

***U.S. Department of Education***  
***2023 National Blue Ribbon Schools Program***

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[X] Public or [ ] Non-public

For Public Schools only: (Check all that apply) [ ] Title I [ ] Charter [X] Magnet [ ] Choice

Name of Principal Ms. Tara Amatrudo  
(Specify: Ms., Miss, Mrs., Dr., Mr., etc.) (As it should appear in the official records)

Official School Name Marine Science Magnet High School  
(As it should appear in the official records)

School Mailing Address 130 Shennecossett Road  
(If address is P.O. Box, also include street address.)

City Groton State CT Zip Code+4 (9 digits total) 06340-5117

County New London

Telephone (860) 446-9380 Fax (860) 446-9381

Web site/URL https://www.msmhs.com E-mail tamatrudo@learn.k12.ct.us

I have reviewed the information in this application, including the eligibility requirements on page 2 (Part I-Eligibility Certification), and certify, to the best of my knowledge, that it is accurate.

Date \_\_\_\_\_

\_\_\_\_\_  
(Principal's Signature)

Name of Superintendent\* Ms. Katherine Ericson E-mail kericson@learn.k12.ct.us  
(Specify: Ms., Miss, Mrs., Dr., Mr., Other)

District Name LEARN Tel. (860) 434-4800

I have reviewed the information in this application, including the eligibility requirements on page 2 (Part I-Eligibility Certification), and certify, to the best of my knowledge, that it is accurate.

Date \_\_\_\_\_

\_\_\_\_\_  
(Superintendent's Signature)

Name of School Board  
President/Chairperson Mr. Robert Mitchell  
(Specify: Ms., Miss, Mrs., Dr., Mr., Other)

I have reviewed the information in this application, including the eligibility requirements on page 2 (Part I-Eligibility Certification), and certify, to the best of my knowledge, that it is accurate.

Date \_\_\_\_\_

\_\_\_\_\_  
(School Board President's/Chairperson's Signature)

The original signed cover sheet only should be converted to a PDF file and uploaded via the online portal.

*\*Non-public Schools: If the information requested is not applicable, leave blank.*

## **PART I – ELIGIBILITY CERTIFICATION**

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The signatures on the first page of this application (cover page) certify that each of the statements below, concerning the school's eligibility and compliance with U.S. Department of Education and National Blue Ribbon Schools requirements, are true and correct.

1. All nominated public schools must meet the state's performance targets in reading (or English language arts) and mathematics and other academic indicators (i.e., attendance rate and graduation rate), for the all students group, including having participation rates of at least 95 percent using the most recent accountability results available for nomination.
2. To meet final eligibility, all nominated public schools must be certified by states prior to September 2023 in order to meet all eligibility requirements. Any status appeals must be resolved at least two weeks before the awards ceremony for the school to receive the award.
3. The school configuration must include one or more of grades K-12. Schools located on the same campus (physical location and mailing address) must apply as an entire school (i.e. K-8; 6-12; K-12 school). Two (or more) schools located on separate campuses, must apply individually even if they have the same principal. A single school located on multiple campuses with one principal must apply as an entire school.
4. The school has been in existence for five full years, that is, from at least September 2018 and each tested grade must have been part of the school for at least the three years prior to September 2022.
5. The nominated school has not received the National Blue Ribbon Schools award in the past five years: 2018, 2019, 2020, 2021 or 2022.
6. The nominated school has no history of testing irregularities, nor have charges of irregularities been brought against the school at the time of nomination. If irregularities are later discovered and proven by the state, the U.S. Department of Education reserves the right to disqualify a school's application and/or rescind a school's award.
7. The nominated school has not been identified by the state as "persistently dangerous" within the last two years.
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. The nominated school has, or is subject to, a nondiscrimination policy (provide either a link to the policy or submit a text of the policy), is committed to equal opportunity for all students and all staff consistent with applicable law and does not have any outstanding findings of unlawful discrimination. The U.S. Department of Education reserves the right to disqualify a school's nomination and/or rescind a school's award if unlawful discrimination is later discovered.

12. 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.

**The U.S. Department of Education reserves the right to disqualify a school's nomination and/or rescind a school's award if one of these eligibility requirements is later discovered to have not been met or otherwise been violated.**

## PART II - DEMOGRAPHIC DATA

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**Data should be provided for the current school year (2022-2023) unless otherwise stated.**

**DISTRICT** (Question 1 is not applicable to non-public schools. For charter schools: If a charter school is part of the public school system, information should be provided for the public school district. If a charter school is considered its own district or part of a charter district, the information provided should reflect that.)

