

PART I - ELIGIBILITY CERTIFICATION

The signatures on the first page of this application certify that each of the statements below concerning the school's eligibility and compliance with U.S. Department of Education, Office for Civil Rights (OCR) requirements is true and correct.

1. The school configuration includes one or more of grades K-12. (Schools on the same campus with one principal, even K-12 schools, must apply as an entire school.)
2. The school has made Adequate Yearly Progress (AYP) or its equivalent each year for the past two years and has not been identified by the state as "persistently dangerous" within the last two years.
3. To meet final eligibility, the school must meet the state's AYP requirement or its equivalent in the 2012-2013 school year. Meeting AYP or its equivalent must be certified by the state. Any AYP status appeals must be resolved at least two weeks before the awards ceremony for the school to receive the award.
4. If the school includes grades 7 or higher, the school must have foreign language as a part of its curriculum and a significant number of students in grades 7 and higher must take foreign language courses.
5. The school has been in existence for five full years, that is, from at least September 2007 and each tested grade must have been part of the school for that period.
6. The nominated school has not received the Blue Ribbon Schools award in the past five years: 2008, 2009, 2010, 2011 or 2012.
7. The nominated school has no history of testing irregularities, nor have charges of irregularities been brought against the school at the time of nomination. The U.S. Department of Education reserves the right to disqualify a school's application and/or rescind a school's award if irregularities are later discovered and proven by the state.
8. The nominated school or district is not refusing Office of Civil Rights (OCR) access to information necessary to investigate a civil rights complaint or to conduct a district-wide compliance review.
9. The OCR has not issued a violation letter of findings to the school district concluding that the nominated school or the district as a whole has violated one or more of the civil rights statutes. A violation letter of findings will not be considered outstanding if OCR has accepted a corrective action plan from the district to remedy the violation.
10. The U.S. Department of Justice does not have a pending suit alleging that the nominated school or the school district as a whole has violated one or more of the civil rights statutes or the Constitution's equal protection clause.
11. There are no findings of violations of the Individuals with Disabilities Education Act in a U.S. Department of Education monitoring report that apply to the school or school district in question; or if there are such findings, the state or district has corrected, or agreed to correct, the findings.

PART II - DEMOGRAPHIC DATA

All data are the most recent year available.

DISTRICT

1. Number of schools in the district 0 Elementary schools (includes K-8)
 0 Middle/Junior high schools
 5 High schools
 0 K-12 schools
 5 Total schools in district
2. District per-pupil expenditure: 16374

SCHOOL (To be completed by all schools)

3. Category that best describes the area where the school is located: Suburban
4. Number of years the principal has been in her/his position at this school: 24
5. Number of students as of October 1, 2012 enrolled at each grade level or its equivalent in applying school:

Grade	# of Males	# of Females	Grade Total
PreK	0	0	0
K	0	0	0
1	0	0	0
2	0	0	0
3	0	0	0
4	0	0	0
5	0	0	0
6	0	0	0
7	0	0	0
8	0	0	0
9	52	29	81
10	39	32	71
11	36	40	76
12	37	32	69
Total in Applying School:			297

6. Racial/ethnic composition of the school: 0 % American Indian or Alaska Native
4 % Asian
2 % Black or African American
0 % Hispanic or Latino
0 % Native Hawaiian or Other Pacific Islander
94 % White
0 % Two or more races
100 % Total

Only the seven standard categories should be used in reporting the racial/ethnic composition of your school. The final Guidance on Maintaining, Collecting, and Reporting Racial and Ethnic data to the U.S. Department of Education published in the October 19, 2007 *Federal Register* provides definitions for each of the seven categories.

7. Student turnover, or mobility rate, during the 2011-2012 school year: 1%
This rate is calculated using the grid below. The answer to (6) is the mobility rate.

Step	Description	Value
(1)	Number of students who transferred <i>to</i> the school after October 1, 2011 until the end of the school year.	0
(2)	Number of students who transferred <i>from</i> the school after October 1, 2011 until the end of the school year.	2
(3)	Total of all transferred students [sum of rows (1) and (2)].	2
(4)	Total number of students in the school as of October 1, 2011	297
(5)	Total transferred students in row (3) divided by total students in row (4).	0.01
(6)	Amount in row (5) multiplied by 100.	1

8. Percent of English Language Learners in the school: 0%
Total number of ELL students in the school: 0
Number of non-English languages represented: 0
Specify non-English languages:

9. Percent of students eligible for free/reduced-priced meals: 1%
 Total number of students who qualify: 15

If this method does not produce an accurate estimate of the percentage of students from low-income families, or the school does not participate in the free and reduced-priced school meals program, supply an accurate estimate and explain how the school calculated this estimate.

