

ANNUAL REPORT  
2015-2016



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## Introduction to the School

Advanced Math and Science Academy Charter School			
<b>Type of Charter</b> (Commonwealth or Horace Mann)	Commonwealth	<b>Location</b>	Marlborough, MA
<b>Regional or Non-Regional?</b>	Regional	<b>Districts in Region</b> (if applicable)	Marlborough, Clinton, Maynard, Hudson
<b>Year Opened</b>	2005	<b>Year(s) Renewed</b> (if applicable)	2010, 2015
<b>Maximum Enrollment</b>	966	<b>Current Enrollment</b>	981 (June 2016 SIMS)
<b>Chartered Grade Span</b>	6-12	<b>Current Grade Span</b>	6-12
<b># of Instructional Days per school year</b>	180	<b>Students on Waitlist</b>	456
<b>School Hours</b>	8:05 AM – 3:15 PM	<b>Age of School</b>	11
<p><b>Mission Statement</b></p> <p>The Advanced Math and Science Academy Charter School will create an atmosphere of celebration of knowledge where children of all backgrounds and abilities excel in all subjects, especially in math, science and technology, empowering them to succeed in the workplace of our modern high-tech world.</p>			

## Letter from the Chair of the Board of Trustees

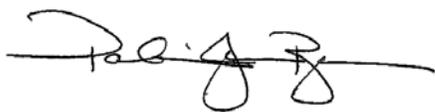
Dear AMSA Community,

I am very pleased to present this Annual Report for the 2015-2016 school year, a year of change and growth for the institution, and encourage you to review it in its entirety. This Annual Report reports many measures of our school's academic and financial health and describes our efforts to ensure that an education true to our charter school's mission is attained by all students. We are extremely proud of the achievements of our students and our staff and their demonstrated successes in learning and teaching in an academically rigorous environment.

We welcomed the arrival of Dr. Joseph McCleary as our Executive Director. Dr. McCleary's extensive background leading charter and independent schools fit with the Board's desire to return the school to its mission-driven roots and to educate differently. It is a challenge to bring together the best of the original entrepreneurial vision with the structure and processes from our district public schools which are necessary to operate an organization with nearly 1000 students and a variety of stakeholders with disparate interests. We believe that Dr. McCleary's thoughtful, equitable, and sincere approach will enable us to find the balance of two seemingly dichotomous aims and bring our diverse community together to move toward a common vision of how to "create an atmosphere of celebration of knowledge" for our students.

As we look forward, it is important also to look back. A great number of people have contributed to the success of the school, and many have moved on. We are grateful for their contributions in laying the groundwork for AMSA during its first decade. In addition, we have a growing number of students who have graduated and moved on with their lives in college and careers. In the upcoming year, we will host our first fifth-year class reunion. We hope our alumni students and staff will remain in touch as they have each played a key role in building the foundation that is AMSA today.

We all must remain mindful that it is the collective responsibility of the entire community to educate our children – it takes teachers, parents, administrators, staff members, and community members working in concert to ensure the best possible education for AMSA students now and in the future. The Board remains committed to a vision of excellence and to working with all stakeholders to continue to make this vision a reality.



Pauline Jen Ryan  
Chair, Board of Trustees

## **SCHOOL PERFORMANCE AND PROGRAM IMPLEMENTATION**

### *Faithfulness to the Charter*

#### **Mission and Key Design Elements**

The academy's mission to create an environment where we celebrate knowledge, inspire an appreciation for learning and support students of all abilities is evidenced by the academic and personal achievements of our students over the past eleven years. AMSA students are encouraged to embrace challenge, pursue intellectual advancement and develop personal responsibility. Students are taught that advancement in academic knowledge is a process that requires time, commitment and discipline.

Many of AMSA's key design elements are unique and distinguish our educational program from other schools. The foundation of AMSA's educational model is the belief that all children are able to learn complex, abstract concepts at an early age if allowed to build on these concepts as they mature. Understanding grows from exposure to ideas and concepts developed over time. Students experience multiple-year exposure to all subjects preparing them for the demands of college and professional life.

Building a strong foundation of understanding in mathematics relies on our multi-year and well-integrated program of study, beginning in grade six and ending in the tenth or eleventh grade with the core subjects of Algebra, Trigonometry, Geometry and Calculus. We have developed a variety of courses that are offered to our juniors and seniors as capstone to the mathematics curriculum. These courses include Calculus at Honors and AP levels, Multivariable Calculus, Linear Algebra with Differential Equations, Statistics at Honors and AP Levels, topics via Independent Study, and Accounting/Financial Math.

It takes both sustained thought and a measure of inspiration to understand mathematical ideas. AMSA is dedicated to creating an educational culture that makes it possible for our students to think imaginatively, to probe alternatives and to view ideas from a variety of perspectives. These skills are cultivated over time and encourage opportunities for interdisciplinary learning that connects Mathematics with AMSA's Science and Humanities programs. Programs are offered that allow students to apply mathematics to hands-on research problems.

AMSA students were offered a unique opportunity this year to work with seven scientists from MilliporeSigma, a leader in the development and production of biotechnology with a focus on solutions and services for research. Our students and Science teachers worked side by side with the MilliporeSigma Scientists creating experiments and engaging in research projects for a full day at AMSA. Events like these support AMSA's intention to inspire our students with a deep interest and a shared purpose to find solutions to the toughest problems that face the life sciences today.

AMSA's Computer Science curriculum is another program that distinguishes AMSA from other schools. All students take Computer Science in grades six through eleven. When a student completes our Computer Science program they will have been exposed to the following topics: Networking, Software Design using Java, Advanced Web Design, Mobile Computing, Computer-Aided Design and Drafting, and Robotics. Students will have the opportunity to take advanced electives in Engineering, AP Computer Science,

and Cybersecurity. Equipped with this knowledge and skills in computing, our students participate in interdisciplinary projects and push the boundaries of conventional thinking with confidence. In addition to working with our own students and faculty, we seek out partnerships with industry and universities to expose our students to practical applications of computing and engineering.

A highlight for some of our Computer Science students included a summer internship at Babson, where they built a mobile application prototype, successfully resurrecting a shelved Google project. One of our students was announced as the NCWIT (National Center for Women and Information Technology) national winner. The award recognizes young women who have shown exceptional leadership qualities in the computer science field in their community. One of our talented Computer Science teachers and an AMSA student were invited to be on the panel at the STEM Advisory Council Lecture Series at UMASS Boston in March 2016. As a result of this connection the Director of Software Engineering at MorphoTrust, USA (an Identity Solution company in Billerica) along with her team came to AMSA to speak to students in Cybersecurity class. The MorphoTrust engineers were so impressed with our students that eight seniors were chosen to receive a six-week paid summer internship.