1. Number of schools in the district (per district designation):
- 2 Elementary schools (includes K-8)  
0 Middle/Junior high schools  
1 High schools  
0 K-12 schools
- 3 TOTAL

**SCHOOL** (To be completed by all schools. **Only include demographic data for the nominated school, not for the district.**)

2. Category that best describes the area where the school is located. If unsure, refer to NCES database for correct category: <https://nces.ed.gov/ccd/schoolsearch/> (Find your school and check “Locale”)

☐ Urban (city or town)  
☒ Suburban  
☐ Rural

3. Number of students in the school as of October 1, 2022 enrolled at each grade level or its equivalent at the school. Include all students enrolled, in-person, participating in a hybrid model, or online only. If online schooling or other COVID-19 school issues make this difficult to obtain, provide the most accurate and up-to-date information available:

Grade	# of Students
PreK	0
K	0
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	76
10	75
11	61
12 or higher	59
Total Students	271

\*Schools that house PreK programs should count preschool students **only** if the school administration is responsible for the program.

4. Racial/ethnic composition of the school (if unknown, estimate):
- 0.7 % American Indian or Alaska Native
  - 3.7 % Asian
  - 1.5 % Black or African American
  - 18.5 % Hispanic or Latino
  - 0 % Native Hawaiian or Other Pacific Islander
  - 66.4 % White
  - 9.2 % Two or more races
  - 100 % Total**

(Only these seven standard categories should be used to report 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.)

5. Student turnover, or mobility rate, during the 2021 - 2022 school year: 4%

If the mobility rate is above 15%, please explain:

N/A

This rate should be calculated using the grid below. The answer to (6) is the mobility rate.

Steps For Determining Mobility Rate	Answer
(1) Number of students who transferred <i>to</i> the school after October 1, 2021 until the end of the 2021-2022 school year	0
(2) Number of students who transferred <i>from</i> the school after October 1, 2021 until the end of the 2021-2022 school year	12
(3) Total of all transferred students [sum of rows (1) and (2)]	12
(4) Total number of students in the school as of October 1, 2021	271
(5) Total transferred students in row (3) divided by total students in row (4)	0.04
(6) Amount in row (5) multiplied by 100	4

6. Specify each non-English language represented in the school (separate languages by commas):

Spanish

English Language Learners (ELL) in the school: 2 %

6 Total number ELL

7. Students eligible for free/reduced-priced meals: 33 %

Total number students who qualify: 90

8. Students receiving special education services with an IEP: 10 %  
Total number of students served 27

Indicate below the number of students with disabilities according to conditions designated in the Individuals with Disabilities Education Act. Do not add additional conditions. All students receiving special education services with an IEP should be reflected in the table below. It is possible that students may be classified in more than one condition.

<u>2</u> Autism	<u>0</u> Multiple Disabilities
<u>0</u> Deafness	<u>0</u> Orthopedic Impairment
<u>0</u> Deaf-Blindness	<u>8</u> Other Health Impaired
<u>0</u> Developmental Delay	<u>11</u> Specific Learning Disability
<u>4</u> Emotional Disturbance	<u>2</u> Speech or Language Impairment
<u>0</u> Hearing Impairment	<u>0</u> Traumatic Brain Injury
<u>0</u> Intellectual Disability	<u>0</u> Visual Impairment Including Blindness

9. Students receiving special education services with a 504: 17 %  
Total number of students served: 47

10. Number of years the principal has been in the position at this school: 3

11. Use Full-Time Equivalents (FTEs), rounded to the nearest whole numeral, to indicate the number of school staff in each of the categories below. If your current staffing structure has shifted due to COVID-19 impacts and you are uncertain or unable to determine FTEs, provide an estimate.