The percent to above question is .05.

10. Percent of students receiving special education services: 0%
 Total number of students served: 0

Indicate below the number of students with disabilities according to conditions designated in the Individuals with Disabilities Education Act. Do not add additional categories.

<u>0</u> Autism	<u>0</u> Orthopedic Impairment
<u>0</u> Deafness	<u>0</u> Other Health Impaired
<u>0</u> Deaf-Blindness	<u>0</u> Specific Learning Disability
<u>0</u> Emotional Disturbance	<u>0</u> Speech or Language Impairment
<u>0</u> Hearing Impairment	<u>0</u> Traumatic Brain Injury
<u>0</u> Mental Retardation	<u>0</u> Visual Impairment Including Blindness
<u>0</u> Multiple Disabilities	<u>0</u> Developmentally Delayed

11. Indicate number of full-time and part-time staff members in each of the categories below:

	<u>Full-Time</u>	<u>Part-Time</u>
Administrator(s)	<u>1</u>	<u>0</u>
Classroom teachers	<u>25</u>	<u>1</u>
Resource teachers/specialists (e.g., reading specialist, media specialist, art/music, PE teachers, etc.)	<u>1</u>	<u>0</u>
Paraprofessionals	<u>0</u>	<u>0</u>
Support staff (e.g., school secretaries, custodians, cafeteria aides, etc.)	<u>12</u>	<u>0</u>
Total number	<u>39</u>	<u>1</u>

12. Average school student-classroom teacher ratio, that is, the number of students in the school divided by the Full Time Equivalent of classroom teachers, e.g., 22:1 12:1

13. Show daily student attendance rates. Only high schools need to supply yearly graduation rates.

	2011-2012	2010-2011	2009-2010	2008-2009	2007-2008
Daily student attendance	97%	97%	97%	97%	97%
High school graduation rate	100%	100%	100%	100%	100%

14. **For schools ending in grade 12 (high schools):**

Show percentages to indicate the post-secondary status of students who graduated in Spring 2012.

Graduating class size:	<u>72</u>
Enrolled in a 4-year college or university	<u>98%</u>
Enrolled in a community college	<u>2%</u>
Enrolled in vocational training	<u>0%</u>
Found employment	<u>0%</u>
Military service	<u>0%</u>
Other	<u>0%</u>
Total	<u>100%</u>

15. Indicate whether your school has previously received a National Blue Ribbon Schools award:

No

Yes

If yes, what was the year of the award? Prior to 2000

PART III - SUMMARY

The Marine Academy of Science and Technology is a public high school open to students throughout the State of New Jersey who are interested in marine science or systems engineering studies. The school's mission is to create literate, moral, productive members of society empowered to meet the challenges of a global community by providing a specialized course of study in a unique academic setting. Nestled between Sandy Hook Bay and the Atlantic Ocean, the school's location provides the optimal environment for its specialized programs. All students engage in a four-year college preparatory program with a strong focus on academic and workplace readiness skills. Classes in thirteen buildings, including two computer labs, a floating marine science lab, MAST's 65' research vessel, and a wet laboratory located in the National Oceanic and Atmospheric Administration's research facility create a dynamic campus where students from rural, suburban, and urban locations unite to create a diverse learning community. Students pursue a rigorous college preparatory curriculum culminating in a capstone senior research project that affords them the opportunity to work with professional mentors. A strong technology curriculum augments the focus on scientific research by teaching logical approaches to problem-solving and design implementation. Additionally, all students are enrolled in Naval Junior Reserve Officer Training Corps (NJROTC). The NJROTC program is a distinguishing feature of MAST that strengthens the sense of community, as it allows students from all grades to work together, teaches leadership skills, and supports and expands our focus on the marine environment.

The Marine Academy of Science and Technology has achieved many milestones since its establishment in 1981. Thirty-two years ago New Jersey was 8th in the nation for marine-based revenue, but marine themed education was nonexistent. Created to fill that void, the Marine Academy has become a beacon for the development of marine themed programs at other area schools and the creation of a similar specialized school in a neighboring county. Additionally, our exemplary model of a specialized focus for a high school has been replicated throughout our District to serve the needs and wider interests of Monmouth County. MAST's original program served students on two tracks—a college prep course of studies or a marine trades path, which was primarily vocational. A monumental step for MAST was its evolution into a rigorous college preparatory program that focused on academic, technical, and research based learning reflective of sophisticated university instruction and current workplace practices. Two sets of building renovations changed the landscape and character of MAST. These renovations resulted in the refurbished classrooms and laboratories that comprise MAST's campus. Of the many prestigious awards MAST has received, we are exceptionally proud of our selection to National Blue Ribbon status in 1998, only 17 years after the school's inception.

