

SCHOOL IMPROVEMENT PLAN

MASS ACADEMY OF MATH AND SCIENCE

2017-19

SCHOOL COUNCIL MEMBERS

MICHAEL BARNEY	DIRECTOR
ANGELA TARICCO	FACULTY
EMMA BEELER	CLASS OF 2018
ELENA CAPPY	CLASS OF 2018
SAM PENDERGAST	CLASS OF 2018
ROBERT CLARK	CLASS OF 2019
MICHELLE HO	CLASS OF 2019
ANDREA MECHARY	CLASS OF 2019
GAYATHRI NANDYALAM	CLASS OF 2019
ARINDAM BHATTACHARJEE	PARENT
SUSAN CLARK	PARENT
MAURICE FARRAHER	PARENT
JUM HU	PARENT
MEENA KRISHNAN	PARENT
LINDA LAMBOURNE	PARENT
DEEPA SUBRAMANIAN	PARENT

MISSION OF MASS ACADEMY

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, incorporating the liberal arts and authentic research, in a community committed to the following:

- Lifelong 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, providing resources for schools and students in the Commonwealth of Massachusetts

Core Values

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

Beliefs About Learning

- All students have 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

Unless stated otherwise, all totals and averages are over the past five years, including the classes of 2013 through 2017, for a total of 247 students.

COLLEGE ACCEPTANCES

The totals listed below are a representative sample of the college acceptances over the past five years.

Boston College	11	Olin College	6
Boston University	34	Princeton University	3
Brandeis University	10	Rensselaer Polytechnic Institute	35
Brown University	10	Rochester Institute of Technology	18
California Institute of Technology	3	Tufts University	7
Carnegie Mellon University	13	University of California (all)	13
Case Western Reserve University	11	University of Chicago	3
College of the Holy Cross	13	University of Connecticut	27
Columbia University	6	University of Illinois	8
Cornell University	18	University of Massachusetts (Amherst)	120
Dartmouth College	3	Duke University	6
Drexel University	13	University of North Carolina-Chapel Hill	5
Georgetown University	3	University of Pennsylvania	3
Georgia Institute of Technology	12	University of Vermont	13
Harvard College	1	Washington University at St. Louis	2
Harvey Mudd College	2	Wellesley College	6
Massachusetts Institute of	11	Williams College	4
Mount Holyoke College	4	Johns Hopkins University	7
New York University	9	Worcester Polytechnic Institute	150
Northeastern University	88	Yale University	1

STEM AWARDS

A limit of 12 projects is allowed per school per year at the Regional Fair, which is the gateway to State and International (ISEF) Fairs. The following list includes 1st, 2nd, 3rd, and 4th place awards, but does not include honorable mentions or other special awards (e.g. patent awards).

Over the past five years, Mass Academy has sent 60 participants (the maximum allowed) to the Regional Fair, where 92% received awards. Of those who qualified for the State Fair, 82% earned awards. Mass Academy also sent 16 participants to the Intel International Science and Engineering Fair (Intel ISEF), of which 75% achieved awards. In addition 5 of our students were Semifinalists in the Intel Science Talent Search (Intel STS), with 2 Finalists, of which one received a Top Award.

STANDARDIZED TEST SCORES

PSAT/NMSQT

Note: PSAT scoring changed in October of 2015. The old scores were based on a maximum of 80 points, and the new scores, denoted with an asterisk, are based on a maximum of 760 points.

Test-takers	247 (100%)
Avg Reading	65.2, 681*
Avg Math	70.6, 726*

SAT Subject Tests

Math 2: Test-takers	216 (87%)	Avg Score 756
Physics: Test-takers	211 (85%)	Avg Score 737

ACT

Test-takers	112 (45%)
Avg Composite Score	31.9
Avg Reading Score	31.2
Avg Math Score	32.8

National Merit Scholarship Program

Letters of Commendation	96 (39%)
Semifinalists	28 (11%)
Finalists (Scholars)	19 (8%)
Total Recognitions and Awards	124 (50%)

SAT

Test-takers	233 (94%)
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Avg Reading Score	693
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Avg Math Score	744
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AP

Our courses meet or exceed the requirements of most AP curriculums. Although our courses do not teach to those tests, many of our students are prepared to take the tests and perform very well on them. The most commonly taken AP tests are Calculus AB and BC, Physics 1, Physics C Mechanics and E&M. The following data represent AP tests taken by Academy students over the past three years (N = 150).

