

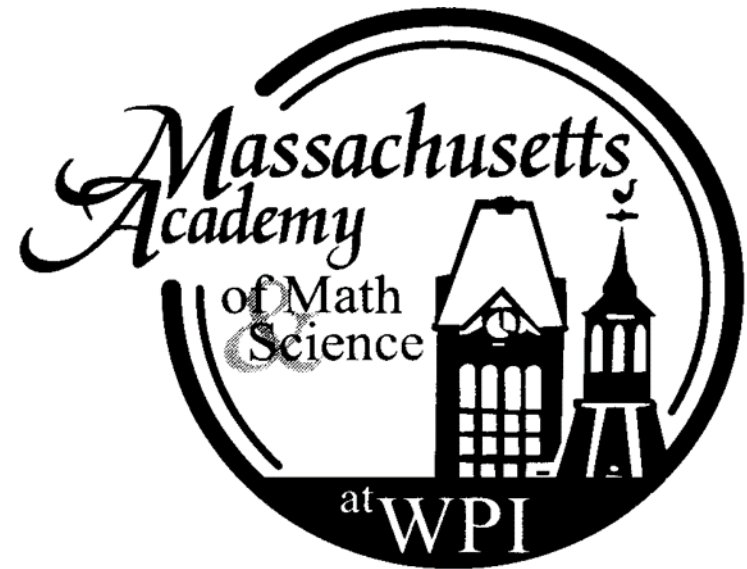
SCHOOL GROWTH PLAN

MASS ACADEMY OF MATH AND SCIENCE

2024-2027

SCHOOL COUNCIL MEMBERS

Anne Ludes	Director
Maureen Chase	Faculty
Kristen Small	Faculty
Kweku Akese	Class of 2024 Student
Alex Chen	Class of 2024 Student
Krishna Patel	Class of 2024 Student
Naga Vikram	Class of 2024 Student
Emmanuel Akese	Class of 2024 Parent
Lijian Yu	Class of 2024 Parent
Sheri Zeng	Class of 2024 Parent
Erica Dong	Class of 2025 Student
Lindsey Paradise	Class of 2025 Student
Kayla Vallecillo	Class of 2025 Student
Anil Gupta	Class of 2025 Parent
Aditi Jain	Class of 2025 Parent
Jeanie Lu	Class of 2025 Parent



Our Mission

The mission of the Massachusetts Academy of Math and Science is to prepare students to be leaders in global innovation by engaging them in rigorous, relevant, and integrated and collaborative learning experiences with a STEM focus, and by incorporating the liberal arts and authentic research in a community that is committed to the following:

- Life-long learning, by providing the tools, skills, and strategies for students to engage actively in their own education
- Dynamic and evolving curricula, which are project-based, interactive, and technologically advanced
- Excellence and innovation in education, thereby serving as a model and providing resources for other schools in the Commonwealth of Massachusetts

Core Values of the Academy

- Collaboration
- Intellectual Curiosity
- Perseverance
- Student-Centered Learning
- Project-Based Learning
- A Supportive Community-Based Environment

Beliefs about Learning

- All students have the potential to achieve.
- Students learn best when given the opportunity to teach others in a collaborative environment.
- Students acquire a deeper knowledge through interactive project-based learning experiences.
- Optimal learning occurs in a safe, supportive community that maintains high expectations.

Vision of the Graduate

The Mass Academy Graduate is:

- Forward-Thinking
- Innovative
- Inquisitive
- Confident

Habits of Mind

At the core of all learning are the following habits of mind:

- Constructive acceptance and use of feedback
- Effective management of time and meeting of deadlines
- Consistent and active contribution of knowledge, opinions, and skills
- Consistent and active work towards group goals
- Being prepared and organized for class