MAST's numerous strengths are a result of a combination of factors, both measurable and intangible. MAST's specialized focus in marine science and technology is a primary factor in the school's success. Students have made an informed decision to attend our school based upon their interests and academic inclinations. The thematic focus of our core strands determines a clear path of skills and knowledge, giving students the foundation for successful completion of all program requirements. The commitment of the faculty to student success is another major strength. The longevity of instructors and principal provide a sense of tradition and security to students, and although the majority of the staff has served the school for ten years or more, the most identifiable traits of every staff member are flexibility, accessibility, and dedication. MAST's unique environment has forged a sense of community that serves as our most important strength. The school setting engenders an unusual degree of unity of purpose as staff and students together adapt to the indiscriminate impulses of nature that affect our educational activities. Never were these strengths more acutely tried than in October 2012, when Hurricane Sandy devastated our school and displaced us to the temporary shelter of St. Joseph's Elementary School in Keyport. Despite this catastrophic interruption of our usual operation, MAST has pushed forward to maintain the quality of its courses, reestablish the spirit and integrity of our school's daily operation, and consider the time a hiatus in which we may evaluate how to refine our program when we return to Sandy Hook. The

overwhelming response of alumni from all years of our operation gave proof to the claim that we are a tight-knit community. Former and current students, without prompting, worked tirelessly at our new location to create a marine environment through bulletin boards, photographs, welcoming signs and assistance to staff members. This response demonstrated both the strengths of MAST and an unusual milestone: former MAST students attempted to give back the marine setting and ambiance to instructors and current students, as it was vitally important to them.

PART IV - INDICATORS OF ACADEMIC SUCCESS

1. Assessment Results:

The Marine Academy of Science and Technology (MAST) prides itself on the fact that students exceed the state goals and scores on standardized tests and that the level of rigor is much higher than most high schools in New Jersey. All juniors are required by the state of New Jersey to take the High School Proficiency Assessment. The tests evaluate student achievement in mathematics and English reading and writing. Student scores are reported as partially proficient, proficient or advanced proficient. Although well over half of our students achieve at the advanced proficiency level, we continually set the bar to achieve 100% advanced proficiency. Teachers continually evaluate instructional strategies to help reach this goal.

Admissions tests are administered as part of the enrollment process. Data from these tests is used to determine student placement in mathematics and world language courses to ensure students are placed at the appropriate level of instruction.

Staff members responsible for teaching Advanced Placement courses routinely review test results to inform and improve instruction. Student SAT scores are tracked and materials and curriculum are adjusted to improve scores. Additionally, our small class sizes allow staff members to gather anecdotal and individual observations of student achievement, as well as student difficulty. These observations are shared through grade level meetings, with guidance counselors and with parents. Common district assessments are another form of data being used to identify strengths and weaknesses in curriculum and instruction.

As a staff, teachers focus on academic areas and across all areas to review and reinforce the tested cluster groups. Math results have improved significantly from 2009 to 2012 showing an upward trend of 47% to Advanced Proficient in 2009 to 90% in 2012. Language Arts Literacy, like Math has demonstrated 100% scoring proficient and an increase from 50% advanced proficient in 2009 to 61% Advanced Proficient in 2012. Results of tests, data analysis, and other statistics guide curriculum and instructional practices that are infused in hands on learning and higher order thinking skills.

In 2010 the English staff formed a school wide Professional Learning Community (PLC) to address the issue of academic reading and pleasure reading. Research confirms the positive benefits between time spent reading for pleasure and student achievement. As a result, an emphasis was placed on a school wide program of dedicated time for reading.

MAST's staff takes pride in making certain that each student's individual needs are met. Weekly grade level meetings with staff are held to discuss special needs and concerns of students in academic difficulty. When issues are discovered, academic support is planned in a formal setting through a lunch academic study or to simply provide extra help as needed. The Monmouth County Vocational School District (MCVSD) and MAST supports a minimum level of proficiency of 77 and if a student is below that mark, a Pupil Improvement Plan (PIP) is put into place. This informs parents, teachers, and students that extra assistance is needed until the student achieves proficiency. The district uses the Powerschool program to report grades offering parents immediate access to their students' progress. The Student Performance Report, compiled by the State of New Jersey is available on the Department of Education Website.

2. Using Assessment Results:

MAST uses data driven decision making to consistently raise the level of rigor and to improve student achievement. Data analysis to improve student achievement is of the utmost importance to all staff. MAST uses the data collected to foster a better understanding of how our students achieve. Through

consistent review, conversation and the analysis of the results, the staff can make sound instructional decisions that will result in improved student achievement.