While a focus on mathematics and science remains a driving force in our school, the entire curriculum at AMSA is focused on excellence. Student achievement is not only demonstrated in mathematics and the sciences, but is strongly represented in the equally rigorous humanities program. AMSA's goal is to graduate students who are intellectually prepared and culturally literate. In addition to advanced Math, Science and Technology, AMSA students are exposed to an integrated and challenging curriculum in art, history, language and literature. The literature curriculum begins with classical Greek and Roman Literature in 6<sup>th</sup> and 7<sup>th</sup> grade and then follows a logical, chronological sequence through the seminal literary works from representative periods of British and American literature. Also included are significant works in translation from various world literatures. Alignment with our history and art curriculum provides context and reinforcement throughout the six year sequence along with three years of Latin in grades six through eight. In twelfth grade students can choose from several specialized English topics including Shakespeare, Gothic literature, AP English Literature and AP Language and Composition.

Our students compete regionally and nationally in Math, Science, Engineering, Technology, Speech and Debate, History (Quiz Bowl), Geography, Art, Acapella, and Business Entrepreneurship. AMSA also provides students with a robust and exceptional athletic program.

### **Amendments to the Charter**

<b>Date</b>	<b>Amendment Requested</b>	<b>Approved</b>
7-05-15	2015-2020 Accountability Plan	8-24-15
11-20-15	Bylaws	12-02-15
12-07-15	Expulsion Policy	12-23-15
12-18-15	2015-2020 Accountability Plan (revision to one measure)	1-25-16

## **Dissemination Efforts**

Sharing our educational philosophy, teaching practices and curriculum is an obligation and a pleasure that AMSA students, faculty and administrators embrace. Students are especially animated and enthusiastic when they share information about their school with visitors. This year the school had many visitors, but we were especially pleased to welcome the Superintendent and Principal of the Lakeside School District, in Hot Spring, Arkansas. Our guests were visiting some of the top performing schools in the Boston area and included AMSA on their noteworthy list that included Boston Latin, Boston Collegiate Charter School and Lexington High. They toured the school and were introduced to students, faculty, and staff, spending time observing several classes, with the intention of gaining insight into AMSA's successful educational model.

A group of AMSA students had the opportunity to lead various Computer Science Workshops throughout Massachusetts. Ten of these students were invited to the State House on November 17, 2015 to teach coding to senators. The event was organized by the Legislative Tech Caucus as the kick-start for Computer Science Education Week.

AMSA held its first annual Educators' Exchange on April 28, 2016. All Superintendents and High School and Middle School Principals from our core region of service (Marlborough, Clinton, Maynard and Hudson) were invited to spend a day at AMSA for the purpose of collaboration and exchange of best practice. The invitation was extended to all other educators at the discretion of each administrator who was invited. Although our first event was under attended, we expect to draw more participation from our neighboring educators next year.

## ***Academic Program Success***

### **Student Performance**

The following link will take you to AMSA's 2015 School District Report Card:

<http://profiles.doe.mass.edu/reportcard/SchoolReportCardOverview.aspx?linkid=105&orgcode=04300305&fycode=2015&orgtypecode=6&>

AMSA students have continued to maintain a high level of achievement on PSAT, SAT and Advanced Placement (AP) exams.

- PSAT and SAT 2015-2016 Performance, *Refer to Appendix A on page 11.*
- 2016 AP Summary, *refer to Attachment 1 on page 24.*
- 2016 AP Data Year to Year, *refer to Attachment 2 on page 25.*

### **Program Delivery**

AMSA's goal is to cultivate a generation of leaders and informed citizens capable of making a contribution of their community, their families, and their country. We believe that true leadership is made possible through the combination of intellectual attainment and good character. Consequently, the charter school promotes academic achievement coupled with ongoing growth in respect and responsibility. Student assessment reports have historically included a grade that reflects progress in effort. For the 2015-2016 school year, this category was expanded and broadened under the heading of Respect

and Responsibility. In addition to effort, other character traits were addressed, including kindness, good manners, and respect for others. The AMSA faculty and staff met to discuss these worthwhile aspirations. Additionally, each class participated in a student assembly that provided opportunities for reflection and commentary on the Respect and Responsibility goals. This emphasis on character growth is part of our school's ongoing desire to foster a virtuous climate and culture, for the benefit of everyone. We encourage the reinforcement of these good habits at home. Students were given five designations each quarter; Exemplary, Proficient, Developing, Needs Improvement, or Unsatisfactory. When the aggregate of all character grades were calculated at the end of the school year, 90% of all grades were Exemplary or Proficient.

### **Social, Emotional, and Health Needs**

The administration has determined that students and teachers would benefit from the addition of a second Dean of Students who will focus on the social, emotional, and disciplinary needs of the students in the Middle School.

## *Organizational Viability*

### **Organizational Structure of the School**

Changes to the organizational structure of the school included the departure of the Director of Student Services and the elimination of the position in September 2015. A Special Education Coordinator was hired to oversee the department. In June 2016, the position of Human Resources Manager was filled, and a second Dean of Students was hired for the Middle School. The Special Education Consultant who has been supporting the Coordinator this year has been hired to serve in the role of Special Education Co-Coordinator.

- 2015-2016 Organizational Chart, *refer to Attachment 3 on page 26.*
- 2016-2017 Organizational Chart, *refer to Attachment 4 on page 27.*

### **Teacher Evaluation**

The school implemented a process of teacher evaluation that focused on frequent short visits to classrooms coupled with individual meetings with teachers for feedback and advice. The process was coordinated between Department Chairs, the Principal and the Vice Principal. The goal was to focus evaluations on a core set of five key indicators: punctuality, curriculum, professionalism, alignment with the school charter, and classroom management.

### **Budget and Finance**

The Unaudited FY16 statement of revenues, expenses, and changes in net assets (Income Statement), the statement of net assets for FY16 (Balance Sheet), and the approved school budget for FY17 (Budget) are included on the following three pages.