School Growth Plan

Goal 1

<p style="text-align: center;">Statement of Need</p> <p>What student need do you hope to address with this action plan?</p>	<p>Although Mass Academy now has a documented curriculum in a consistent format, the school may be missing an important opportunity to think comprehensively about their unique program and shaping students' habits of mind as scientists, researchers, citizens of the world, and future leaders. Because Mass Academy students experience a nearly homogenous program, there are unrealized possibilities of resonance between the different subjects and interdisciplinary projects.</p>
<p style="text-align: center;">Statement of Goals/Objective</p> <p>What is the goal of this action plan? This should be stated in terms of a measurable outcome.</p>	<p>By June 2026, curriculum units will be revised to include any cross-curricular relevance to other units being taught at Mass Academy and indicate the ways in which the content areas will coordinate their learning experiences for students. Additionally, all units will be evaluated using Mass Academy's Anti-Bias Checklist.</p>
<p style="text-align: center;">Theory of Action</p> <p>How will this Goal/Objective address the student need?</p>	<p>Now that Mass Academy has a written curriculum for all courses that are documented in the same format across all content areas, we can begin taking this work to the next level to make improvements aligned with our mission of providing <i>rigorous, relevant, and integrated and collaborative learning experiences</i> and begin to identify and/or create opportunities for cross-departmental collaboration and co-planning. This would allow Mass Academy to improve the school experience for students by potentially reducing stress, creating more time for student support, and making learning more inquiry-based and authentic.</p>
<p style="text-align: center;">Alignment</p> <p>How is this aligned to the NEASC Standards for Accreditation.</p>	<p>This goal aligns with Standard 1: Learning Culture. Specifically, this goal addresses Principle 1.1, <i>"The school community provides a safe, positive, respectful, and inclusive culture that demonstrates a commitment to diversity, equity, inclusion, and belonging."</i></p> <p>This goal also aligns with Standard 2: Student Learning. Specifically, this goal addresses Principle 2.2, <i>"There is a written curriculum in a consistent format for all courses in all departments that includes units of study with guiding/essential questions, concepts, content, and skills and integrates the school's vision of the graduate."</i></p> <p>This goal also aligns with Standard 3: Professional Practices. Specifically, this goal addresses Principle 3.4, <i>"Collaborative structures and processes support coordination and implementation of curriculum."</i></p>
<p style="text-align: center;">Measure of Success</p> <p>How will you know when the student need is being met?</p>	<p>All unit plans will be updated to include cross-content teaching and learning opportunities, as well as any modifications made based on the curriculum bias assessment. Curriculum documents will continue to be updated using the UbD format as changes occur.</p>

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<p style="text-align: center;">Action Steps</p> <p>List the specific tasks that you believe will take you to your goal. Try to list sequentially from the first step to last.</p>	<p style="text-align: center;">Timeline</p> <p>Use actual dates if possible.</p>	<p style="text-align: center;">Person(s) Responsible</p> <p>Use specific names if possible.</p>	<p style="text-align: center;">Resources Needed</p> <p>What will be needed to support the task in terms of training, materials, etc.?</p>	<p style="text-align: center;">Measures of Success</p> <p>What will you see if this step has been successful? With students? In the classroom? With teachers?</p>	<p style="text-align: center;">Budget Impact</p> <p>What is the cost and source of funding?</p>
<p>Determine how and where cross-curricular details will be documented in the modified Understanding by Design template</p>	<p>By June 2024</p>	<p>Director and Mass Academy Teachers</p>	<p>Faculty meeting, co-planning, and curriculum writing time</p>	<p>All faculty will update their curriculum plans to include cross-content references</p>	<p>Minimal, given the flexibility of our schedule and availability of WPI resources to assist as needed</p>
<p>Build time into the school schedule to allow for collaborative lesson and unit planning</p>	<p>September 2024 – June 2026</p>	<p>Director and Mass Academy teachers</p>	<p>Time for collaboration meetings</p>	<p>All faculty will update their curriculum plans to include cross-content references</p> <p>Students will be able to articulate how the content they are learning connects across subjects.</p>	<p>Minimal, given the flexibility of our schedule</p>
<p>Review the anti-bias curriculum checklist as a full faculty to ensure all teachers understand and are able to implement with fidelity</p>	<p>By June 2025</p>	<p>Director and Mass Academy teachers</p>	<p>Time during one or more faculty meetings</p> <p>Possibly training and selected readings for deeper learning</p> <p>Time for teachers to review their curricula and made any identified adjustments</p>	<p>All teachers will be able to incorporate into their curriculum and classroom meaningful references to racial and gender biases in their related fields. Teachers will implement culturally responsive teaching practices that provide broader range of perspectives for students</p>	<p>Minimal, due to the availability of resources at WPI to support training and ongoing needs</p>