Data is used systematically through the collection and analysis of standardized academic assessments, school based assessments including common mid-terms and final examinations, indicators such as graduation rate, college acceptances, scholarships and more. Other important pieces of information that extend beyond classroom instruction such as student attendance, discipline referrals, and tardiness also help us to identify issues before developing an action plan. The data is collected and analyzed to help determine which areas of student performance have gaps between what is expected and actual student performance.

Analyzing data and making data driven decisions about instruction must be an ongoing, collaborative process. The goal is to improve the capacity to learn together. Through a school wide and community Strategic Planning Committee, areas of improvement have been identified. Individual Professional Learning Communities were formed to examine targeted areas. One such identified area, the lack of time to read for pleasure has led to the development and the implementation of a school wide objective to read daily with 26 minutes built into the daily schedule to “Just Read”. This is a baseline effort to share in the proven research that achievement improves over time through daily reading. This PLC committee will use this reading initiative to gather data hoping to demonstrate a correlation between reading for pleasure and improvement in reading comprehension on standardized tests.

Data regarding the accomplishments of our students is disseminated through the public media, district website, school publications, state assessments and grade reporting. Our school profile is a snap shot that contains all the essential components of our school data and information. Parents are informed of school information through the Principal’s Bulletin, school newspaper (MASTHEAD), articles acknowledging student awards and achievement, parent/teacher meetings and the school website.

3. Sharing Lessons Learned:

MAST staff writes curriculum, develops common exams and shares successful practices with other district teachers during Curriculum Focus Group meetings. The school is a member of the National Consortium for Specialized Secondary Schools of Mathematics, Science and Technology, and individual teachers hold memberships in the New Jersey Marine Education Association and the New Jersey Technology and Engineering Educators Association. One of our technology teachers has served as President and on the Board of Directors for the NJTEEA. She has presented workshops covering our Senior Technology Research course, as well as, her freshman buoyancy project and her new unit on biomimicry. One of our Marine Science Teachers is currently serving as President of the New Jersey Marine Education Association. Students from other schools and universities have participated in day-long research programs aboard the school’s research vessel, gaining insight into the marine environment as they conduct various science sampling techniques under the tutelage of MAST staff and students. MAST students also run a touch tank during the Ocean Fun Day sponsored by the New Jersey Marine Science Consortium and teach Marine Science to middle school students at the Student Ocean Summit sponsored by Clean Ocean Action. Data from fish stock assessment trawls are shared with the National Oceanic and Atmospheric Association (NOAA) as well as researchers around the world via an online database. The mentorships established during all senior research projects bring an awareness of the school’s methods to individuals in both the fields of science and technology. Student projects, such as organizing beach sweeps through Clean Ocean Action and habitat restoration of dunes by removing invasive species and planting native species, directly benefit the surrounding communities. Programs at MAST have been featured several times on New Jersey Network’s Classroom Close-up series with the most recent show about the directed field research project, The Interactive Herbarium, to be aired this February. The Herbarium Project collects indigenous plant species from various habitats, and places student drawings on a website which allows individuals to then identify plants and gain information using a smart phone QG Code. Though activities such as these, the school is able to share successful strategies with a wide range of audiences.

4. Engaging Families and Communities:

MAST's community cannot be defined by geographic boundaries. As an isolated facility drawing its students from forty municipalities, the school has had the unusual challenge of creating its own community. The result is a close-knit school community benefiting from a diversity of ideas, skills, and social patterns. School community is enhanced by an active PTSA whose activities bring the students and their parents together. The PTSA sponsors a Silent Auction, Family Picnic, Spaghetti Dinner, and fundraisers to provide college scholarships. They have also contributed funds for class trips as economic times forced budget cuts at the District level. A PTSA bulletin informs parents of school events and accomplishments. Powerschool affords parents easy access to student progress. Parents are encouraged to contact teachers, who welcome parental input and support to ensure student success. The large turnout at Back-to-School Night illustrates our parents' commitment to the program, exemplifying the importance of education to their students. Parent participation on the Strategic Planning Committee helps ensure that the needs of the students remain at the forefront of school change.

Creating our community continues with our immediate surroundings, through our relationships with the National Park Service, National Oceanic and Atmospheric Administration, (NOAA), New Jersey Marine Sciences Consortium, US Coast Guard, and Clean Ocean Action. These contacts include the use of a NOAA lab as one of our classrooms. They also provide mentors for some seniors. Additional mentors are obtained through the same resourcefulness that builds our community, since all seniors are required to engage in a year-long project working with mentors from the private sector. Parents, alumni, and teachers not only serve as mentors based on their fields of expertise, but also provide connections to a wider knowledge base. Working with professionals and adult stakeholders instills in students a mature understanding of workplace expectations and social interaction.