	Number of Staff
Administrators	2
Classroom teachers, including those teaching high school specialty subjects, e.g., third grade teacher, history teacher, algebra teacher.	22
Resource teachers/specialists/coaches e.g., reading specialist, science coach, special education teacher, technology specialist, art teacher etc.	4
Paraprofessionals under the supervision of a professional supporting single, group, or classroom students.	1
Student support personnel e.g., school counselors, behavior interventionists, mental/physical health service providers, psychologists, family engagement liaisons, career/college attainment coaches, etc.	3

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

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

Required Information	2021-2022	2020-2021	2019-2020	2018-2019	2017-2018
Daily student attendance	80%	75%	94%	95%	93%
High school graduation rate	100%	94%	98%	100%	99%

14. **For high schools only, that is, schools ending in grade 12 or higher.**

Show percentages to indicate the post-secondary status of students who graduated in Spring 2022.

Post-Secondary Status	
Graduating class size	66
Enrolled in a 4-year college or university	76%
Enrolled in a community college	6%
Enrolled in career/technical training program	15%
Found employment	3%
Joined the military or other public service	0%
Other	0%

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

Yes ☐ No ☒

If yes, select the year in which your school received the award.

16. In a couple of sentences, provide the school's mission or vision statement.

The vision is for MSMHS Graduates to employ problem solving, communication, self-directed learning, and community engagement in order to ensure sustainability and equity for themselves, their communities, and the environment.

17. Provide a URL link to the school's nondiscrimination policy.

[chrome-extension://efaidnbmninnibpcajpcgclefindmkaj/https://cdns5-ss16.sharpschool.com/UserFiles/Servers/Server\\_106939/File/BOD/Policies%20and%20Procedures/Series%205000/Series%205000%20Policy%205004%20Revised.pdf](chrome-extension://efaidnbmninnibpcajpcgclefindmkaj/https://cdns5-ss16.sharpschool.com/UserFiles/Servers/Server_106939/File/BOD/Policies%20and%20Procedures/Series%205000/Series%205000%20Policy%205004%20Revised.pdf)

18. **For public schools only**, if the school is a magnet, charter, or choice school, explain how students are chosen to attend.

MSMHS students are randomly selected through a lottery process that is open to all Connecticut residents. Each year, an online application process is open from October through January. During that time, the school partners with sending middle schools from the Southeastern CT region to visit with prospective students and their families. MSMHS also hosts a number of on site information sessions and tours that are primarily led by our current students, who serve as Student Ambassadors. There is no entry exam or any academic (or other) requirement for admission. The school typically fills approximately 70 9th grade seats and approximately 5 sophomore seats depending on availability. The CT State Department of Education allows MSMHS to enroll and be funded for 271 total students each year.

## PART III – SCHOOL OVERVIEW

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The MSMHS community is composed of a diverse set of students and families from approximately 30 towns throughout Connecticut. As a magnet school, MSMHS explicitly seeks to enrich high quality learning experiences through the integration of students across racial, cultural, and socioeconomic backgrounds. Since the school's inception, it has encouraged and supported students in accessing rigorous academic content that will maximize their access and future success at the post-secondary level. Meanwhile, a small student body allows the school to cultivate meaningful relationships that motivate students to strive for growth within a supportive environment. As a school of choice, students come to MSMHS for a variety of reasons. Our Marine Science theme and specialized resources are especially interesting to some. Some incoming students are aware of the school's reputation for successfully connecting students to challenging academics and are looking to access those opportunities. Others are students coming from towns with schools that have limited resources. These students may not feel motivated by the thematic or academic programming, but they see MSMHS as an opportunity to access a higher quality education. Finally, quite a few students choose MSMHS because they truly need a fresh start in a new school with a new group of peers, often due to feelings of not belonging at their previous school. The inclusive nature of the community is highly supportive of students who don't fit as easily into some traditional school environments.

Strategies used to support students in meeting their full potential are grounded in MSMHS's established beliefs about how students learn best. Teachers actively support students in practicing a growth mindset, encouraging and modeling learning from mistakes through feedback, support, and new learning. Students are encouraged to push themselves academically with the understanding that they will have opportunities for improvement. The school balances this academic mindset with a foundation of strong relationships and support through intentionally practicing a variety of SEL and culturally responsive practices. MSMHS works to actively encourage student voice, choice, and agency both in the classroom and in the greater programming of the school. Students are often able to engage in tasks that allow them to follow their own interests and curiosity, which drives their motivation and encourages them to achieve at higher levels. The school also sees students leading the formation of student clubs, activities, and student forums that empower them to guide the school in a direction that is meaningful to them. From the time they enter 9th grade, MSMHS students are taught how to communicate with each other in an accountable manner. The Accountable Talk model from the Institute for Learning is implemented in every course across every subject area. Using this model supports students in leading active, deep communication, whether that is in a formal classroom discussion, or an everyday interaction in the cafeteria. Students know how to respectfully question each other, add their perspective, and seek to understand their peers.