Goal 2

<p style="text-align: center;">Statement of Need</p> <p>What student need do you hope to address with this action plan?</p>	<p>Mass Academy has significant support from and access to the resources on the WPI campus and beyond. Mass Academy students and faculty have experienced successful relationships with the greater community, but this information is not recorded in a centralized location. Consequently, both student and staff awareness of the available resources are varied and limited. This means students often lose valuable time in their search for access to mentors, internships, and labs.</p>
<p style="text-align: center;">Statement of Goals/Objective</p> <p>What is the goal of this action plan? This should be stated in terms of a measurable outcome.</p>	<p>By January 2026, Mass Academy will develop a database which includes external partners with whom Mass Academy students and faculty may potentially engage in support of school-related programming and initiatives. This database may include a wide range of individuals and organizations including WPI faculty and departments, alumni, community-based organizations, schools, libraries, other institutions of higher education, medical facilities, and more.</p>
<p style="text-align: center;">Theory of Action</p> <p>How will this Goal/Objective address the student need?</p>	<p>By creating a centralized database, all faculty will have access to the wide range of individuals who have demonstrated a willingness to support Mass Academy students and faculty. This will allow teachers to better advise their students on how to proceed with securing access to the resources they need.</p>
<p style="text-align: center;">Alignment</p> <p>How is this aligned to the NEASC Standards for Accreditation.</p>	<p>This goal aligns with Standard 3: Professional Practices. Specifically, this goal addresses Principle 3.6, <i>“Educators develop productive student, family, community, business, and higher education partnerships that support learning.”</i></p>
<p style="text-align: center;">Measure of Success</p> <p>How will you know when the student need is being met?</p>	<p>A usable database will be developed to record and store information about student and faculty partnerships and experiences. Students will have greater—and faster—success in gaining access to mentors, internships, and labs.</p>

<p style="text-align: center;">Action Steps</p> <p>List the specific tasks that you believe will take you to your goal. Try to list sequentially from the first step to last.</p>	<p style="text-align: center;">Timeline</p> <p>Use actual dates if possible.</p>	<p style="text-align: center;">Person(s) Responsible</p> <p>Use specific names if possible.</p>	<p style="text-align: center;">Resources Needed</p> <p>What will be needed to support the task in terms of training, materials, etc.?</p>	<p style="text-align: center;">Measures of Success</p> <p>What will you see if this step has been successful? With students? In the classroom? With teachers?</p>	<p style="text-align: center;">Budget Impact</p> <p>What is the cost and source of funding?</p>
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Determine which data will be collected to ensure the process is both valuable and sustainable	By December 2024	Director, Computer Science teacher, all faculty	Consultation with Computer Science teacher due to technical requirements	Mass Academy will have a clearly defined list of information that will be collected for each entry	Minimal, provided software is not purchased
Identify the appropriate mechanism for collecting and storing the information	By April 2025	Director, Computer Science teacher	Consultation with Computer Science teacher due to technical requirements Possibly permissions from IT for any software needs	Mass Academy will have a tool for collecting and storing the information	Minimal, provided software is not purchased
Train staff, and possibly students, in the use of the new database	By June 2025	Director, Computer Science teacher, all faculty	Time for training	All staff will know how to use the new database, both for entering data and retrieving data	Minimal, aside from staff time
Identify and implement a process for gathering, and ultimately sharing, existing data	By June 2026	Director and Mass Academy faculty	Time for entering data	Mass Academy staff will be able to successfully and efficiently enter information into the database Mass Academy staff report they are able to search the database and find the information they need Students will report they are getting appropriate help from faculty in their search for access to mentors, internships, and labs.	Minimal, aside from time; The heavy lift will be in the beginning, especially for some faculty who have more data to enter. This work may be supported through release time for those individuals. Once this process reaches maintenance mode, data will only need to be entered when there is a new partner to add