Articulation agreements with Richard J. Stockton College of New Jersey, Rider University, Monmouth University, Brookdale Community College and Georgian Court College offer additional options for mentors, essentially expanding the scope of our community. Those agreements also afford students the opportunity to earn college credit for their marine science courses. Local business leaders serve on advisory boards, keeping us informed of the needs of industry to ensure that our students are properly prepared. The lack of geographic identity by town and the heterogeneous mix of students predispose them to seek out resources, which affords them a more mature perspective than other high school students. MAST's proactive pattern of reaching beyond our facility has built an extended community that plays a prominent role in student learning.

PART V - CURRICULUM AND INSTRUCTION

1. Curriculum:

MAST's curriculum reflects its specialized nature while ensuring that students meet the Core Content Standards established by the state of New Jersey. Upon entering MAST, all students are required to complete 40 credits per year toward graduation. All courses are taught at the honors level, and strong academic performance, preparation for college, and career readiness skills are infused into those courses. In addition to core course requirements in English, history, mathematics, and foreign language, courses in both marine sciences and technology systems are required for the first three years. The Naval Science curricula, required for all students, addresses New Jersey's physical education mandate as well as providing instruction in topics including seamanship, navigation, astronomy and meteorology. Additionally, the battalion formation offers the opportunity to develop leadership skills. Since the structure of our program does not permit a formal arts curriculum, students complete an art-based project during their freshman year, and teachers in multiple disciplines incorporate art into their curriculum to ensure that the arts standards are addressed for all students.

Technological studies encourage students to develop a logical approach to problem solving and design implementation, a process they are introduced to freshman year. As sophomores, students learn Computer Aided Drafting (CAD) and by junior year students are applying their problem solving skills to design projects. While most courses follow an 80 minute, alternating block schedule, science classes meet each day enabling marine science instruction to be integrated with Biology, Chemistry and Physics. Classroom instruction is augmented through field study on land and aboard the school-owned vessel for at sea research. As seniors, students select a program strand that concentrates their study in the marine science, systems engineering or directed field research-a class incorporating elements of both science and technology. The year-long project requirement requires students to work with mentors from the private and public sector, enabling students to appreciate the expectations of industry while applying their academic knowledge, problem-solving and critical thinking skills. Seniors who enroll in Oceanography or Environmental Science have the option of earning college credits for those courses through a partnership with Brookdale Community College. Advanced Placement courses are available in Calculus and Physics.

MAST's co-curricular activities allow students to build upon their classroom experiences. Membership in the school's award winning competition teams: NJROTC's Drill Team, the Ocean Bowl Team, the Technology Student Association, and the Academic Team further support the school's academic programs. Extra-curricular activities also offer students the opportunity to explore other interests beyond the academic realm. Students can become involved with service-oriented projects through Key Club. Other clubs provide students with creative outlets including, Mock Trial, the Creative Arts Club and MASTHEAD, the school newspaper. The wide variety of experiences inside and outside the classroom allows our students opportunities to succeed and develop pride in their accomplishments. MAST exemplifies what good education should be for all students – rigorous academic standards for all students, mechanisms in place to support students, a highly engaged and motivated faculty, strong, active community and parent involvement and blended classroom and workplace learning. Through our focus on research, critical thinking and problem solving in all course work, we provide students with transferable skills that will ensure success in post-secondary education and in future careers. When our students leave us, they feel empowered to act for change. This sense of personal control and accountability is perhaps the most important attribute we provide.

2. Reading/English:

The English program is designed with and driven by the belief that a rich humanities background provides students with an added dimension to their intellectual and emotional development as well as with the tools for self-discovery. Courses examine literary solutions to the conflicts and dilemmas of the human

condition. The study of language arts encourages students to broaden their view of the world and experience perspectives that change, expand, and validate their own beliefs. The Marine Academy of Science and Technology's language arts program consists of college preparatory courses taught at the honors level. All courses emphasize vocabulary development, analytical reading, and sustained practice in writing in a variety of modes. Ninth and tenth grade classes focus on study skills, organization, the writing process, and introductory research skills. Eleventh and twelfth grade classes emphasize critical reading, expansion of the scope of reading selections, formal academic writing, formal literary research, creative writing and informal writing, bringing the skills they acquire at the freshman and sophomore level to fruition. English instruction is delivered using a student-based model. Lecture and direct instruction is generally brief, while students are given time to work individually or cooperatively with new concepts, skills or ideas. Students are required to participate in active discussion, presentations and group or individual projects that require communication to class members. Ultimately, the goal is to encourage students to become life-long learners, while fostering sensitivity, compassion, and ethical behavior toward others.

