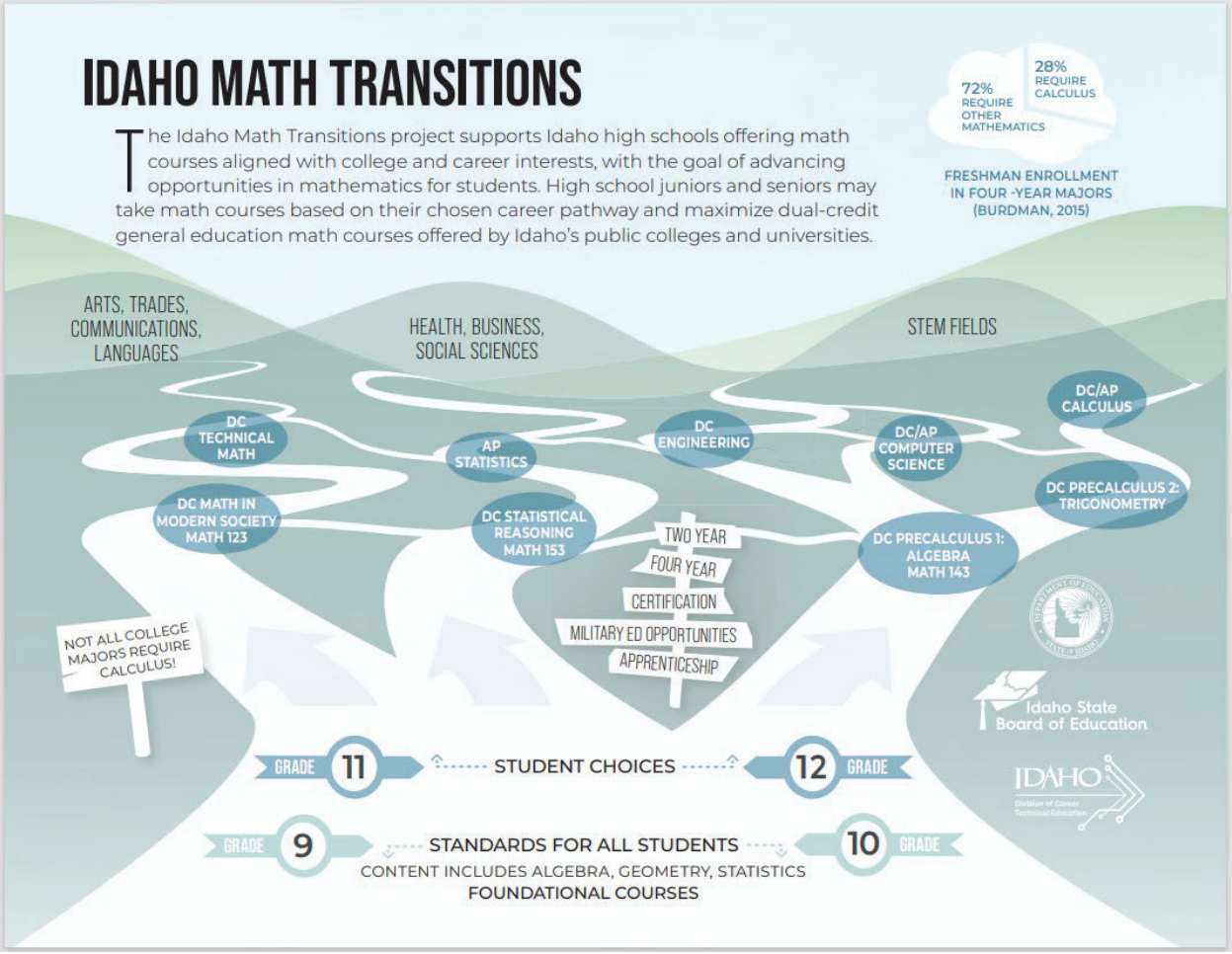
Table 2.2 Logic Model for Idaho Implementation of the XQ-MBS

Inputs/Resources	Activities	Outputs/Artifacts	Short-term Outcomes	Long-term Outcomes
• XQ math badging implementation guide • State math coordinator • Project leader • 6 Regional Math Specialists[2] • 6 Badging Teacher Mentors • District-provided time for teachers in cohorts • Travel funds for teachers to state/ regional events • Consultation and professional development from XQ and SAP • Idaho math badging resource collection • SkillStack® platform[3]	Intensive training for the first two cohorts of badging educators including: • 6 in-person PD days per year • 4 site visits by RMS • Virtual Idaho Badging PLCs	Number of teachers and schools attending training • Student portfolio work samples • Badge Maps (organized Idaho resources) • Site visit observation notes on: - Instructional practices aligned to Idaho Math Instructional Framework - Student discourse about context from real-world problems - Student confidence about mathematics - Students discussing work samples in student-led portfolios	1. Changes in teaching and assessment practices as measured by: • Training feedback forms • Teacher mathematics instructional practices survey • Teacher beginning-of-cohort profile form • Teacher end-of-year math badging reflection form • Teacher focus groups • Classroom observations guided by standard protocol 2. Positive changes in student math confidence as measured by: • Student pre/post math surveys • Student focus groups • Classroom observations guided by standard protocol 3. Increases in math classes pass rates as measured by: • Increases of completed badges in SkillStack • Changes in credit-awarding policies for math in high school • Annual school profile forms	• Increased number of students proficient in math as measured by Grade 11 ISAT • Increased number of students taking 4 years of high school math • Increased number of students taking a dual credit math course before graduating • Decreased number of students retaking Algebra I

[2] Note that in Idaho support came from an external partner who hired the regional math specialists, but this support could come from in-district coaches, state department-hired math specialists who support the participating teachers, or as part of the support offered by the professional development provider.

[3] SkillStack was already used in Idaho to support other credentialing programs, but other mechanisms could be used including simple Google Drive folders. Having access to common technology tools is very helpful in supporting badging.

Figure 2.1 Roadmap for course-taking pathways in high school



We recommend that you engage district leaders early to help them reflect on their own local educational priorities and clarify their rationale for implementing the XQ-MBS. Encourage them to define their own theories of action and logic models so they can see how the program aligns with their goals and existing work.

You can use your statewide models as a reference point during onboarding workshops or planning sessions. Then, work with district leaders to customize these models for their local context. When you help districts articulate how the program fits into their broader vision, they'll be better equipped to track progress, course-correct when needed, and share meaningful insights with your team.

Sharing the theory of action can be one way to help identify who is on board with the vision and who still has questions. Understanding those questions or concerns concretely is the first step to addressing them and strengthening the program.

Action 2.3 - Determine Badge-to-Standards Alignment

One key step in developing district buy-in is the alignment of badges to state standards, which can include standards for college and career readiness. Some of this work could be done at a district level but will benefit from state-level leadership and collaboration. The role of the state is not to provide requirements but to enable work teams to collaborate and to bring in relevant math

expertise from within the SEA or independent academic institutions that your state may be working with already.

For example, in Table 2.3 you can see how a district in Illinois aligned the CPEs for the M101 badge with the Illinois Standards for Math first, which includes descriptions of sample tasks in various learning systems. They also provided examples of resources that the teachers in this school could draw to supplement curricular materials.

Action 2.4 - Determine Badge-to-Course Alignment

Participating schools and districts will need information to help them understand which badges are relevant for which courses and whether there are multiple badges to be covered with a course or across courses.

This action may take place in conjunction with Action 2.3 or even before Action 2.3. It could also be taken at the district level but multiple participating districts will likely appreciate the opportunity to engage in this work with support from the SEA team. The team supporting Action 2.3 can also support this action.