Test-takers	65 (44%)
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Total Tests	126
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Avg Score	4.26
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Earned ≥ 3	96%
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GOAL #1. INTEGRATE HEALTH SERVICES INTO MASS ACADEMY OPERATIONS

CONNECTION TO CORE VALUES: SUPPORTIVE COMMUNITY BASED ENVIRONMENT

STEPS	RESPONSIBLE PARTIES	TIMELINES	MEASUREMENT
ADD NURSING SERVICES 8 HOURS PER WEEK	NURSE	IMPLEMENT AUGUST 2017	HEALTH DATA
DEVELOP WELLNESS PROGRAMS IDENTIFIED BY MANY CONSTITUENTS AND IMPLEMENT DURING 2017-18 YEAR	NURSE, ,DIRECTOR, MCP INTERNS	2017-18 SCHOOL YEAR	COLLECT SURVEY DATA
INTEGRATE YOGA AS AN ADDITIONAL PE COURSE C TERM 2018	METROWEST YOGA	C TERM 2018	SURVEY DATA
WELLNESS COMMITTEE 2018-19	NURSE, COUNSELOR, FACULTY, STUDENTS, PARENTS, WPI NUTRITIONIST	FORMULATE SUGGESTIONS FOR WELLNESS INITIATIVES FOR FUTURE PLANNING	REPORT GOALS FOR 2018-19

GOAL #2 IMPROVE STUDENT INTERVENTION AND SUPPORT PRACTICES**CONNECTION TO CORE VALUES: PERSEVERENCE**

STEPS	RESPONSIBLE PARTIES	TIMELINES	MEASUREMENT
CHANGE HANDBOOK POLICIES AND PROCEDURES FOR EARLIER INTERVENTIONS	ADVISORS , STUDENTS AND PARENTS	IMPLEMENT A TERM-MONITOR THROUGHOUT YEAR	SUCCESS PLAN INTERVENTION, STUDENT RETENTION
MONITOR MAJOR ASSESSMENTS	FACULTY	YEAR	SCHEDULES
REWRITE SUMMER CHEMISTRY CURRICULUM	STEM TEACHER	SUMMER 2018	TRACK CHEMISTRY STUDENTS OVER 2 YEARS OF IMPLEMENTATION

GOAL #3 TO COMPLETE A CURRICULUM REVIEW INCLUDING THE REVISION OF CURRICULUM DOCUMENTS**CONNECTION TO CORE VALUES: COLLABORATION**

STEPS	RESPONSIBLE PARTIES	TIMELINES	MEASUREMENT
REVIEW WRITTEN CURRICULUM WITH THE UBD FORMAT AS THE BASE TEMPLATE	FACULTY	COMPLETE FIRST ROUND OF REVISION BY MAY 2019	
OPERATIONS MANUAL AND DIRECTORS PROCEDURES TO BE DRAFTED	OPERATIONS MANAGER AND DIRECTOR	COMPLETE FIRST ROUND BY JULY 2019	

GOAL #4 TO COMPLETE AND IMPLEMENT A VISION OF THE GRADUATE

CONNECTION TO CORE VALUES: SUPPORTIVE, COMMUNITY BASED ENVIRONMENT

STEPS	RESPONSIBLE PARTIES	TIMELINES	MEASUREMENT
COMPILE AND REVIEW SURVEY RESULTS FOR VISION OF GRADUATE	FACULTY, SCHOOL COUNCIL, ALUMNI	COMPLETE AND PUBLISH BY SPRING 2018	
GAIN FEEDBACK AND REVIEW VISION STATEMENT	FACULTY, SCHOOL COUNCIL, ALUMNI	ONGOING	