The faculty realizes that reading is a primary channel for student learning and requires a special emphasis. We have just embarked upon a new initiative that allows students to read for pleasure for sustained amounts of time (27 minutes, four days a week). Research indicates that students who read independently on a regular basis perform well on standardized tests and learn more from their courses. Surveys conducted by the Professional Development Committee returned results that show students and faculty welcome the opportunity to have time just to read. The District supports this initiative, allowing MAST to pilot the program for the second semester. Students and instructors will participate, with the only requirement being that students keep track of what and how much they are reading. Early in the process we will conduct a reading inventory as a pre-test. Later in the fourth marking period, we will administer a post-test.

3. Mathematics:

MAST requires students to take four years of math. Incoming freshmen take a placement test prior to entering MAST to determine their initial course assignment and course offerings typically range from Algebra I through AP Calculus BC, as well as Discrete Math for seniors. The distribution of students through the curriculum varies from year to year, and reflects the results of entrance tests. Currently, there are 30 freshmen taking Algebra I and 62 seniors taking one of three levels of Calculus. Projections are that between 50 and 65 seniors will be taking Calculus next year. Common core mathematics standards as defined by the State of New Jersey Board of Education are incorporated into each course. Concepts and methods covered in each course are applied, strengthened and enhanced in succeeding courses. The curriculum is designed to enable students to develop critical thinking skills, work effectively both individually and within a peer group, and to express their understanding of mathematics through active participation in class discussions.

A variety of instructional methods are used, including textbook assignments, PowerPoint presentations, web-based instruction, individual and group classroom activities, and project-based cooperative learning. Formative assessments, such as quizzes, problem sets, and daily assignments, are conducted on a regular basis, providing teachers and students with feedback about short-term mastery. Summative assessments such as chapter tests, midterm and final examinations measure the students' global understanding of course material.

Recognizing that learning styles differ, teachers maintain flexibility to help all students achieve success. A strong emphasis is placed on how mathematics is applied to real-world problems, particularly in the areas of business, economics and the natural sciences. The use of graphing calculators is an integral part of our curriculum, as students approach problems using both algebraic and graphical techniques. Students are encouraged and, in some cases, required to view and respond to material available on reliable web sites, both for preview and reinforcement of classroom concepts.

The department conducts Math Lab every day during lunch, enabling the students to come for additional instruction, makeup work, and peer tutoring, as well as after school one-on-one help session as needed by the individual student. Many students take advantage of this resource voluntarily while those identified as needing assistance may be assigned to come during part of their lunch period. Faculty members rotate the responsibility for this, insuring that the students are given the optimum opportunity to achieve to their fullest potential.

4. Additional Curriculum Area:

The Marine Science department's curriculum is central to the school's thematic purpose. All students are required to complete the first three years of the science curriculum. Each of the 10 credit courses, Marine Biology, Marine Chemistry and Marine Physics, addresses the science standards required by the State of New Jersey and augments the curriculum with standards specific to the marine science theme. The primary instructional strategy is hands-on experiential learning, which is highly appropriate because it so directly reflects the methods of professionals. In addition to traditional assessments such as tests and quizzes, research based work is required at all grade levels. Classroom instruction is enhanced through field study on land and the school-owned 65' research vessel, the RV Blue Sea. The immediate accessibility of the ocean and the beaches permits this in-depth field study. Students learn to properly collect samples, gather data, make in situ observation of the marine environment, as well as analyze the collected data and draw meaningful conclusions.

As seniors, students may select a program strand in Oceanography, Systems Engineering or Directed Field Research, which blends aspects of science and technology. Systems engineering students are scheduled for the environmental science course ensuring that all students meet the school's four-year science requirement. Alternatively, they may opt to enroll in Advanced Placement Physics, affording those students the ability to earn college credit based on their AP scores. Students who opt for oceanography are also enrolled in a research class that requires the completion of a yearlong, original research project, incorporating the knowledge and skills learned in previous years. All students work with mentors, who are professionals in environmental fields. Students have laboratory space at the James J. Howard Marine Science Laboratory, including a state of the art sea-water flow through system. Through this research, students have provided information on beach erosion, beach debris analysis and fish stock assessments to professional organizations such as the National Oceanic and Atmospheric Administration, New Jersey Department of Environmental Protection, and Clean Ocean Action as well as having their own research published in professional level peer reviewed journals. For the 2012-2013 school year students participated in multiple external competitions and symposia as a means of independent assessment of projects. Twenty-two students participated and earned 40 awards from ISEF (Intel Science and Engineering Fair) sponsored fairs, New Jersey Academy of Science, Monmouth Junior Science Symposium, New Jersey Academy of Science, and many others.