In Idaho, this work is done on the basis of a published course planning guide, which allowed state leaders to create summaries such as the one shown in Table 2.4. The team is also working on a recommendation for how to implement badges in different versions of a course with the same name, as these courses are often differently designed across schools / districts.

Table 2.3 Example Mapping of M101 CPEs to Illinois Math Standards and Instructional Resources

Content and Practice Expectations	Indicators: Choose an artifact where you…	Illinois Learning Standards for Math	Examples of artifacts (IXL)	Examples of artifacts (Desmos)	Examples of artifacts (Worksheets/ Notes)	Video Resources
101 a: Reason about and solve one-variable equations and inequalities	i. use variables to represent numbers and write expressions when solving a real-world or mathematical problem	A-CED	IXL Alg1 I.5 - Write variable equations	Desmos Activity - Guess my Rule	Translating English to Algebra	Video - Translating English to Algebra
101 a: Reason about and solve one-variable equations and inequalities	ii. demonstrate understanding that a variable can represent an unknown number or, depending on the purpose at hand, any number in a specified set.	A-SSE	IXL 8th Y.1 - Which x satisfies an equation? AND IXL Alg1 K.3 - Identify Solutions to Inequalities	Desmos Activity - Inequalities on the Number Line	Variables & Expressions	Video - Variables & Expressions
101 b: Solve real-life and mathematical word problems using linear expressions, equations, and inequalities	i. solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form while using tools strategically.	A-APR	IXL 8th X.4 - Write Variable Expressions: Word Problems	Desmos Activity - Central Park	Stained Glass	None available

Table 2.4 Example Summary of Standards Coverage in Idaho

Badge	Pre-HS	9-10 Grade (F)	11-12 Choice (A)	11-12 College (C)	% F	% A	% F
M100	15	3	3	2	78%	13%	9%
M101	3	2	3	3	45%	27%	27%
M102	2	19	15	17	40%	28%	32%
M103	0	24	12	28	38%	19%	44%
M104	0	24	5	31	40%	8%	52%
M111	3	4	3	0	70%	30%	0%
M112	0	7	2	6	47%	13%	40%
M113	1	4	0	12	29%	0%	71%
M151	0	8	5	7	40%	25%	35%
M152	0	19	0	0	100%	0%	0%
M153	0	8	0	2	80%	0%	20%
M154	0	5	6	3	36%	43%	21%
M155	0	2	3	0	40%	60%	0%
M201	0	8	0	20	29%	0%	71%
M202	0	3	5	7	20%	33%	47%
M203	0	13	11	9	39%	33%	27%
M204	0	11	4	12	41%	15%	44%
M205	0	0	0	10	0%	0%	100%
M211	0	11	5	6	50%	23%	27%
M212	0	0	0	11	0%	0%	100%

Note. F = Foundational, A = Advanced, C = College.

Math I or Algebra I are common places to begin implementation as these courses are foundational to high school and postsecondary mathematics. Many students in these courses, especially those from marginalized groups, often fail and have to repeat a course. Allowing students to experience badges at the Algebra I or Math I level thus offers a distinct opportunity to position mathematics as an exciting discipline early in high school, to change the trajectory of students' mathematical experiences in high school and beyond, and to be a driving force for allowing all students to succeed in math.

Mapping badges to existing math courses is not the only way to begin. You could also:

- **offer select badges as part of interdisciplinary courses** (e.g., as part of courses or course sequences in construction, data-based policy science or social justice, game development, urban engineering)
- **use badges as a part of a credit recovery program**, although doing so exclusively can send undesirable signals that math badging is only for struggling learners
- **assign badge work via independent study** for advanced learners or for struggling learners who need to make up some, but not all of the skills, for a course
- **create new courses aligned to single or multiple badges** although this could require a more significant investment of resources

Next, educators and local leaders will need to have access to a coherent, well-aligned set of curricular materials to be able to implement the XQ-MBS.

Action 2.5 - Determine Badge-to-Curriculum Alignment

This action is about mapping badges to curricular materials and will naturally be impacted by the degree of similarity in curricula materials across participating districts. If districts are all using different materials this is likely a task for the district teams. However, if the same core curricula are being used across multiple districts, there is an economy of scale and a collaborative learning opportunity for districts to engage in this alignment work together with SEA support.

This more detailed analysis of the curricular materials allows for a deeper understanding of where there is overlap and where there are gaps in terms of learning supports for the badge content. There are essentially three options for the curricular materials, which can even be combined:

- **Align existing curricular materials** with the XQ-MBS
- **Adopt freely available curricula** that are already aligned with the XQ-MBS
- **Develop new curricular materials** that are aligned with the XQ-MBS

Evaluating the alignment of existing curricula resources with the XQ-MBS is a natural starting point.

The team responsible for this action should evaluate a sampling of these curricular resources and determine the degree of alignment to the XQ-MBS CPEs and learning principles. This review can be used to determine whether existing curriculum will support badge implementation relatively easily as-is or whether adaptations or new materials will need to be developed.

As noted above, this alignment review team should consult the CPEs for the badges districts plan on implementing as well as the learning principles as outlined in the XQ Math Badging Framework. If your team decides that existing materials are insufficiently aligned with the goals of the XQ-MBS (e.g., aspects of the badge content that do not align with the current curriculum materials), looking to already-aligned curricula is a natural next step.

One option here is to adopt the freely available XQ Project-based Algebra I Mathematics Curriculum. Another option is to adapt the freely available and open-source Illustrative Mathematics curriculum, which has been aligned to the XQ-MBS. Both of these curricula could either be adopted wholesale or as supplementary resources where there are aspects of a badge not covered in your current curriculum materials.

If teachers are being directed to supplementary resources it will be important to tag which ones specifically to include, and to also identify what aspects of the primary curriculum could be omitted in order to provide time for the supplementary resources. Teachers and math coordinators should also review these decisions after the initial implementation to determine whether the initial plans were realistic and to adjust as needed.

If neither of these approaches seems like a feasible option, your team would need to curate suitable lesson materials for teachers to use. If you do so, ensure ample lead time for development so that teachers have time to read, review, and prepare to teach using the materials.

Regardless of how curriculum materials are sourced, it is important that teachers participating in the XQ-MBS have access to curriculum-alignment documentation with sufficient time to engage with both the alignment information and any new resources before starting to teach with them. As illustrated in Figure 1, the common instructional resources for the M101 badge were linked to the CPEs and provided centrally for teachers to use.

Action 2.6 - Determine Badge-to-Assessment Alignment

It is generally helpful to understand the alignment between the badges and different kinds of assessment that are used to monitor progress during the year or evaluate student learning at the end of the year. This helps to document the depth of coverage of these assessments relative to the CPEs for the badges and to identify specific items in interim assessments that can be used to check for students' understanding of certain CPEs.

Table 2.5 shows an example of this mapping in Idaho for the *SmarterBalanced* interim assessments - interim assessment blocks and focused interim assessment blocks - with a connection to the learning targets of the ISAT, which is the state summative assessment.

Action 2.7- Develop Criteria for High-quality Implementation Practices

Early implementation experience has shown that it is important to provide clear guidance on what successful XQ-MBS implementation looks like. Districts often look to the SEA (along with other districts) for examples, models, and expectations that can shape their local approach. You can draw from a range of sources, including:

- **Official XQ-MBS documentation**
- **State-developed guidance and tools**
- **Lessons learned from early implementation districts**

For example, XQ offers a variety of resources that illustrate high-quality student work and how to evaluate portfolio evidence in order to award badges. These include case studies from partner states and examples of classroom practice.