Goal 3

<p style="text-align: center;">Statement of Need</p> <p>What student need do you hope to address with this action plan?</p>	<p>Mass Academy has an articulated Vision of the Graduate but has not yet defined what proficiency looks like for each aspect within the vision with specific and measurable criteria for success. Furthermore, Mass Academy has not yet developed a formal process to assess and communicate individual student and whole-school progress toward achieving the school's vision of the graduate.</p>
<p style="text-align: center;">Statement of Goals/Objective</p> <p>What is the goal of this action plan? This should be stated in terms of a measurable outcome.</p>	<p>By June 2026, Mass Academy will develop a rubric for the Vision of the Graduate and identify ways to collect, analyze, and report data regarding individual student's and whole-school progress toward attainment of this vision.</p>
<p style="text-align: center;">Theory of Action</p> <p>How will this Goal/Objective address the student need?</p>	<p>Students will be better able to meet our expectations if they know what those expectations are and where they are on the path to achieving them.</p>
<p style="text-align: center;">Alignment</p> <p>How is this aligned to the NEASC Standards for Accreditation.</p>	<p>This goal aligns with Standard 2: Student Learning. Specifically, this goal addresses Principle 2.1, <i>"The school's vision of the graduate is defined by measurable criteria and learners receive feedback on their progress toward proficiency."</i></p> <p>This goal also aligns with Standard 3: Professional Practice. Specifically, this goal addresses Principle 3.3, <i>"Educators examine evidence of student learning and well-being to improve curriculum, instruction, assessment, practices, and programs and services."</i></p>
<p style="text-align: center;">Measure of Success</p> <p>How will you know when the student need is being met?</p>	<p>All faculty and graduates, beginning with the class of 2027, will be able to articulate what proficiency looks like for each aspect within the vision of the graduate.</p>

<p style="text-align: center;">Action Steps</p> <p>List the specific tasks that you believe will take you to your goal. Try to list sequentially from the first step to last.</p>	<p style="text-align: center;">Timeline</p> <p>Use actual dates if possible.</p>	<p style="text-align: center;">Person(s) Responsible</p> <p>Use specific names if possible.</p>	<p style="text-align: center;">Resources Needed</p> <p>What will be needed to support the task in terms of training, materials, etc.?</p>	<p style="text-align: center;">Measures of Success</p> <p>What will you see if this step has been successful? With students? In the classroom? With teachers?</p>	<p style="text-align: center;">Budget Impact</p> <p>What is the cost and source of funding?</p>
<p>Research and develop a rubric for each of the four attributes of the vision of the graduate</p>	<p>By April 2025</p>	<p>Director and faculty</p>	<p>Time for staff to conduct research, collaborate, develop, and review the rubrics</p>	<p>All faculty will be able to define proficiency for each attribute of the vision of the graduate</p>	<p>Minimal</p>
<p>Calibrate use of the rubrics among the faculty</p>	<p>By October 2025</p>	<p>Director and faculty</p>	<p>Time for faculty to practice using the</p>	<p>Staff will be calibrated in their use of the rubrics</p>	<p>Minimal</p>

			rubrics and calibrate their ratings		
Develop a formal process to assess individual student progress toward attainment of the vision of the graduate	By January 2026	Director and faculty	Time for staff to collaborate	Faculty will know when and how to assess student progress As appropriate, faculty will incorporate metrics into their courses to support evidence of progress toward the vision of the graduate	Minimal
Determine a process for communicating each individual learner's progress toward achieving the vision of the graduate	By March 2026	Director and faculty	Time for staff to collaborate	Students will know their progress toward achieving the vision of the graduate	Minimal
Develop an annual report with whole-school progress toward learner's attainment of the vision of the graduate	By June 2026	Director and faculty	Time for staff to collaborate	Staff will know the school's progress toward student attainment of the vision of the graduate and use this data to inform school- and class-specific action steps	Minimal