Our specialized focus is driven by our emphasis on applied learning and cooperative effort, and therefore appeals to all students. Scientific experiments and project design necessitate student involvement in their own learning. This involvement fosters critical thinking and problem-solving skills, while introducing them to the expectations of both college and the professional workplace.

5. Instructional Methods:

The school's focus on science and technology characterizes the school-wide approach to instruction. The hands-on experiential learning in both curricula directly reflects the methods of professionals. Students are instructed in boater safety, as well as in the procedures and skills needed to collect data of the caliber that can be used to compile government statistics. This training results in able-bodied, boat-savvy individuals, who can conduct at-sea research at the level necessary to become highly employable in the marine science field. The performance-based, process-oriented nature of these courses filters into all academic courses taught on campus. Instructors use interactive methodologies and encourage critical and analytical thinking in course work. These methods allow teachers to engage diverse learning styles, and

cooperative interaction with peers permits students to develop an appreciation of the talents of others and leads to a respect for individual diversity. Projects assist students in learning sound planning and organizational skills, as well as the responsibility and accountability necessary for college and the workplace. Through oral presentations, students become confident, poised public speakers. Working with mentors provides students with current practices and expectations of the scientific and business communities. The active pattern of reaching beyond our facility for resources and networking as they complete their research prepares students to seek out and maintain connections and relationships. Teachers employ traditional methods of assessment as well as performance-based evaluations that allow for a more complete view of student ability.

While teachers consistently establish rigorous standards for their students, they also provide the instruction necessary for success. Small class sizes permit teachers to identify students having difficulty. The diversity of educational approaches addresses multiple learning styles and teachers are proactive in their intervention strategies for students in academic difficulty. Academic assistance is offered after school by appointment. However, with no after-school busing, assistance is routinely offered during lunch. A math lab is open throughout lunch, and a lunch study program provides more structured time for those having difficulty. Teachers maintain contact with parents through e-mails, progress reports and conferences. Monthly grade level meetings permit sharing of information about projects and common concerns to ensure that all students receive appropriate academic and social assistance, including those with IEP/504 plans. Guidance counselors and the school nurse work with teachers and students to address specific educational or health concerns and will also contact parents as needed. The district does not have an established child study team, however one can be assembled from a group of qualified professionals within the district.

6. Professional Development:

MAST uses a coherent approach to professional development for teachers and other staff to ensure ongoing learning and student achievement. A school professional development committee in concert with the Monmouth County Vocational School District philosophy of learning has tailored individual and school-wide goals in the development of a Professional Improvement Plan to meet individual goals. Staff members developed Professional Learning Communities based on identified needs in student achievement. As a result of a PLC's investigation into the correlation between reading and student achievement, MAST has scheduled reading time within the school day. Another PLC was formed to examine methods to address concerns regarding senior performance and attitudes as they near graduation. The resulting program, entitled Senior Redesign, restructured senior year courses to model college expectations. Additionally, seniors were afforded special privileges and activities. From student faculty basketball games to Thanksgiving feasts, these activities offer the seniors the opportunity to make their final year special. The program has resulted in a cultural change, which has reinvested seniors in their commitment to the school.

The District provides days within the school year for designated professional development activities and ensures that staff meet the required training in areas such as bullying and drug prevention. MAST staff maintains a high level of instructional professional development to increase content knowledge and the improvement of teaching, learning and achievement. Staff members are encouraged to attend professional conferences, as well as being invited to be presenters.

Also available is the online PD360 program, a vehicle to assist staff with assessing strengths and weaknesses, as well as implementing change in instructional strategies. Teachers are supported by the Principal to ensure a continued commitment to ongoing learning. As a result teachers have attended workshops as diverse as Law-Related Education Seminars presented by the New Jersey State Bar Foundation, Celtic Studies on the Isle of Man, and the Teacher at Sea Program which provides educators the opportunity to live aboard oceanographic research vessels. These experiences have diversified classroom instruction. New curriculum, designed to improve student learning in Directed Field Research,

was developed through the creativity of staff members and has been recognized by NJEA in an award winning “Classroom Close Up.”