You can strengthen this guidance by incorporating related best practices from other statewide initiatives—particularly in project-based learning, deeper learning, or CBE, and especially in mathematics. These connections help districts see how the XQ-MBS builds on familiar efforts.

Action 2.8 - Engage District Leaders Around the Program

We recommend that you develop a clear, collaborative plan for how interested districts will move forward with XQ-MBS implementation. Since each district operates with different priorities, capacities, and timelines, it's important to understand local contexts before finalizing your approach.

You may want to assess whether a common implementation trajectory will work across participating districts, or whether you'll need to support multiple paths. Consider which districts may need more planning time, what local factors could affect their readiness, and where your team can provide additional support.

To help track this work, you can use simple project management tools—such as Google Sheets or Excel spreadsheets (or any other project management software to which you have access, including more advanced ones)—to monitor district progress across phases like program orientation, pilot planning, and implementation goals. You can gather information about local needs in a variety of ways, depending on your capacity and the scale of implementation. Options include:

- **Needs assessment forms or surveys**
- **Virtual or in-person webinars with structured discussion**
- **Conversations during regularly scheduled visits**
- **Email updates, newsletters, or social media outreach**

It can be helpful to assign a state-level point of contact so districts know who to reach out to with questions, feedback, or ideas. A single, consistent contact can make communication more efficient and strengthen your working relationships with districts.

Table 2.5 Mapping of Badges to Interim Assessment Items and Targeted State Standards in Idaho

Badge	Filename	Item ID	iSAT Target	Relevant Standard(s) / Cluster(s)
M100	High School MATH - Algebra and Functions II (IAB)	#14-4 1688	4A	Inferred Clusters for Claim 4: N.Q.A, A.CED.A, F.IF.B, F.BF.A, A.REI.C
M100	High School MATH - Number and Quantity Functions (FIAB)	#11-23122	4A	Inferred Clusters for Claim 4: N.Q.A, A.CED.A, F.IF.B, F.BF.A, S.ID.A, A.REI.C
M100	High School MATH - Number and Quantity (FIAB)	#6-14474	1C	N-Q.1 (N.Q.A.1)
M100	High School MATH - Performance Task - Teen Driving Restrictions (IAB)	#5-21563	4A	Inferred Clusters for Claim 4: N.Q.A, A.CED.A
M101	High School MATH - Algebra and Functions II (IAB)	#13-5 1149	1J	A-REI 11 (A.REI.D.11)
M101	High School MATH - Seeing Structure in Expressions/ Polynomial Expressions (FIAB)	#12-45390	1D	Inferred Clusters for Claim 3: A.SSE.A.2, A.APR.D.6, A.REI.D.10, A.REI.D.11
M102	High School MATH - Algebra and Functions II (IAB)	#1-83834	1I	A-REI 3

Action 2.9 - Plan Supports for District Leaders

This action focuses on identifying what kinds of district-level support can realistically be offered from the state office during program rollout. Some of this support may be direct—for example, by sharing resources such as standards-to-badges alignment tools or offering statewide virtual workshops. Other supports may involve facilitating or strengthening communities of practice among district leaders and educators.

You may want to include examples of how districts can organize their local implementation work. For instance, Table 2.3 above showed the alignment of CPEs for the M101 badge with the Illinois Math Standards and supplemental instructional resources teachers could use to support student learning. This kind of alignment guidance can be developed and shared at the state level to help districts get started.

In addition to sharing resources, consider how your team can support the development of professional learning communities for district or school teams. Topics that will require ongoing support include:

- **Communicating with students about math badging at the start of the year**
- **School grading policies and portfolio reviews**
- **Norming on expectations for student work across sites**
- **Ways to provide flexibility around earning badges**

These communities are also a great way for districts to share tools, questions, and lessons learned with one another. By planning for these supports in advance, you can help ensure that districts have the resources and collaborative infrastructure they need to implement the program with confidence.

Action 2.10 - Identify Provider for Managing Professional Learning Supports

Past implementation of the XQ-MBS has shown that teacher and leader professional learning is one of the most critical areas of support. You will want to ensure that educators understand:

- the **core purposes** of the badging system
- the full range of **CPEs for each badge** being implemented
- the kinds of **learning activities** students should engage in
- how **modeling practices** play out across different activities
- how to **guide students** in curating their own portfolios
- how to manage the **portfolio logistics**
- how **student feedback** should be provided to support all learners
- how **badge completion** is determined
- how to **formally award badges**
- how to **connect badge completion to grades**

The above list is based on common questions that implementation partners have received from local leaders and teachers but you can fine-tune this list to suit your specific local needs.

A key decision is determining who will provide these professional learning services—and how those services will be funded. Options typically include:

- **A team within the SEA or an external organization**
- **Educational service agencies already operating in the state**
- **Local institutions of higher education**
- **Out-of-state partners with prior XQ-MBS experience**
- **A single statewide provider or different providers for different regions or districts**

For example, Student Achievement Partners (SAP) was an early provider of these kinds of services for early XQ-MBS partner states.

Other partner organizations such as the EdSystems Center at Northern Illinois University, the Kentucky Center for Mathematics at Northern Kentucky University, the Center for Next Generation Leadership at the University of Kentucky and the Regional Math Center at Idaho State University have provided similar services to our partners in the past.

No matter who you partner with, we recommend that you plan and budget for these services early, as they are central to building educator confidence and ensuring high-quality program delivery.

STEP 3 - LAUNCHING AND IMPROVING THE PROGRAM

There are five actions described in this section to help you formally launch and continually improve the implementation of the XQ-MBS in your state:

Action 3.1 - Sustain State and Local Leadership
Action 3.2 - Plan Regular District Leader Check-ins
Action 3.3 - Deliver Programmatic Professional Development
Action 3.4 - Identify Vetted Providers for Tech Solutions
Action 3.5 - Refine Guidance for High-quality Implementation Practices

Appendix B has resources and templates that will help you document your key steps, reflections, and outcomes as you work through these actions.

These actions represent work that ought to be completed during the first year (or two) of program implementation.

Action 3.1 - Sustain State and Local Leadership

As your program expands and new district cohorts come on board, it's important to sustain the leadership capacity you've built at both the state and local levels. Maintaining this momentum helps ensure consistency in vision, support structures, and implementation quality over time.

We recommend that you:

- **Share success stories** on state websites, in interest-holder convenings, and through statewide communications (e.g., email newsletters, webinars, or social media)
- **Offer formal recognition** (e.g., microcredentials, continuing education credit) to teachers, school leaders, district leaders, and SEA staff who contribute meaningfully to the program's success

Action 3.2 - Plan Regular District Leader Check-ins

Regular check-ins with district leaders are essential for identifying what's working, what needs adjustment, and identifying resources that can be shared broadly. Consistency is key.

We recommend deciding in advance:

- **who** will conduct the check-ins
- **how often** they will take place
- **what format** will be used (remote, in-person, hybrid)
- **whether sessions will be recorded** and how
- **how insights** will be captured, shared, and acted upon
- **what expectations** are set for district participation

You may want to partner with regional or state organizations to support these efforts. For example, as we noted at the end of section 2, in Kentucky the Kentucky Center for Mathematics has supported the state department by hosting monthly convenings for district leaders, coordinated logistics, and managed communications around participation. Similarly, EdSystems hosted monthly convenings in Illinois while the Regional Math Center at Idaho State University supported this work in Idaho.