**Advanced Math and Science Academy Charter School  
Income Statement  
For Fiscal Year Ending June 30, 2016  
Preliminary and Unaudited**

	<u><b>Jul '15 - Jun 16</b></u>
<b>Income</b>	
4000 · Tuition	\$ 12,841,442.00
4050 · Grants & Donations	178,155.50
4181 · Misc Income	41,769.56
4200 · Nutrition Income	123,225.24
4300-01 · Student Program Income	280,563.87
4300-02 · Athletic Program Income	188,853.47
4300-08 · Student Transportation Income	120,518.08
4500 · Settlement Income	966,576.00
9996 · Fund Transfer Income	-
<b>Total Income</b>	<u><b>\$ 14,741,103.72</b></u>
<b>Gross Profit</b>	<u><b>\$ 14,741,103.72</b></u>
<b>Expense</b>	
50000 · Salaries	\$ 7,267,819.27
50015 · Payroll Taxes & Fringe Benefits	1,153,219.11
50020 · Professional Development	43,611.23
52010 · Instructional Supplies & Equip	346,642.59
52050 · Student Program Exp	236,852.48
52060 · Nutrition Exp	135,827.33
52070 · Athletic Expense	460,757.68
52080 · Student Transportation Exp	202,761.90
54010 · Lease, CAM and Taxes	1,646,009.55
54030 · Facilities	341,410.07
54050 · Utility	239,526.52
55005 · IT	192,520.90
55006 · Auditor	19,786.00
55007 · Legal Expense	137,909.60
55010 · Other Operating Costs	228,730.15
5711 · Depreciation Expense	204,040.82
<b>Total Expense</b>	<u><b>\$ 12,857,425.20</b></u>
<b>Net Income</b>	<u><u><b>\$ 1,883,678.52</b></u></u>

**Advanced Math and Science Academy Charter School  
Balance Sheet  
As of June 30, 2016**

	<b>Jun 30, 16</b>
<b>ASSETS</b>	
<b>Current Assets</b>	
Checking/Savings	\$ 8,431,983.42
Accounts Receivable	2,385.00
Other Current Assets	625,296.53
<b>Total Current Assets</b>	<b>\$ 9,059,664.95</b>
<b>Fixed Assets</b>	\$ 515,190.82
<b>Other Assets</b>	\$ 33,333.00
<b>TOTAL ASSETS</b>	<b>\$ 9,608,188.77</b>
 <b>LIABILITIES &amp; EQUITY</b>	
<b>Liabilities</b>	
<b>Current Liabilities</b>	
Accounts Payable	\$ 104,084.38
Other Current Liabilities	1,161,111.19
<b>Total Current Liabilities</b>	<b>\$ 1,265,195.57</b>
<b>Total Liabilities</b>	<b>\$ 1,265,195.57</b>
<b>Equity</b>	\$ 8,342,993.20
<b>TOTAL LIABILITIES &amp; EQUITY</b>	<b>\$ 9,608,188.77</b>

**Advanced Math and Science Academy Charter School  
Budget for Fiscal Year Ending June 30, 2017**

**Approved April 28, 2016\***

	<b>July 2016-June 2017</b>	
<b>Income</b>		
4000 · Tuition	\$	12,700,000.00
4050 · Grants & Donations		204,100.00
4181 · Misc Income		34,000.00
4200 · Nutrition Income		145,000.00
4300-01 · Student Program Income		278,600.00
4300-02 · Athletic Program Income		220,626.00
4300-08 · Student Transportation Income		158,500.00
4500 · Settlement Income		
9996 · Fund Transfer Income		
<b>Total Income</b>	\$	13,740,826.00
<b>Gross Profit</b>	\$	13,740,826.00
<b>Expense</b>		
50000 · Salaries	\$	7,623,200.00
50015 · Payroll Taxes & Fringe Benefits		1,244,300.00
50020 · Professional Development		100,000.00
52010 · Instructional Supplies & Equip		216,800.00
52050 · Student Program Exp		222,400.00
52060 · Nutrition Exp		148,200.00
52070 · Athletic Expense		455,470.00
52080 · Student Transportation Exp		292,100.00
54010 · Lease. CAM and Taxes		1,671,200.00
54030 · Facilities		384,650.00
54050 · Utility		245,000.00
55005 · IT		200,150.00
55006 · Auditor		21,000.00
55007 · Legal Expense		271,000.00
55010 · Other Operating Costs		253,650.00
5711 · Depreciation Expense		191,000.00
<b>Total Expense</b>	\$	13,540,120.00
<b>Net Income</b>	\$	200,706.00

\*This is the current approved budget, but it will be revised and re-approved now that a final contract is in place with the teachers' union.

**CAPITAL PLAN** (Ongoing and Projected)

<b>Description of Project</b>	<b>Current Status</b>	<b>Completion</b>	<b>Estimate</b>
<p><b>Ethernet Switch Modules:</b> Switch modules in our data closets allowing for internet access throughout all buildings. some are getting older and will need to be upgraded next year.</p>	Completed	July 2016	\$10,000
<p><b>Wireless Network Maintenance and Upgrades:</b> Additional access points for more wireless coverage and upgrades for the older access points.</p>	Completed	July 2016	\$15,000
<p><b>Staff Laptops:</b> IT - About one third of staff receive a new laptop every year. Laptops are on a three year rotation.</p>	In progress	Fall 2016	\$45,000
<p><b>Sonic Wall Firewall Device:</b> Replace existing Firewall Device.</p>	Completed	July 2016	\$7,475
<p><b>Chromebook Carts:</b> One for the English Dept., One for the World Language Dept., one for the Middle School.</p>	In progress	August 2016	\$30,000
<p><b>Math Laptops:</b> Need to complete the Math Laptop cart (currently have 13 laptops).</p>	Laptops will be ordered this summer	Fall 2016	\$13,000
<p><b>Computer Lab:</b> Computer Science- one computer lab gets updated every year.</p>	In progress	August 2016	\$25,000
<p><b>Cisco Server:</b> Computer Science – Cybersecurity and Oracle Classes are in need of a server.</p>	In progress	Fall 2016	\$10,022
<p><b>Five Overhead Projectors:</b> This represents the remaining classrooms that need overhead projectors.</p>	In progress	August 2016	\$12,500
<p><b>Classroom Furniture:</b> We replace two classrooms per year.</p>	In progress	Fall 2016	\$15,650
<b>TOTAL</b>			<b>\$183,647</b>

AMSA has established a Capital Reserve Account for all future capital projects.