7. School Leadership:

Leadership begins with the principal who guides aspects of day-to-day life at the school. The principal has adopted a collaborative approach to the leadership, believing that shared ownership with those who will be most affected by decisions, results in broad-based support for those decisions. Empowerment of staff in large and small groups is encouraged. Using the school’s mission as the guiding focus, the staff identifies and prioritizes issues through the Instructional Council. Consisting of representatives from each department and the principal, the council meets as needed to discuss school-wide concerns. Through this exchange of ideas, the group works collectively toward the success of the task at hand. This leadership style fosters a climate that encourages a team approach to teaching and problem solving. In addition to their voices in Instructional Council, teachers are active participants in discussions within their District academic disciplines. These discussions guide curricular revision and instructional change.

Additionally, the school has been using the shared decision-making model guided by a Strategic Planning Committee consisting of parents, teachers, support staff and students to continue the school’s improvement and growth. MAST also interfaces with an Advisory Council of professionals who are mentors and advisors to our students in the marine science, technology and engineering fields. This Council works with teachers and students to maintain career readiness and keep it aligned with our curriculum. Teachers, in turn, are expected to guide and teach students to communicate effectively, to problem solve, become responsible individuals, and develop a strong sense of values and be guided by sound decision making. The Principal is visible and available throughout the school day. Teachers’ opinions are valued, as is that of the support staff, for the betterment of the overall school community.

PART VII - ASSESSMENT RESULTS

STATE CRITERION-REFERENCED TESTS

Subject: Mathematics

Grade: 11

Test: HSPA

Edition/Publication Year: 2012/2011/2010/2009/2008 Publisher: New Jersey Department of Education

	2011-2012	2010-2011	2009-2010	2008-2009	2007-2008
Testing Month	Mar	Mar	Mar	Mar	Mar
SCHOOL SCORES					
Proficient or Above	100	100	100	100	100
Advanced Proficient	90	82	77	78	66
Number of students tested	69	72	70	60	68
Percent of total students tested	100	100	100	100	100
Number of students alternatively assessed					
Percent of students alternatively assessed					
SUBGROUP SCORES					
1. Free/Reduced-Price Meals/Socio-economic Disadvantaged Students					
Proficient or Above	Masked		Masked	Masked	
Advanced Proficient	Masked		Masked	Masked	
Number of students tested	1		2	1	
2. African American Students					
Proficient or Above	Masked	Masked			
Advanced Proficient	Masked	Masked			
Number of students tested	1	1			
3. Hispanic or Latino Students					
Proficient or Above		Masked	Masked		
Advanced Proficient		Masked	Masked		
Number of students tested		3	3		
4. Special Education Students					
Proficient or Above					
Advanced Proficient					
Number of students tested					
5. English Language Learner Students					
Proficient or Above					
Advanced Proficient					
Number of students tested					
6. Asian					
Proficient or Above	Masked	Masked	Masked	Masked	
Advanced Proficient	Masked	Masked	Masked	Masked	
Number of students tested	5	3	3	3	
NOTES:					
Masked indicates data were not made public because fewer than 10 students were tested.					
Due to Superstorm Sandy, MAST was displaced and we are unable to access the subgroup records prior to the 2008-2009 school year.					

13NJ5

STATE CRITERION-REFERENCED TESTS

Subject: Reading

Grade: 11

Test: HSPA

Edition/Publication Year: 2012/2011/2010/2009/2008 Publisher: New Jersey Department of Education

	2011-2012	2010-2011	2009-2010	2008-2009	2007-2008
Testing Month	Mar	Mar	Mar	Mar	Mar
SCHOOL SCORES					
Advanced or Above	100	100	100	100	100
Advanced Proficient	61	65	60	50	45
Number of students tested	69	72	70	60	68
Percent of total students tested	100	100	100	100	100
Number of students alternatively assessed					
Percent of students alternatively assessed					
SUBGROUP SCORES					
1. Free/Reduced-Price Meals/Socio-economic Disadvantaged Students					
Advanced or Above	Masked		Masked	Masked	
Advanced Proficient	Masked		Masked	Masked	
Number of students tested	1		2	1	
2. African American Students					
Advanced or Above	Masked	Masked			
Advanced Proficient	Masked	Masked			
Number of students tested	1	1			
3. Hispanic or Latino Students					
Advanced or Above		Masked	Masked		
Advanced Proficient		Masked	Masked		
Number of students tested		3	3		
4. Special Education Students					
Advanced or Above					
Advanced Proficient					
Number of students tested					
5. English Language Learner Students					
Advanced or Above					
Advanced Proficient					
Number of students tested					
6. Asian					
Advanced or Above	Masked	Masked	Masked	Masked	
Advanced Proficient	Masked	Masked	Masked	Masked	
Number of students tested	5	3	3	3	
NOTES:					
Masked indicates data were not made public because fewer than 10 students were tested. Due to Superstorm Sandy, MAST was displaced and we are unable to access the subgroup records prior to the 2008-2009 school year.					

13NJ5