Action 3.3 - Deliver Programmatic Professional Development

In the previous step you planned for professional development support for your teachers. During program implementation, you can continue to use surveys, focus groups, and one-on-one conversations during school visits for instance to identify the most pressing priorities, emerging challenges and lessons learned, and ensure that schedules for offerings are compatible with local work flows. State partners can again play a key role in this work. For example, they can create on-demand videos or slide decks to introduce the program to new educators. You can host these materials in a centralized, state-managed library for easy access.

Action 3.4 - Identify Vetted Providers for Tech Solutions

Technology plays a critical role in supporting XQ-MBS implementation—especially around portfolio management and badge delivery. You can help districts make informed decisions by curating a list of vetted technology providers, including the pros and cons of each option.

You may also want to explore whether:

- **Existing state-level systems** can be leveraged (e.g., SkillStack in Idaho)
- **Grant funding** is available to help districts access higher-cost tools during early implementation

We briefly talk about portfolio management systems and badge delivery systems next.

Portfolio Management Systems

Managing student portfolios can become a bottleneck if the system is too cumbersome or disorganized. While some districts begin with physical portfolios, we recommend (at least in parallel) a digital folder system that allows students to easily scan and upload work and teachers to:

- **Annotate student submissions**
- **Track revisions and feedback**
- **Record summative evaluations**

- **Share work with students and families**

Common suites (e.g., Google Classroom) can certainly be used, while more advanced systems can automate or make many of these tasks more efficient. If a mature implementation of badging is envisioned in a district/school, then the thoughtful use of portfolios is essential to its long-term success.

As some teachers have noted, the portfolio is effectively a means to an end for helping students evaluate and document their own learning progress with the goal of eventually awarding a badge. On the one hand, the badging portfolios may become components of broader learning portfolios in preparation for defenses or exhibitions of learning. On the other hand, portfolios may not have further stand-alone use once badges are awarded since these become the major certification of proficiency.

Thus, choosing an approach for managing the portfolio that supports learning and evidence collection in an efficient, student-centered way in alignment with the badge frameworks and the broader approach to demonstrating learning for students at a school is most important.

Badge Delivery Systems

All participating schools need a way to track badge completion. Some districts use simple spreadsheets to record badges by student and course, including notes about partial completions and next steps. Others use credentialing platforms like SkillStack or systems by organizations like Instructure/Canvas or Credly to track and share badges digitally.

These platforms provide secure storage, mobile access, and integration with portfolios, CVs, and social media—enhancing the visibility and value of student accomplishments. Many systems also support badging for adults, allowing teachers, district leaders, or SEA staff to earn recognition for implementation efforts. This not only models the badging process but can also clarify expectations for high-quality work.

At the local level, be sure to encourage public recognition of student badges—in classrooms, exhibitions, town halls, or other events. Consider borrowing ideas from how schools recognize other academic or sports achievements. Also, ensure families receive communication when students earn badges. If your state manages a public-facing badging portal, you can link to district-level showcases or highlight local stories directly.

Action 3.5 - Refine Guidance for High-quality Implementation Practices

As professional learning expands, it's important to capture lessons learned and turn them into accessible guidance for the field. This can happen both informally (via newsletters, webinars, or social media) and formally (through documents or videos hosted on a state portal).

We suggest creating a structure in which:

- Districts can **manage and share** their own local badging resources
- The state portal **curates or links** to these resources, ensuring relevance and coherence
- Any guidance that appears directly on the state site is **vetted by an internal review team** for quality and clarity

This approach allows for innovation at the local level while maintaining statewide consistency and credibility. Sharing across state implementations can also support ongoing innovation and learning.

STEP 4 - SUSTAINING THE PROGRAM

There are six actions described in this section to help you sustain and expand the XQ-MBS over time:

Action 4.1 - Expand Programmatic Professional Development
Action 4.2 - Continue and Expand Best Practices
Action 4.3 - Engage Postsecondary Representatives in Building Value for Badges
Action 4.4 - Plan for Policy Changes
Action 4.5 - Participate in Formal Evaluations of Impact
Action 4.6 - Identify Ongoing Funding for Program

Appendix B has resources and templates that will help you document your key steps, reflections, and outcomes as you work through these actions.

These actions represent work that likely can be completed after the first year (or two) of program implementation.

Action 4.1 - Expand Programmatic Professional Development

This is a continuation of Action 3.3 in the previous section. As more districts join the program, you'll need to refine and expand professional development offerings. Over time, you'll likely have multiple cohorts of teachers and leaders with different levels of experience, each with unique needs.

You can use surveys, focus groups, and one-on-one conversations to identify the most pressing priorities. In general:

- **New district leaders** often need support with onboarding teachers, providing examples of strong practice, managing portfolios and feedback, and supporting instructional shifts.
- **Experienced district leaders** may focus on sustainability—funding, collecting impact data, scaling the model, and ensuring the badges hold value in formal systems.

State partners can play a key role in this work, potentially helping to group districts together so that onboarding for new participants can be done in a centralized way. Other state-level convenings on critical topics can help maintain momentum.

Action 4.2 - Continue and Expand Best Practices from Implementation Phase

As the program matures, it's important to continue, refine, and expand best practices that were established during earlier implementation. This includes sustaining relationships with district leaders, advisory team members, and partners in both academia and industry.

You may want to highlight progress and success stories from your state through conference presentations, local and national convenings, or media outreach. For example, pilot states and their partners have presented at NCSM, NCTM, NCSA, and AERA, among others. Sharing these stories helps sustain momentum and visibility for the math badging program—both within your state and nationally.

As you build up a cadre of teachers and leaders who have at least one or two full years of implementation experience, consider also establishing teacher mentoring programs that connect experienced educators with those new to the program

Action 4.3 - Engage Postsecondary Representatives in Building Value for Badges

As the XQ-MBS grows, more people will ask how badges hold value beyond the classroom. To answer this question, you'll need to work closely with postsecondary institutions and industry partners and gather credible evidence of impact. We recommend collaborating with postsecondary representatives on your advisory team, and commissioning targeted studies to build the case for recognition of badges. For example:

- **Cross-district evaluations** of student work by both K12 educators and higher education faculty to build shared expectations around rigor and proficiency
- **Landscape reviews** of relevant policies (e.g., use of badges on transcripts, admissions practices)
- **Independent alignment studies** to validate internal state-level analyses

You can refer to XQ's Research and Evaluation Guide as a starting point. In Illinois, for instance, a panel of postsecondary representatives co-developed a review process for student portfolio work to answer questions such as:

- Do these badges reflect the intended curricular depth and scope?
- Does the student work demonstrate readiness for graduation and college entry?
- Would your institution accept student portfolios or badges as evidence of proficiency?
- What additional reflections or concerns do you have?

This type of engagement not only strengthens the credibility of the badges but also fosters postsecondary buy-in through a process of co-creation and transparency.

Action 4.4 - Plan for Policy Changes

Innovative programs like the XQ-MBS often encounter barriers in policies that weren't designed with flexible, student-centered learning in mind. To support longer-term sustainability, you'll want to:

- **identify policies** at the state, district, or school level that may influence implementation
- understand **which policies are changeable**, which are not, and what the change process looks like
- clarify **who needs to be involved**, and **how long change efforts might take**

It's also important to explore:

- **why** specific changes are needed and what benefits they may unlock
- **what unintended consequences** might arise, and how to mitigate them
- **what legal or strategic workarounds** may be available if policy change isn't feasible

Because policy change often requires multi-year planning, early conversations with state leadership are essential. For example, you may need to advocate for:

- inclusion of badges on **transcripts**
- acceptance of badges toward **local graduation requirements**
- use of badges in **credit recovery** or **placement decisions**

Including examples of successful policy shifts from other states or districts can help ground these discussions in concrete possibilities. XQ's The Future is High School report summarizes 10 policy actions that states can take and surveys the landscape of implementation of these actions as of 2025.