## Appendix A Accountability Plan Performance for 2015-2016

Objectives and Measures related to Mission and Key Design Elements	2015-2016 Performance (Met/Partially Met/Not Met)	Evidence
<b>Objective:</b> The school is faithful to the mission, vision and educational philosophy defined in the charter application and any subsequent approved amendments.		
<b>Measure:</b> 98% of seniors will apply to a college or university and 100% of these students will be accepted to a college or university.	Met	98% of the students in the class of 2016 applied to a college or university. Of the students who applied, 100% were accepted to at least one college or university.
<b>Measure:</b> Upper School students will consistently demonstrate a high level of performance on the state standard for competency determination for graduation (currently MCAS). At least 98% of Upper School students will score at the Advanced/ Proficient level in the ELA, Math and Science MCAS.	Met  Not Met	In 2015, 100% of Upper School Students scored at the Advanced / Proficient level in both Math and ELA. In 2015, 97% of Upper School Students scored at the Advanced/Proficient level in Science.
<b>Objective:</b> AMSA's educational model will prepare students for college and professional life.		
<b>Measure:</b> 83% of all students will take at least one Advanced Placement course between grades 9 and 12.	Met	88% of the students in the class of 2016 took at least one Advanced Placement course between grades 9 and 12.
<b>Measure:</b> Each year, 90% of the total number of Advanced Placement test taken by AMSA students enrolled in the school's corresponding Advanced Placement courses will have a score of 3 or better.	Not Met	86% of the total number of Advanced Placement tests taken by AMSA students enrolled in the school's corresponding Advanced Placement courses received a score of 3 or better on the AP exams taken in May of 2016.
<b>Measure:</b> 98% of all students in grades 9, 10 and 11 will take the PSAT. Students will improve their Critical Reading and Writing PSAT scores by an average of 10% from grade 9 to grade 11. Students will improve their Math PSAT scores by an average of 15% from grade 9 to grade 11.	Met	99% of all students in grades 9, 10 and 11 took the PSAT in Oct 2015. Students (class of 2017) improved their Critical Reading and Writing PSAT scores by an average of 20% from grade 9 to 11, and improved their Math PSAT scores by an average of 22% from grade 9 to 11.
<b>Measure:</b> 98% of all upper school students will take the SAT before January 1 <sup>st</sup> of their senior year. The SAT class mean will be no less than 15% higher than the state mean in Critical Reading, Writing, and Math.	Met	98% of the students in the class of 2016 took the SAT or ACT before January of their senior year. The mean scores were at least 24% higher than the state mean, with Math scores at 31% above the state mean.

<p><b>Objective:</b> AMSA will cultivate a generation of leaders, especially in math, science and technology, ensuring that every student is challenged at the maximum of their ability with the goal of further advancing their “maximum” level.</p>		
<p><b>Measure:</b> 100% of seniors with Educational Proficiency Plans (EPP) based on a less than proficient score on their 10<sup>th</sup> grade ELA and/or Math MCAS will achieve Proficiency/Competency Determination (CD) and graduate with their class.</p>	Met	In the class of 2016, 100% of seniors with an Educational Proficiency Plan (EPP) achieved Proficiency/Competency Determination (CD) and graduated with their class.
<p><b>Measure:</b> To support opportunities for students to master the curriculum, 100% of all teachers will provide at least 45 minutes of extra help weekly. Students in grades 6 through 8 will be provided additional time for extra help during the daily Directed Study.</p>	Met	100% of all teachers provided at least 45 minutes of extra help weekly. Students in grades 6 through 8 are provided with a Directed Study period every day where they receive extra help when needed.
<p><b>Objective:</b> AMSA will effectively promote student responsibility as a requirement for future career success.</p>		
<p><b>Measure:</b> Subject teachers will grade students quarterly on their character development in two categories: respect and responsibility. Categories will be ranked from 1 to 10, with 10 being the highest. When final grades are calculated in June, the student aggregate will average a 7 or greater in both categories.</p>	Met	When final grades were calculated in June, the student aggregate demonstrated that 90% of the total grades for respect and responsibility earned a 7 or greater in both categories.
<p><b>Objectives and Measures related to Dissemination</b></p>	<p><b>2015-2016 Performance (Met/Partially Met/Not Met)</b></p>	<p><b>Evidence</b></p>
<p><b>Objective:</b> AMSA will share its curriculum and educational model with other schools in Massachusetts over the course of the charter term.</p>		
<p><b>Measure:</b> AMSA will host an annual “Educators Exchange” for teachers and administrators from other Massachusetts schools, with the purpose of sharing AMSA’s curriculum and educational philosophy.</p>	Met	AMSA hosted its first “Educators Exchange” on April 28, 2016. All Superintendents and Principals (and other educators at their discretion) from the public school districts of Marlborough, Clinton, Maynard, and Hudson were invited to attend.

## Appendix B

### Recruitment Plan 2016 – 2017

School Name: Advanced Math and Science Academy Charter School

Date: July 29, 2016

- Please provide a brief narrative report on implementation of recruitment strategies from last year's plan.
- Please provide any additional information that gives context for subgroup enrollment figures, e.g., high number of siblings enrolled in entry class, re-classification of student subgroup status, etc.
- Please provide a brief explanation if you think that your incoming class of students (as captured in October 1, 2016 SIMS report) will meet the comparison index or the school's gap narrowing targets. Please indicate if you would like further discussion with the Department regarding the school's Recruitment Plan once you have submitted your October 1<sup>st</sup> SIMS demographic information.

#### **2015-2016 Implementation Summary:**

AMSA distributed a full color brochure to the Marlboro Resource Center (MRC) this year. MCR is a multi-service center that provides information and referral to health, education, housing and social services for Marlboro, Hudson and the surrounding communities. MRC also serves as the contact for the Marlborough Salvation Army. An AMSA representative provided the available MRC staff with details of the school's mission and academic program, while dispelling common misconceptions regarding tuition fees and admission based on test results or previous academic standing. AMSA also distributed brochures to the Marlborough Recreation Department, the Marlborough Boys and Girls Club, the Portuguese Club in Hudson, SMOC (South Middlesex Opportunity Council), and the Countryside Village Housing Development in Marlborough. The Executive Director led a presentation last fall at the Maynard Public Library to promote interest in AMSA and to provide information and answer questions about the school's program and services.

School Tours were well attended in the fall and spring. AMSA continues to develop partnerships with Assabet Valley Regional Technical High School, the Marlborough Chamber of Commerce, EMC, and MathWorks. These relationships have provided a wide range of exposure and goodwill in our community.

Subgroup enrollment figures appear low when compared to our core towns, but there are many factors that make a reasonable comparison difficult. Although the majority of our students come from our core towns, we have over fifty sending districts and sibling preference is directly related to the subgroup enrollment calculation, with siblings representing 42% of the incoming 6<sup>th</sup> grade. In addition, families who have students with learning disabilities or other challenges may be reluctant to change their child's familiar routine and services by leaving their current school. The lottery itself creates an obstacle to admission for many target groups. We historically have an extensive waitlist following the annual lottery. If we could raise the cap we would be able to admit more students of all backgrounds and abilities. Due to these indicators, it is unlikely that AMSA's incoming class of students (as captured in the October 1, 2016 SIMS report) will meet the comparison index.