Goal 4

<p style="text-align: center;">Statement of Need</p> <p>What student need do you hope to address with this action plan?</p>	<p>Since students only attend Mass Academy for two years, with one of those years as essentially WPI students, it is critical that all students feel a sense of belonging at Mass Academy and believe the school meets their academic, social, and emotional needs. It is also essential that Mass Academy is able to sustain its strong and well-established program without having to reinvent itself every year because the students graduate so soon after arrival. Finding the balance between supporting students' interests and maintaining our high-quality programming is critical to students' sense of fulfillment and satisfaction.</p>
<p style="text-align: center;">Statement of Goals/Objective</p> <p>What is the goal of this action plan? This should be stated in terms of a measurable outcome.</p>	<p>By June 2027, all graduates will report having experienced a sense of belonging and satisfaction at school as indicated in survey data. This will be achieved by monitoring and responding to students' social and emotional needs, reviewing our extracurricular offerings for juniors and seniors, providing feedback on individual progress toward achieving the vision of the graduate, and increasing opportunities for student reflection and goal setting.</p>
<p style="text-align: center;">Theory of Action</p> <p>How will this Goal/Objective address the student need?</p>	<p>Students perform better when they are mentally and physically at their best, and when they feel a connection to the school. By monitoring student wellbeing and offering extracurriculars that students find interesting and worthwhile, the faculty and staff will lay the foundation for a positive experience. Furthermore, students will be more successful when they know what is expected of them, are given explicit feedback regarding how they are progressing toward meeting those expectations, and are provided with the opportunity to reflect and set goals.</p>
<p style="text-align: center;">Alignment</p> <p>How is this aligned to the NEASC Standards for Accreditation.</p>	<p>This goal aligns with Standard 1: Learning Culture. Specifically, this goal addresses Principle 1.1, <i>"The school community provides a safe, positive, respectful, and inclusive culture that ensures equity and honors diversity in identity and thought."</i></p> <p>This goal aligns with Standard 1: Learning Culture. Specifically, this goal addresses Principle 1.3, <i>"The school community takes a collective responsibility for the well-being of every student and can demonstrate how each student is known, valued, and connected to the school community."</i></p> <p>This goal aligns with Standard 2: Student Learning. Specifically, this goal addresses Principle 2.1, <i>"The school's vision of the graduate is defined by measurable criteria and learners receive feedback on their progress toward proficiency."</i></p> <p>This goal aligns with Standard 4: Learning Support. Specifically, this goal addresses Principle 4.1, <i>"All students receive appropriate intervention strategies to support their academic, social, and emotional success."</i></p>

Measure of Success How will you know when the student need is being met?	Through end of year surveys, all Mass Academy students, beginning with the Class of 2027, will report a sense of belonging and a positive school experience.
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Action Steps List the specific tasks that you believe will take you to your goal. Try to list sequentially from the first step to last.	Timeline Use actual dates if possible.	Person(s) Responsible Use specific names if possible.	Resources Needed What will be needed to support the task in terms of training, materials, etc.?	Measures of Success What will you see if this step has been successful? With students? In the classroom? With teachers?	Budget Impact What is the cost and source of funding?
Review extracurricular offerings to ensure they match students' interests; determine any adjustments to existing offerings	Ongoing	Director and faculty	Time at a series of faculty meetings Survey of students	Consistent student participation in their selected extracurriculars	Minimal, aside from any expenses to run the extracurriculars
Revise end of year surveys to include questions related to sense of belonging and school satisfaction	By April 2024	Director, School Counselor, and faculty	Time for faculty collaboration	The end of year survey will include questions to measure students' sense of belonging and satisfaction with the Mass Academy program	Minimal, since a survey already exists and will simply need to be revised
Develop a structure for student reflection and goal setting	By January 2025	Director, School Counselor, and faculty	Time for collaboration Time built into school schedule for student reflection and goal setting	All students will develop their own goals for improved success as Mass Academy juniors	Minimal
Provide students with individual feedback on their progress toward achieving the vision of the graduate (See Goal 3)	By May 2026	Director and faculty	Time for rubric and reporting development, staff training and calibration (See Goal 3)	Students will know their progress toward achieving the vision of the graduate	Minimal
Review whole-school and student-specific data; revise process as needed	Ongoing, by June 2027	Director and faculty	Faculty meeting time dedicated to data and system evaluation	Students will report a sense of belonging and satisfaction at Mass Academy	Minimal