Action 4.5 - Participate in Formal Evaluations of Impact

To understand the full impact of the XQ-MBS, we recommend engaging in a staged evaluation strategy, starting with formative feedback in the early years and moving toward summative evaluations as the program matures.

You may consider working with an independent research organization such as a university-based center or a nonprofit organization. These partners can help design studies, collect data, and ensure methodological quality. In some university cases, graduate students with faculty oversight may also support aspects of this work while in some nonprofit cases, interns with staff oversight may provide similar support.

While data collection does place some demands on teachers, students, and families and needs to comply with state and local policies, it is critical for understanding whether the program is meeting its goals and how to improve over time.

Past evaluations coordinated by XQ have used multiple sources of data, including:

- Student and teacher surveys
- Student and teacher focus groups
- Informal feedback during school visits
- Classroom observations
- District implementation reports
- Badge tracking and completion data
- Student grades and assessment results

Not all of these approaches may be feasible in your context. You should tailor your evaluation design to the most relevant research questions and the level of evidence needed for your use case.

Your advisory team can help shape the design in collaboration with your external partner. Table 4.1 outlines example research questions used in prior XQ-MBS evaluations across domains such as engagement, rigor, grading, and sustainability. As illustrated in the aforementioned XQ's Research and Evaluation Guide, these can also be expressed in clusters of questions related to different interest holder groups, in particular students, teachers, and district leaders.

Table 4.1 Sample Research Questions for XQ-MBS Implementation

Area	Focal Aspect	Core Research Questions
1	Engagement	• What strategies do teachers use to engage students ? • How does math badging affect student engagement and confidence?
2	Rigor	• Is there evidence of rigor in classroom instruction and student work? • How do teachers and students perceive the rigor in badging classrooms?
3	Badges	• How many students are earning badges across which courses? • What happens if a student doesn't complete a badge? • Do students understand what's required to earn a badge? • Do students and teachers see the badging process as meaningful and fair?
4	Grading	• How are grades assigned, and how do they relate to badges? • How is grading different in badging vs. non-badging classrooms?
5	Assessments	• How do teachers use assessments to guide instruction and award badges? • Do students understand how assessments, badges, and grades connect? • Do teachers agree on the quality of student work in portfolios? • How do students interpret their growth over time (e.g., pre/post measures)?
6	Program Supports	• Do teachers have what they need to plan and teach effectively? • Do teachers have what they need to use assessments well? • Do teachers have clear guidance on how to award badges?
7	Program Impact	• How has the program changed teaching practices and teacher perceptions? • How has it affected students' learning experiences and self-perceptions? • What impact has the program had on student achievement? • Has math teaching/learning become easier/harder because of the program?
8	Long-term Outcomes	• Do students who engage consistently in math badging programs go on to take more math in high school than other students? • Do students who engage consistently in math badging programs go on to careers who are notably dependent on knowledge and skills in math? • Do students who engage consistently in math badging programs perform better in other external assessments (e.g., interim or state summative assessments) than other students?
9	Scalability & Sustainability	• What's needed to make the program scalable and sustainable in the state? • What major barriers need to be addressed and what resources can be leveraged to do so? • Which resources have been most helpful, and what else is needed?

Action 4.6 - Identify Ongoing Funding for Program

Long-term sustainability of the XQ-MBS depends on ongoing funding—for staffing, technology, professional learning, and implementation support. Evaluation findings can be a powerful tool in making the case for continued investment.

You will want to consider what type of evidence resonates with different funders:

- Some may prioritize **compelling narratives and testimonies** from students, teachers, and families.
- Others may require **quantitative impact data**, such as evidence of improved math scores on standardized assessments (e.g., local interims, state summatives, or postsecondary readiness assessments) or increased rates of badge completion.
- Many may seek a **blend of both**, highlighting broad impact with real stories of change.

States and districts have used a range of mechanisms to pursue funding, including:

- **Federal Relief Funds:** Leveraging specifically appropriated federal funds such as ESSER (Elementary and Secondary School Emergency Relief) or GEER (Governor's Emergency Education Relief) funds to support innovation and learning recovery during COVID
- **State and Local Appropriations:** Allocating dollars from state budgets (e.g., through legislative line items) or district general funds to prioritize student-centered credentialing initiatives
- **Competitive Innovation Grants:** Applying for federal or state grants that target education innovation, workforce alignment, or equity in STEM—such as EIR (Education Innovation and Research), Perkins V Reserve Funds, or NSF-funded education pilots
- **Philanthropic Partnerships:** Partnering with private foundations focused on education, equity, or postsecondary success (e.g., the Gates Foundation, Carnegie Corporation, Charles Stewart Mott Foundation, local community foundations)
- **Braided Funding Strategies:** Coordinating funding across agencies (e.g., education, workforce development, and higher education) to align shared goals and pool resources—such as combining Workforce Innovation and Opportunities Act (WIOA) funds with state-level innovation or equity initiatives
- **Public-Private Partnerships:** Engaging employers, industry consortia, or regional workforce boards to co-invest in skills-focused programs that align with local economic development strategies
- **In-kind Contributions:** Identifying non-monetary support such as staff time, facilities, data systems, or shared services from partnering institutions

We recommend working with both internal budget teams and external grant partners to map out short- and long-term funding pathways. Early planning in this area ensures continuity of support as the program scales. This is especially important whenever there are major changes at the federal policy level, which can affect the availability of select funding streams.

GLOSSARY

Term	Meaning
Assessment	A variety of tools and processes used to understand student learning and progress, including formative feedback during learning and summative evaluation of performance.
Badge	A key component of the XQ-MBS that represents a coherent set of Content and Practice Expectations (CPEs). A badge certifies that a student has demonstrated the targeted knowledge and skills and can be recorded as a distinct unit of learning.
Badge Catalog	The full set of badges available within the XQ-MBS, including how badges relate to one another and how they can be grouped into different pathways or integrated into existing courses.
Badge Framework	A detailed description of a specific badge that outlines its Content and Practice Expectations (CPEs), indicators (examples of student tasks), suggested instructional emphases, and guidance for collecting and evaluating evidence of mastery.
Competency-Based Education (CBE)	An approach to teaching and learning in which students progress by demonstrating mastery of clearly defined competencies, rather than by seat time. CBE can require changes to schedules, grading, and pathways to support this mastery focus.
Content and Practice Expectation (CPE)	Specifies, at a broader level, the knowledge, skills, and competencies students must demonstrate to earn a badge. Each badge contains between 3 and 11 CPEs.
Graduation Pathway	Policies or structures that allow students to meet graduation requirements through demonstrations of learning (such as badges or performance assessments) in place of, or alongside, traditional seat-time-based course credits. See also Pathway.
Implementation Cohort	A group of districts or schools that begin XQ-MBS implementation during the same period and participate together in shared learning activities, onboarding, and professional development.
Indicator	Specifies, at a more detailed level, the kinds of tasks or activities students should be able to complete to show mastery of a particular CPE. Each badge typically includes 5–25 indicators, or about 2–3 indicators per CPE.
Learning Principles	The core ideas that guide the instructional vision of the XQ-MBS, including relevance, engagement, and skill-building, and that inform how teaching and learning should look in math badging classrooms.
Mastery-Based Learning	An approach in which students progress by demonstrating that they have met clearly defined learning expectations, often through multiple opportunities to show evidence of learning and receive feedback, rather than by time spent in a course alone.