**Describe the school's general recruitment activities, i.e. those intended to reach all students.**

**General Recruitment Activities for 2016-2017:**

AMSA will distribute brochures (in English, Portuguese and Spanish) to a wide range of target groups through community centers beyond the Marlborough area. The school will continue to conduct well advertised student led tours in the spring and fall. AMSA will hold educational and recreational events throughout the year that are open to the public. Some examples include academic workshops, theater productions, Arts Night, the Annual 5K Race, SMOG "I Love to Read Festival", and AMSA's International Festival. This exposure allows families to become familiar with our school, students and staff. AMSA remains an active member of the Marlborough Chamber of Commerce and our student organizations participate in many local events that focus on serving the needs of the community.

**Recruitment Plan –Strategies**

**List strategies for recruitment activities for each demographic group.**

Demographic Group	Strategies
Special education Students	Promotional brochures in three languages (English, Portuguese, and Spanish) state explicitly that AMSA offers Special Education services to all qualified students. Promotional materials also direct prospective families to the school website and SEPAC page for contact information and details about programs, events, and special needs services provided at AMSA.
Limited English-proficient students	AMSA's new brochure, which is published in three languages, will be distributed in community centers and churches beyond the Marlborough area in order to reach families from other core towns who may not be aware of our program and services. Promotional Materials state explicitly that ELL services are offered at AMSA.
Students eligible for free or reduced lunch	AMSA plans to distribute brochures at the Hudson Housing Authority and the Hudson Recreation Department. AMSA will identify low Income housing developments (beyond Marlborough, focusing on the core towns) each with a central office, where the school can provide brochures and post information for resident families.
Students who are sub-proficient	AMSA will pursue its goal to contact Kumon Math and Reading Center to develop a relationship of referral and collaboration.
Students at risk of dropping out	Brochures will be distributed at the Boys and Girls Club-Assabet Valley in Maynard and at the Maynard Recreation Department.
Students who have dropped out of school	AMSA does not admit new students past grade 9.
Other subgroups of students who should be targeted to eliminate the achievement gap	AMSA will continue to publish press releases that demonstrate our academic and athletic achievements, promoting that our success is built upon the effort and dedication of our students who have diverse backgrounds and abilities.

## Retention Plan 2016 – 2017

Please provide a brief narrative report on implementation of retention strategies from last year's plan.

### **2015-2016 Implementation Summary:**

Twelve Chromebooks were a welcome addition to our Special Education resources this past year, assisting students with writing and organizational skills. Students benefited from the summer programs designed to offer additional support to special needs students. A common obstacle for many of our incoming students is a lack of reading skills. This was the third year that AMSA conducted both a Math and Reading Skills placement/ assessment test for incoming students prior to the beginning of the school year. Students who tested below level were identified as needing support to assist teachers with early intervention. The Soaring Eagles Math and ELA tutoring program for students in grades 6 and 7, was effective in supporting struggling students. Extra help was offered during the daily directed study period and during teachers' after school hours.

The Guidance department hosted the 8<sup>th</sup> Grade Step Up Night for parents and students, which was created to inspire and prepare students for the exciting and challenging transition into the high school. The transition between 8<sup>th</sup> and 9<sup>th</sup> grade is an important benchmark and often associated with apprehension for students and their parents. Families are provided with information about the academic program and higher expectations that distinguish the upper school from the Middle School. The Guidance Department continues to develop exceptional resources for students and their families, assisting them with college admissions and the very complicated financial aid process. Counselors and a school psychologist were available to assist students, especially in the high school, with their academic and emotional needs. The school hosted evening programs for parents that focused on college readiness and admissions.

AMSA's *Back to the Future* event was originally designed to welcome the first graduating class back to school, offering alumni the opportunity to share their college experiences with seniors. The program has been so well received that it has become a favorite annual event. This past January alumni met with our seniors for a reception and Q&A. Former students provided insight about the many aspects of college life. Alumni also offered their own personal stories about how to avoid the tendency for seniors to lose academic interest during the last few months of high school.

The Board of Trustees created a task force this year to address the challenges faced by our students who reside outside the Marlborough area. The purpose is to focus on how to support our students with social and geographic obstacles that are characteristic of schools with a large number of sending districts.

AMSA supports a robust afterschool program providing students with opportunities to pursue special interests, compete academically and participate in service and leadership activities. Team dynamics are a critical part of AMSA's educational philosophy, providing the necessary framework for successful learning that is dependent upon a deep respect for knowledge as well as a genuine respect for others.

Overall Student Retention Goal	
Annual goal for student retention	93%

Retention Plan –Strategies List strategies for retention activities for <u>each</u> demographic group.	
Demographic Group	Strategies
Special education students	The Special Education Department will have two administrators for the 2016-2017 school year, serving as Co-Coordinator. The SPED staff will receive additional training before school begins. SEPAC meetings will be held on a monthly basis this year and the group is expanding its membership.
Limited English-proficient students	AMSA has cultivated a relationship with a local translation service, providing translation and interpreter services for notices, phone conversations, or meetings with parents who are not fluent in English. The service also provides AMSA with translation services for our promotional and recruitment materials.
Students eligible for free or reduced lunch	The PTO will hold used uniform sales periodically to assist parents with uniform costs due to changes to uniform policy. Students who are eligible for free or reduced lunch are given opportunities to apply for assistance with costs associated with field trips, sports and clubs, senior activities, and other school related expenses.
Students who are sub-proficient	Incoming 6 <sup>th</sup> grade students identified as needing support based on the math placement/assessment test will be set up with a <i>Study Island</i> (online preparatory program) account prior to the beginning of the 2016-2017 school year. The practice will help increase their knowledge base and improve their Math skills.
Students at risk of dropping out of school	AMSA has established a working rapport with the Marlborough Police Department and will continue to collaborate with local law enforcement to educate our students about the dangers of engaging in harmful activity that can potentially contribute to challenges at school and the risk of dropping out.
Students who have dropped out of school	Students who leave school will be notified in writing annually of their options and available resources for completing high school.
Other subgroups of students who should be targeted to eliminate the achievement gap	The school will continue to develop its culture of respect and responsibility through professional development opportunities for faculty and staff.