Term	Meaning
Microcredential	A focused recognition of a specific set of skills or competencies, often smaller than a traditional course credit, that can be documented on transcripts or digital records and used to signal readiness to postsecondary or workforce partners.
Pathway	An organized sequence of badges that builds over time, allowing students to deepen and extend their mathematics learning by progressing through related content and skills. See also *Graduation Pathway*.
Portfolio	A curated collection of student work products used to document and reflect evidence of learning. In the XQ-MBS, portfolios help demonstrate mastery for specific badges.
Portfolio System	The set of processes and tools used to collect, organize, review, and store student work products as evidence for awarding badges, including protocols for calibration, feedback, and decisions about sufficiency of evidence.
Professional Learning Community (PLC) or Community of Practice (CoP)	A structured group of educators who meet regularly to collaborate around shared goals, examine student work and data, troubleshoot implementation challenges, and co-develop practices and resources related to math badging.
Readiness / State Readiness	The degree to which a state or district has the policy conditions, leadership capacity, resources, and local interest needed to implement and sustain the XQ-MBS effectively.
Stakeholder	A person or group directly affected by, or involved in, an educational program or decision (for example, students, families, educators, school and district leaders, community partners, and policymakers).
Standards-Based Grading	Grading that reports how well students meet specific learning standards, rather than comparing students to one another or relying solely on overall course averages and traditional A–F grades.
XQ Math Badging System (XQ-MBS)	The overall framework of resources, tools, and structures developed by XQ to organize, support, and recognize math learning through badges at the high school level, including guidance for implementation at state and district levels.

APPENDIX A
NUMBER OF CPEs AND INDICATORS PER BADGE

Badge	Title	CPEs	Indicators
M100	Quantitative Reasoning	8	19
M101	Linear Equations: Concepts and Skills	4	10
M102	Modeling with Linear Functions and Equations	10	23
M103	Modeling with Functions of Quadratic Type	9	17
M104	Modeling with Functions of Exponential Type	9	17
M111	Modeling with Data: One-Variable Measurement Data	7	18
M112	Modeling with Data: Two-Variable Measurement Data	8	20
M113	Modeling with Probability	6	11
M151	Modeling with Geometry	8	13
M152	Reasoning and Proof Through Congruence	11	25
M153	Reasoning and Proof Through Similarity	8	18
M154	Coordinate Geometry	5	12
M155	Right Triangle Trigonometry	3	6
M201	Function Concepts	6	13
M202	Rational Exponents and Complex Numbers	3	5
M203	Polynomial and Rational Expressions, Functions, and Equations	6	13
M204	Exponential and Logarithmic Functions and Equations	4	12
M205	Trigonometric Functions	5	13
M211	Data Management and Visualization	8	17
M212	Predictive Modeling	8	22
M213	Bayesian Reasoning and Probability Theory	5	14
M214	Statistical Error and Predictive Model Validation	5	16
M215	Inference and Making Conclusions	5	17

APPENDIX B
DISCUSSION AND PLANNING TEMPLATES

The templates in this appendix should be seen as starting suggestions for how to structure internal conversations within the state agency. They are designed to help state teams, advisory groups, or cross-agency partners engage more deeply with the planning and implementation of the XQ-MBS. Below is a copy of the table of contents for this guide for ease of connecting the templates within the appendix to the steps discussed in the guide.

TEMPLATES FOR STEP 1 - EVALUATING PROGRAM FIT

TEMPLATE S1.1

Meeting: *List date and location (note in-person vs. virtual meeting, region(s) covered, connections (e.g., math advisory)*
Participants: *List persons and roles (list names, roles, and whether they represent state, district, school, etc.)*
Next Steps: *List next steps (record 1–3 concrete actions with what/who/by when)*

Template with Guiding Questions for Alignment Review for *Action 1.1 - Review Alignment of the Math Badging Program With Priorities and Policies*

What are the current state priorities for high school math and postsecondary readiness?	Reflections / Responses
• What are the most important educational priorities we are trying to address from the state perspective? • What do you know about important contextual factors for high school mathematics learning? For example: - How do your students perform on state assessments? - What are common high school pathways for mathematics learning? - What proportion of students go on to careers that require mathematics? - What kinds of badges / credentials, dual credits, and CTE offerings exist in high school? • What are the major employers in your area and the math needs in those contexts? • What do public interest-holders advocate for the most when it comes to high school math learning? • Which state policies are most relevant for considering badging? Are there changes planned for these? • Other (please add)	

What are your initial reactions regarding the value and relevance of the XQ-MBS for your state?	Reflections / Responses
In what ways might the XQ-MBS, in line with your priorities: • support or accelerate changes to mathematics teaching and learning? • improve teacher outcomes, such as: - supporting or accelerating teacher professional learning? - incentivizing important instructional shifts to more project-based, deeper learning? • improve student outcomes such as: - increasing their perception of the value of mathematics for a broad array of future studies and careers? - improving performance on state or readiness assessments? - removing access barriers for high school or postsecondary opportunities? • Other (please add)	
For messaging, name three statements that summarize why the XQ-MBS is worth exploring.	**Reflections / Responses**
We want to make the change to learning math with badging using the XQ-MBS because...	1. XXX 2. XXX 3. XXX

TEMPLATE S1.2
STATE READINESS SELF-ASSESSMENT

Purpose:
This template is designed to help you and your advisory teams reflect on current conditions that support or limit implementation of the XQ-MBS. Use this to guide internal strategy, advisory discussions, or readiness conversations with districts.

Instructions:
For each item below, rate the current state from 1 to 4. Then add comments or examples.

1 = Not in place
2 = Emerging / Partial
3 = Mostly in place
4 = Fully in place

You may wish to complete the tool individually, then discuss it as a team.

I. Vision and Strategic Alignment

Question	Rating	Comments or Examples
Our SEA has a clear vision for student-centered math learning and innovation.		
We can articulate how the XQ-MBS aligns with existing state goals or reform efforts.		
We have a defined rationale for why high school math innovation is a current priority.		
Total Score	**/ 12**	

II. Leadership Capacity and Team Readiness

Question	Rating	Comments or Examples
Our internal leadership team includes individuals with authority and capacity to lead this work.		
We have cross-functional expertise to support program design, policy alignment, and implementation.		
We have experience supporting district innovation or piloting new instructional models.		
Total Score	**/ 12**	

III. Culture of Innovation and Continuous Learning

Question	Rating	Comments or Examples
We have a track record of piloting or supporting competency-based or mastery learning models.		
Our agency supports iterative learning through feedback, evaluation, and reflection.		
We are open to challenging traditional course sequences and credentialing approaches.		
Total Score	**/ 12**	

IV. District Engagement and Partnerships

Question	Rating	Comments or Examples
We have existing relationships with districts that are ready to explore or adopt XQ-MBS.		
We have a way to identify and communicate with district leaders aligned to this work.		
We engage regularly with partners in postsecondary education, CTE, or industry.		
Total Score	**/ 12**	

V. Resources and Policy Flexibility

Question	Rating	Comments or Examples
We have access to or can allocate funding for innovation and implementation support.		
We have policy flexibilities that could support alternative credentialing (e.g., graduation pathways, transcript innovation).		
We are aware of potential policy barriers and have strategies to address them.		
Total Score	**/ 12**	

VI. Readiness to Launch and Scale

Question	Rating	Comments or Examples
We can commit to supporting an initial cohort of districts for at least 1–2 years.		
We have capacity to support data collection, technical assistance, or evaluation activities.		
We have a plan to sustain or grow the program beyond the initial launch.		
Total Score	**/ 12**	

Total Scores

Section	Section Score
I. Vision and Strategic Alignment	/ 12
II. Leadership Capacity and Team Readiness	/ 12
III. Culture of Innovation and Continuous Learning	/ 12
IV. District Engagement and Partnerships	/ 12
V. Resources and Policy Flexibility	/ 12
VI. Readiness to Launch and Scale	/ 12
Total Score	**/ 72**

Priority Actions Needed

Section	Priority Actions	Deadline
I. Vision and Strategic Alignment		
II. Leadership Capacity and Team Readiness		
III. Culture of Innovation and Continuous Learning		
IV. District Engagement and Partnerships		
V. Resources and Policy Flexibility		
VI. Readiness to Launch and Scale		

Optional Final Reflection

- What stands out as a key strength of our current context?
- What areas might need more attention or support before we move forward?
- What do we most need to learn in the next 3-6 months?