## Appendix C School and Student Data

### School and Student Data Tables

AMSA's student demographic information can be found on the Department's website using the following link to our school's profile:

<http://profiles.doe.mass.edu/profiles/student.aspx?orgcode=04300305&orgtypecode=6&>

STUDENT DEMOGRAPHIC AND SUBGROUP INFORMATION*		
Race/Ethnicity	# of students	% of entire student body
African-American	28	3%
Asian	227	23%
Hispanic	52	5%
Native American	2	<1%
White	633	65%
Native Hawaiian, Pacific Islander	0	0%
Multi-race, non-Hispanic	39	4%
Special education	44	5%
Limited English proficient	1	<1%
Low income	45	5%

\*Based on June 2016 SIMS Report

<b>ADMINISTRATIVE ROSTER FOR THE 2015-2016 SCHOOL YEAR</b>			
<b>Name, Title</b>	<b>Brief Job Description</b>	<b>Start date</b>	<b>End date</b> (if no longer employed at the school)
Joseph McCleary <i>Executive Director</i>	Responsible for the overall management of the school	July 2015	
Michael Curry <i>Principal</i>	Oversee faculty, curriculum, Nurses, and Guidance	August 2015	June 2016
Erin O'Connor <i>Vice Principal</i>	Responsible for school events, student activities	August 2015	
Michael McIntyre Director of Student Services	Responsible for the SPED Program/Staff, Nurses, Registrar and Adjustment Counselor	August 2013	September 2015
Erin Pasternak SPED Coordinator	Responsible for the SPED Program/Staff	September 2015	
Lisa Barooshian <i>Director of Guidance</i>	Oversee the Guidance Department and College Counselors	August 2011	
Nancy Konisky <i>HR and Business Manager</i>	Responsible for school finances and Human Resources	January 2012	February 2016
Liana McLaren <i>Interim Business Manager</i>	Responsible for school finances (and Human Resources through June 2016)	February 2016	
Darlene Skiotis <i>Human Resources Manager</i>	Manages personnel training, relations, records, staffing, etc.	June 2016	
Sara Snow <i>Director of Accountability, MCAS Coordinator</i>	Oversee state/federal compliance, MCAS, Administrative Liaison to Board of Trustees	January 2011	
Eric Lane <i>Facilities Director</i>	Responsible for maintenance of three school buildings and campus security	September 2011	
Maureen Evans <i>Director of Marketing and Outreach</i>	Responsible for community outreach and marketing development	September 2011	

<b>TEACHERS AND STAFF ATTRITION FOR THE 2015-2016 SCHOOL YEAR</b>				
	<b>Number as of the last day of the 2015-2016 school year</b>	<b>Departures during the 2015-2016 school year</b>	<b>Departures at the end of the school year</b>	<b>Reason(s) for Departure</b>
Teachers	78	5	12	2 terminated, 14 resigned, 1 retired
Other Staff	32	4	2	2 terminated, 3 resigned, 1 moved out of the area

<b>BOARD MEMBERS FOR THE 2015-16 SCHOOL YEAR</b>				
<b>Name</b>	<b>Position on the Board</b>	<b>Committee affiliation(s)</b>	<b>Number of terms served</b>	<b>Length of each term (including date of election and expiration)</b>
Pauline Jen Ryan	Chair	Executive Governance Finance	First term Second term	6/14/12 – 6/30/16 7/01/16 – 6/30/19
Rick Kamal	Vice Chair	Executive Governance	First term	4/17/14 – 6/30/17
Thomas Taverna	Treasurer	Executive Finance	First term Second term	9/19/12 – 6/30/16 7/01/16 – 6/30/16
Allyson Hope Cohen	Secretary	Executive Governance	First term Second term	4/25/13 – 6/30/16 7/01/16 – 6/30/19
Craig Holbrook	Trustee		First term Second term	10/22/09 – 10/22/13 10/23/13 - 10/22/16
Chris O'Keeffe	Trustee	Fundraising	First term	11/21/13 – 6/30/17
Scott Ladner	Trustee	Fundraising	First term	4/17/14 – 6/30/17
Michael Glass	Trustee	Finance	First term	11/20/14 – 6/30/18
Ev Reynolds	Trustee	Governance	First term	11/20/14 – 6/30/18
Ken Estabrook	Trustee	Education	First term	12/15/14 – 6/30/18
Liz Saul	Parent Rep	Education	First term Second term	7/01/15 – 6/30/16 7/01/16 – 6/30/17
Jessica E. Bowen	Faculty Rep	Education	First term Second term	6/19/14 – 6/30/15 7/01/15 – 6/30/16
Roger Jarrett	Trustee	Governance Fundraising	Second term, <i>expired</i>	11/18/08 – 11/18/15

## Appendix D Additional Information

### Key Leadership Changes

Position	Name
Board of Trustees Chairperson	Pauline Jen Ryan, no change
Charter School Leader	Dr. Joseph McCleary, no change
Principal (resigned)	Dr. Michael Curry, left 6/30/16
Principal	Erin O'Connor, as of 7/01/16
Vice Principal	Erin O'Connor, through 6/30/16
Vice Principal	Search in progress
Special Education Director	Michael McIntyre, left 9/05/15
Special Education Coordinator	Erin Pasternak, hired 9/10/15
Special Education Co-Coordinator	Camilla Huston, hired 7/01/16
MCAS Test Coordinator	Sara Snow, no change
SIMS Coordinator	Judy Wing, no change
ELL Teacher	Maria Arteaga
Business Manager	Nancy Konisky, left 2/12/16
Interim Business Manager	Liana McLaren, as of 2/16/16
Human Resources Manager	Darlene Skiotis, hired 6/01/16
Dean of Students	Michael Nawrocki, no change
Dean of Students (Middle School)	Benjamin Keeler, hired 6/27/16

### Facilities

The Advanced Math and Science Academy has not relocated or acquired a new facility within the charter school's current charter term.

### Enrollment

The estimated student application deadline and lottery date for students who are interested in enrolling for the 2017-2018 school year:

Action	Date
Student Application Deadline	January 2 , 2017
Lottery	February 17 , 2017

## Conditions

On February 13, 2015 the Commissioner renewed the charter of the Advanced Math and Science Academy Charter School (AMSA) with conditions pertaining to governance and school leadership.

**Condition 1:** Beginning in March of 2015 and until further notice, AMSA must submit to the Department of Elementary and Secondary Education (Department), board meeting agendas, materials and minutes prior to each board meeting at the same time that these items are sent to the school's board members. Additionally, if board materials do not already include this information, the school must also submit monthly financial statements.

*Since March 2015, all documentation provided to AMSA Board members has also been provided to the Department on a monthly basis. **Status: Met/Ongoing***

**Condition 2:** By June 30, 2015, the school shall provide the Department with an evaluation of its leadership structure, an organizational chart, with accompanying job descriptions, and a plan to fully staff the administrative structure.

*On June 30, 2015, the school submitted a brief evaluation of its leadership structure, an organizational chart, and job descriptions for administrative positions. The evaluation of the school's leadership structure indicated intent to hire for vacant administrative positions. In August of 2015, the Executive Director hired a Principal and Vice Principal. **Status: Met***

**Condition 3:** By October 31, 2015, the school's board of trustees must have completed a comprehensive self-evaluation of its practices and its capacity.

*The Board used BoardOnTrack software to complete the self evaluation in October, 2015. The evaluation tool gathered data on the following topics: board meetings, structure, composition, recruitment, and goals and accountability. **Status: Met***

**Condition 4:** By December 31, 2015, the school's board of trustees must engage in training conducted by an external consultant, acceptable to and approved in advance by the Department, on the roles and responsibilities of a board of trustees for a charter school and on the Open Meeting Law.

*Open Meeting Law training was conducted by Attorney Joseph Bartulis during the December 17, 2015 board of trustees meeting. The Department granted approval for BoardOnTrack to conduct ongoing trainings on the roles and responsibilities of a board of trustees. **Status: Met***

In a June 15, 2016 memorandum to the Board of Elementary and Secondary Education (Board), the Commissioner recognized that the school had met the conditions imposed during renewal. Based on evidence gathered from regular reports of the school's board of trustees, a targeted site visit conducted in April 2016, and ongoing correspondence from members of the school's community, the Commissioner informed the Board of his intent to modify and extend the conditions placed on AMSA's charter. The new conditions placed on the AMSA's charter are as follows:

**Condition 1:** Until further notice, AMSA must submit to the Department, at [charterschools@doe.mass.edu](mailto:charterschools@doe.mass.edu) or 75 Pleasant Street, Malden, MA 02148, board meeting agendas, materials, and minutes prior to each board meeting at the same time that these items are sent to the school's board members. Additionally, if board materials do not already include this information, the school must also submit monthly financial statements.

**Condition 2:** By September 30, 2016, AMSA's board of trustees will create or select an evaluation system for the executive director to ensure regular, systematic, measureable, and transparent evaluation that aligns with best practices and provides the school leader with robust supervision and evaluation.

**Condition 3:** By September 30, 2016, to ensure regular, systematic, measureable, and transparent evaluation, AMSA will create or select an evaluation system for school leadership including, but not limited to, the principal and vice principal.

## Complaints

In May 2015, five separate complaints were received by the Board against the Interim Executive Director and an administrative employee. The complaints allege workplace harassment, violation of privacy, age discrimination, sexual orientation discrimination, retaliation and unprofessional and unethical conduct. Because the nature of the complaints was similar, all five complaints were assigned to a single task force to investigate the complaints against the Interim Executive Director. However, complaints against the administrative employee are outside of the Board's purview and were redirected to the Interim Executive Director. Two of the complaints were described in the 2014-2015 annual report. The third complaint was from an employee alleging that the Interim Executive Director unfairly prevented the complainant's supervisor from issuing a letter of recommendation. The complainant did not respond to multiple inquiries by the Board Chair and by the task force assigned to investigate the complaint. This matter is an ongoing school management issue, and not within the Board's jurisdiction, so the complaint was shared with the Interim Executive Director and the new Executive Director. In a separate action taken by the Board at the May 21, 2015 Board meeting, the Board authorized the incoming Executive Director to review all personnel decisions made since his selection as Executive Director on April 7 and to uphold, amend or reverse any decisions.

Based on the complainant's failure to respond to repeated attempts to make contact, it was concluded that these actions addressed the complaint. The fourth complaint was from an employee against the Interim Executive Director and the complainant's supervisor alleging an unjustified verbal warning; the complainant lodged an addendum to the original complaint alleging retaliation in a personnel action. The task force assigned to investigate the complaint determined that the Interim Executive Director had authority over operations and was authorized to make disciplinary decisions. The task force also determined that the Interim Executive Director was not aware of the complainant's identity and did not act in retaliation. The Board agreed with the task force findings and these two complaints were considered closed as of July 2015. The fifth complaint was filed by an employee against the Interim Executive Director and an addendum to the complaint was lodged alleging retaliation by withholding a bonus. The task force assigned to investigate the complaint determined that the Interim Executive

Director had authority over the operations of the school which included making or overseeing compensation decisions. Further, the task force acknowledged the perception of retaliation but found that no retaliation actually occurred. The task force further noted that this series of complaints prominently feature a single key administrative staff member and all complainants refer to a similar cultural problem within AMSA administration. The Board accepted the task force findings and considered the final complaint closed in August 2015.

In June 2015, the Board received a complaint from an employee alleging an Open Meeting Law violation for comments made at the May 28, 2015 Board meeting. The Governance Chair directed the employee that allegations of Open Meeting Law violations are to be submitted according to the process described by the Attorney General. A task force assigned to investigate the complaint found that no violation of Open Meeting Laws occurred, but there exists a need to strike a balance between transparency and openness while respecting privacy and noted that the Governance Committee is in the process of revising the Board Complaint Policy A-105. The Board agreed with the task force finding and closed the complaint in August 2015.

In November 2015, the Board received a complaint from a parent alleging the school improperly rescinded enrollment of their child based on inaccurate residency information. A task force was assigned to investigate this complaint; one of the task force members attempted to reach the complainant without response. The parent subsequently contacted the Massachusetts Department of Elementary and Secondary Education (Department) who investigated the matter and determined that the school was in compliance with M.G.L. c 76 § 5, and 603 CMR 1.05 and that there was no violation of education law, regulation or policy with regard to the specific concerns raised; the Department closed the complaint as of March 4, 2016. The Board accepted the Department's findings on the matter and closed the complaint as well.

In February 2016, the Board received an anonymous complaint. The Chair consulted with the Department on how to handle this. It was determined that no action can be taken on anonymous complaints. The Governance Committee is revising Board Complaint Policy A-105 to clarify that anonymous complaints will not be accepted.

In February 2016, a complaint was received by an employee, which was subsequently withdrawn after discussion with the Governance Committee Co-Chair. The Board follows a specific complaint procedure that includes an initial step in the process that first determines if the matter is within the purview of the Board. This initial step also allows the complainant to decide if they want to submit a formal complaint which becomes a matter of public record.

In May 2016, the Board received a complaint alleging a civil rights violation. A task force has been assigned to investigate this complaint and this investigation is ongoing.

In June 2016, the Board received a complaint alleging a civil rights violation. A task force has been assigned to investigate this complaint this investigation is ongoing.