TEMPLATES FOR STEP 2 - PREPARING TO LAUNCH THE PROGRAM

TEMPLATE S2.1
FULL IMPLEMENTATION PLAN – XQ MATH BADGING SYSTEM

This template allows you to map out the overall implementation plan for the XQ-MBS. There is one template for each of the four steps. Adapt as needed for your context.

Step 1 - Evaluating Program Fit

Description	Lead Person/ Team	Key Partners	Deadline	Resources Needed	Status	Comments
Review alignment of XQ-MBS with current state policies and priorities	SEA Innovation Lead	Policy Director, Curriculum Director	Planning Year Q1	Program overview, policy review tool		
Create an exploratory advisory team	SEA Project Manager	Math Lead, District Reps	Planning Year Q1	List of interest-holders, meeting invites		
Conduct evaluation of fit using readiness tools and badge review	Advisory Team Lead	Curriculum Specialists	Planning Year Q2	XQ badge frameworks, readiness rubric		
Review insights from other states	SEA Research Lead	External Evaluator	Planning Year Q2	Summary documents from pilots		
Identify candidate districts for early adoption	District Engagement Lead	Regional Coop Directors	Planning Year Q3-4	Readiness data, outreach templates		
Estimate budget parameters and guardrails	SEA Finance Officer	Innovation Lead, External Funders	Planning Year Q1-4	Budget models, prior cost data		

Note: Status = Not yet started, In progress, Completed.

Step 2 - Preparing to Launch the Program

Description	Lead Person/ Team	Key Partners	Deadline	Resources Needed	Status	Comments
Expand advisory team to include postsecondary and industry reps	SEA Program Director	CTE Lead, Higher Ed Liaison	Year 1 Q1	Invite list, meeting schedule		
Solidify statewide vision and logic model	SEA Innovation Lead	Comms, Policy, Data teams	Year 1 Q1	Theory of Action template, state goals		
Develop criteria for high-quality implementation	Curriculum Director	Advisory Team	Year 1 Q2	XQ rubrics, local models		
Select provider for professional learning and PLCs	SEA Procurement Lead	SAP, Local Providers	Year 1 Q2	Provider profiles, contracts		
Engage district leaders and hold planning workshops	District Engagement Lead	Regional Support Staff	Year 1 Q1-2	Workshop decks, comms toolkit		
Plan supports for districts and professional learning	Professional Learning Coordinator	SEA Coaching Team	Year 1 Q2-4	PD menu, implementation guides		

Note: Status = Not yet started, In progress, Completed.

Step 3 - Launching and Improving the Program

Description	Lead Person/ Team	Key Partners	Deadline	Resources Needed	Status	Comments
Sustain leadership and momentum at state and local levels	SEA Director	District Leadership	Year 2 Q1	Recognition plans, newsletters		
Schedule regular district leader check-ins	Program Manager	Regional Cooperatives	Year 2 onward	Calendar, agendas, note capture tool		
Expand professional development based on feedback	PL Coordinator	Teacher Leaders, PLC Facilitators	Year 2 Ongoing	Needs survey, new training modules		
Vet and recommend technology providers	SEA Tech Integration Lead	IT, Curriculum Teams	Year 2 Q2	Tech criteria, provider list		
Refine implementation guidance based on field insights	Curriculum Director	Advisory Team	Year 2 Q3-4	Updated rubrics, case studies		

Note: Status = Not yet started, In progress, Completed.

Step 4 - Sustaining the Program

Description	Lead Person/ Team	Key Partners	Deadline	Resources Needed	Status	Comments
Continue best practices and highlight success stories	SEA Communications	Program Leads, District PR	Year 3 onward	Storybank, media plan		
Engage postsecondary to validate badge value	Higher Ed Liaison	University Partners, CTE Reps	Year 3 onward	Review panels, sample portfolios		
Plan for policy changes to support long-term adoption	SEA Policy Director	Legal Team, Advisory Board	Year 3 onward	Policy map, advocacy briefs		
Participate in formal evaluations of impact	Research & Evaluation Lead	External Evaluators	Year 3 onward	Surveys, focus groups, analysis plans		
Identify sustainable funding sources	Finance Officer	Grant Writers, Philanthropy Partners	Year 3 onward	Funding map, case statement		

Note: Status = Not yet started, In progress, Completed.

TEMPLATE S2.2

This template allows you to plan for and capture key opportunities for interest-holder engagement around the XQ-MBS. The first three rows are made-up (but realistic) examples. Adapt as needed for your context.

Template for Tracking Opportunities for *Action 2.7 - Engage District Leaders Around the Program*

Opportunity	Date(s)	Partners	Structure	Activities / Materials
Quarterly in-person meetings of regional educational service centers (ESS)	April 15-30	District Leaders ESS Contacts	Information sharing and basic Q&A: Overview of program, relevance for student learning and grading	Brief overview talk (10 mins), overview flyer, set of possible FAQs with answers (internal); open discussion
Statewide virtual information session on XQ-MBS	May 23	State math leaders District superintendents Curriculum directors	Live webinar with Q&A (recorded for later viewing)	Short presentation on XQ-MBS goals and structure, panel of early adopter district leaders, slide deck, one-page overview, link to interest survey for follow-up conversations
Regional implementation planning workshop	June 5–12	Regional service centers District implementation teams (math coordinators, principals, teacher leaders)	Half-day in-person working session	Facilitated review of badge frameworks, draft badge-to-course maps, small-group planning templates, sample district implementation plan, exit ticket capturing next steps and support needs

TEMPLATE S2.3

This template allows you to plan out the kinds of professional learning opportunities around the program. These could be opportunities for teachers that districts could purchase or opportunities for district leaders that you could provide directly (budget permitting). The first three rows are made-up (but realistic) examples. Adapt as needed for your context.