**AP SCORE SUMMARY 2016**  
Advanced Math and Science Academy Charter School (221349)

School Totals for this View	5	4	3	2	1	Total Exams
<b>Number of Exams</b>	196	166	131	68	20	581
Percentage of Total Exams	34%	29%	23%	12%	3%	100%
Number of AP Students	124	134	108	64	20	

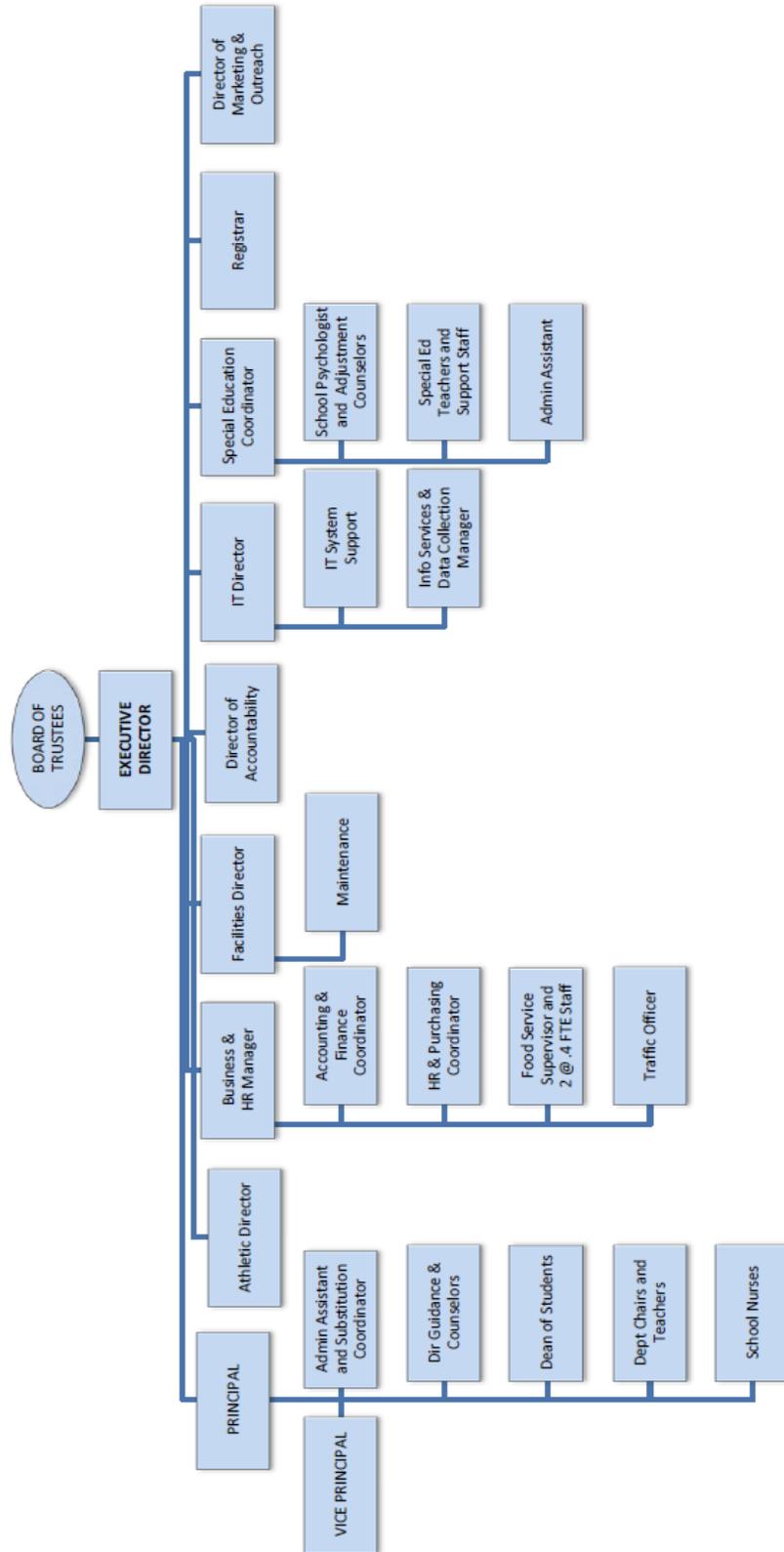
Exam Name	Number of Exams	Average Score
Biology	52	2.87
Calculus AB	54	3.93
Calculus BC	36	4.50
Chemistry	24	3.63
Computer Science A	55	3.76
English Language Composition	52	4.25
English Literature and Composition	17	4.06
European History	13	3.15
French	6	4.50
Latin	6	4.00
Macro Economics	35	3.49
Physics C: Electricity and Magnetism	29	3.17
Physics C: Mechanics	33	3.79
Psychology	32	4.16
Spanish Language	21	3.67
Statistics	27	3.74
Studio Art: 2D	7	3.29
Drawing	2	2.50
US Government and Politics	40	3.95
US History	33	3.97

## Attachment 2

**AP DATA YEAR TO YEAR AVERAGE SCORES**  
Advanced Math and Science Academy Charter School (221349)

<b>AP Subjects</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
Biology	2.87	3.60	3.89	3.55	3.53	3.48	2.87
Calculus AB	4.07	4.67	4.28	4.61	4.74	4.26	3.93
Calculus BC	4.75	4.89	4.95	4.89	4.97	4.87	4.50
Chemistry	3.90	3.67	4.33	4.50	4.04	3.81	3.63
Computer Science A	-	-	4.75	4.55	4.25	4.23	3.76
English Language and Composition	-	4.00	4.71	4.44	5.00	4.68	4.25
English Literature and Composition	3.84	3.96	4.00	4.00	3.97	4.39	4.06
European History	3.28	2.43	3.77	4.23	3.89	2.89	3.15
French	-	3.20	-	-	-	-	4.50
Latin	-	3.17	-	4.67	3.50	4.00	4.00
Macro Economics	-	-	-	-	3.29	3.45	3.49
Physics C: Electricity and Magnetism	-	3.38	3.69	3.73	3.73	4.61	3.17
Physics C: Mechanics	-	3.89	4.29	4.36	4.55	4.83	3.79
Psychology	-	-	-	-	3.84	3.43	4.16
Spanish	-	2.80	4.33	3.60	4.57	3.46	3.67
Statistics	-	3.82	3.67	2.10	3.05	3.33	3.74
Art: 2D Drawing	-	-	-	-	-	2.91 3.67	3.29 2.50
US Gov and Politics	-	4.07	4.56	4.00	3.79	3.24	3.95
US History	4.06	3.96	4.31	4.68	4.62	4.43	3.97

AMSA Administration Organizational Chart 2015-2016



AMSA Administration Organizational Chart 2016-2017