Template for Professional Development Planning for *Action 2.9 - Plan Supports for District Leaders and/or Action 2.10 - Identify Provider for Managing Professional Learning Supports*

Audience	Primary Learning Goal	Venue / Mechanism	Duration / Dates	Activities / Materials	Funding Needed	Possible source
Teachers	Teachers familiarize themselves with portfolios (management + support)	In a math badging Boot Camp	1 day during the summer window	Use portfolio camp materials provided by XQ, demo local portfolio management systems	Extra pay over the summer to prepare to use new materials (approx. $175/ teacher)	District PD budget
District Leaders	District leaders learn how to best support their teachers in making the necessary educational changes in classrooms	4-part virtual series of 30-minute webinars + open forums	1 hour (before start of year, 2 months in, mid-year, late spring)	Use examples from experienced district leaders, bring these in as expert coaches, lift up effective strategies from this guide	None if developed in-house	Math chair discretionary budget
Teachers and Instructional Coaches	Develop shared understanding of badge-aligned assessment practices, including defining proficiency, using indicators, and giving feedback through portfolios	Hybrid learning cycle: initial virtual session, school-based PLC work, and follow-up virtual debrief	Initial 90-minute virtual session in August; two 45-minute PLC meetings during September; 60-minute debrief in early October	Introduce sample badge frameworks and annotated student work; engage participants in calibrating proficiency judgments; model feedback on portfolio artifacts; provide a calibration protocol and reflection template for local PLC use	Stipends for teacher participation outside contract time (approx. $100/ teacher total)	State innovation grant funds or regional service center professional learning budget

TEMPLATES FOR STEP 3 - LAUNCHING AND IMPROVING THE PROGRAM

TEMPLATE S3.1

This template is for planning simple, informal check-ins with district leaders. We recommend brief surveys, informal conversations, or regional focus groups for this. The first four rows are made-up (but realistic) examples. Adapt as needed for your local context.

Planning for Check-ins

Meeting: *List date and location (include format (virtual/in-person), region, and which opportunity this meeting connects to (e.g., 'Regional focus group – East Region, March 12, Virtual'))*

Participants: *List persons and roles (include district, role, and whether they are in an early-implementation, expansion, or exploration phase (e.g., 'SchoolName – HS principal (early implementation)')*

Next Steps: *List next steps on the basis of these discussions, including timelines and who is responsible (use 'what / who / by when' for each next step (e.g., 'Share exemplar portfolio tasks with district X / state math lead / by April 15').*

After each checkin, capture 1–2 key themes across districts and 1 concrete action you will take at the state level (e.g., new guidance, resource, or adjustment to professional development).

Questions for Check-ins

The following questions should be asked consistently in each of these settings:

- **What aspects of the program are working for you and your teachers?** *Prompt for specific examples (e.g., particular badges, portfolio routines, or communication strategies).*
- **What aspects of the program are challenging for you and your teachers?** *Probe for both structural issues (scheduling, grading, tech) and instructional issues (tasks, assessment, student engagement).*
- **What additional support do you need from the state?** *Encourage leaders to prioritize their top 1–2 support needs so follow-up is feasible.*
- **What additional ideas do you have to ensure implementation success?** *Ask if anything they are doing locally could be shared with other districts as a promising practice.*

Template for Tracking Check-in Opportunities for *Action 3.2 - Plan Regular District Leader Check-ins*

Opportunity	Dates	Required Materials
Regional focus group (pilot and non-pilot districts mixed)	November 12-17 (mid-semester) and March 23-27 (pre-planning for next year)	Focus group protocol with 4–6 core questions, note-catcher for themes, short slide with state-level updates, template for capturing concrete next steps per district
District leader 1:1 check-ins (virtual or phone)	Monthly (15–20 minutes per district; schedule during weeks 3 and 8 of each quarter)	Brief agenda with 3–4 core questions, simple tracking sheet (per district) for wins, challenges, and requested supports, follow-up email template summarizing key points
Short implementation pulse survey (district and school leaders)	End of fall and spring semesters; optional mini-pulse after first 8 weeks of launch	Survey draft with ≤10 items (mix of rating scales and 2–3 open-ended items), plan for sharing results back (one-page summary template), email invitation and reminder templates
Virtual “office hours” for district leads	Every 6–8 weeks during the first year of implementation	Standing video link, short slide with common issues seen across districts, running FAQ document updated after each session

TEMPLATE S3.2
IMPLEMENTATION ISSUE AND BRIGHT SPOT LOG

This template is designed to categorize, and act on implementation challenges and successes emerging during the first year, drawing from check-ins, professional development sessions, and informal feedback. The first three rows are made-up (but realistic) examples. Adapt as needed for your local context.

Implementation Issues and Bright Spot Log for *All Actions in Section 3*

Date / Source	District(s) / Role(s) Involved	Type	Area of Implementation	Description of Issue or Bright Spot	Immediate State Response	Longer-Term Action / Product	Owner / Timeline
October 10 – Regional focus group (East)	DistrictName – HS math chair; DistrictName – principal	Challenge	Portfolios	Teachers report confusion about how much evidence is "enough" to award a badge and are using very different expectations across schools.	Share sample portfolio artifacts and existing XQ guidance; schedule joint calibration sessions for interested districts.	Develop a short "portfolio sufficiency" guidance document with examples to include in next implementation update.	State math assessment lead – by Dec 15

Date / Source	District(s) / Role(s) Involved	Type	Area of Implementation	Description of Issue or Bright Spot	Immediate State Response	Longer-Term Action / Product	Owner / Timeline
November 3 – District leader 1:1 (virtual)	DistrictName – curriculum director	Bright spot	Professional Learning	District created monthly math badging PLCs where teachers co-design tasks and review student work; early signs of higher teacher confidence and student engagement.	Ask district to document PLC structure and sample agendas; invite a teacher leader to share at next CoP convening.	Turn PLC model into a 1–2 page case example to share statewide and feature in upcoming webinar.	Innovation specialist – draft by Jan 10
January 22 – Fall implementation survey	Multiple districts – superintendents and HS principals	Challenge	Tech Platform	Several districts report their current LMS does not easily display badges to students and families, leading to confusion about progress and recognition.	Compile list of specific LMS platforms mentioned; provide quick tips or workarounds where available.	Explore 1–2 badge-friendly tech solutions and create comparison brief for districts considering platform shifts.	EdTech coordinator – initial brief by Mar 1

TEMPLATES FOR STEP 4 - SUSTAINING THE PROGRAM

TEMPLATE 4.1

This template is designed to support the tracking of postsecondary institutions and potential employers in understanding and co-building the value of math badges. The first three rows are made-up (but realistic) examples. Adapt as needed for your local context.

Postsecondary Organization Tracking Template for *Action 4.3 – Engaging Postsecondary Representatives in Building Value for Badges*

Postsecondary Org /Employer	Potential Value of Engagement	Current Level of Engagement	Evidence of Engagement	Next Steps / Responsible Party	Timeline
State University – College of Education	Aligning badges with dual enrollment math courses	Initial	Participated in advisory meeting	Schedule follow-up to discuss transcript integration	March 20XX
Local Tech Employer Consortium	Validate data science badge relevance for workforce	None	N/A	Invite representative to advisory group	May 20XX
Community College System	Recognize badges for placement in credit-bearing math courses	Moderate	Ongoing discussions with academic affairs	Formalize MOU on placement policies	Sept 20XX

TEMPLATE 4.2

This template supports the cataloging of different programmatic goals and required relationships that need to be established to complete these goals. The first three rows are made-up (but realistic) examples. Adapt as needed for your local context.

Programmatic Goals and Relationships for Action 4.4 – Plan for Policy Changes and *Action 4.6 – Identify Ongoing Funding for Program*

Policy / Funding Area	Current Status	Desired Future State	Potential Barriers	Key Allies / Champions	Next Steps	Timeline
High school transcripts include badges	Not currently included	Transcript reflects both credits and badges	Requires approval from State Board	State Board policy chair	Draft policy memo	Sept 20XX
Dedicated funding stream for math badging PD	Funding to expire by end of school year	State budget line item for ongoing PD	Competing budget priorities	Legislative education committee staff	Meet with committee staff to present data	Nov 20XX
Employer partnerships for STEM badges	Ad hoc partnerships	Formal co-investment agreements with employer consortia	Varied employer interest	Regional workforce boards	Pilot employer recognition agreements	Jan 20XX

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