Advisory programming is another key strategy leveraged for student success. Advisory groups of about 12 students to 1 teacher stay together as a small community within the school for all four years of high school. Groups meet during scheduled time twice a week for 40 minutes each. The time begins with a brief full-school "Great Hall" meeting that allows the whole school to connect on key issues, celebrations, and events important to the community. Then, groups disperse and participate in advisory lessons and activities that support a variety of learning priorities - from healthy relationships, to post-secondary planning, to collaboratively planning school events. Advisors connect with parents of their advisory students at least 4 times per year. One of these occasions is for a student-led conference in which each student reflects on their growth and describes their future goals for their advisor and a family member or other trusted adult. This has been a powerful driver of connecting families into their child's learning and the greater school community.

The Marine Science theme combined with a strong social justice mission lend themselves to a wide variety of highly relevant, active, hands-on learning experiences both in the school facility and in the greater community. Students frequently engage in learning that puts them directly in touch with the marine environment, whether that is raising marine life in our aquaculture lab or conducting research on a vessel in the Long Island Sound. Notably, students in MSMHS Aquaculture courses maintain a self-sustaining coral propagation business that grows a wide variety of coral species and markets and sells their products through vendor fairs and bulk orders from area businesses. MSMHS students also study the social and



environmental needs of the community and collaborate to create and carry out action plans to address those needs. For example, our Environmental Club is currently consulting with local municipal officials to plan a youth climate form that will result in an action plan that will be implemented in the community.

## **PART IV – CURRICULUM AND INSTRUCTION**

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### **1. Core Curriculum, Instruction, and Assessment.**

#### **1a. Reading/English language arts curriculum content, instruction, and assessment:**

MSMHS English courses are designed to promote college-ready literacy through curriculum, instruction, and assessment aligned to the CCSS.

All MSMHS 9th graders take English 1, a heterogeneous course designed to promote literacy and achievement through enriched experiences in literature, writing, speaking, and listening. The heterogeneous nature of the course is important to gathering data that allows us to understand and address student literacy needs given that all of our students are new to us and have likely had variation in how and what they learned in their sending district. This is key to our mission for equitable outcomes for all our students. The content in English 1 explores the major concepts of Humanity, Archetypes, Conflict, and Perception through the close reading and analysis of selected novels, short stories, nonfiction, and poetry. Students gain perspectives and communicate their understanding and ideas through classroom discussion, oral presentations, and formal and informal writing experiences. Composition instruction focuses on using the writing process in creative, logical, and critical modes, as well as frequent practice in all aspects of the writing process.

In sophomore year, students may be placed in either English 2 or English 2 Honors. Both courses are designed for students to further develop their literacy skills, with the honors level course exploring a wider range of genres and more frequent and extended writing in a variety of modes. Both courses challenge students to rigorously engage with the text and each other, including through student-centered discussions. The curricula in these courses compliment the curricula in the sophomore social studies courses - World Maritime History and UConn ECE World Maritime History.

In junior and senior years, students have the opportunity to challenge themselves to UConn Early College Experience (ECE) Composition and/or AP Literature and Composition. Both courses expose students to college-level expectations for reading, writing, speaking, and listening. The ECE Composition course is a required first-year writing course for the University of Connecticut and many other colleges that includes 25% studio work with an emphasis on peer review and feedback. The AP Literature course focuses on poetry and fiction and is conducted in a seminar format. Both courses include required summer work and a rigorous final assessment.

Juniors and Seniors who do not elect to take the courses above also have access to rich coursework. English 3 explores the major concepts of cause and effect, migration, social inequality, innovation, change, prosperity, patterns, conflict, and community as evident in both nonfiction and fiction published at various times in American history. Through a variety of activities, close readings, and informal as well as formal analyses, students develop a comprehensive understanding of the evolution of our national cultural identity against the background of world events. English 4 examines the theme of the Individual's Search for Meaning which includes the exploration of the concepts of memoir and the sense of self, human resilience in the struggle against evil, future visions and the absurd. These text-based course is designed to prepare students for the reading, reflecting, discussing, and writing they will encounter on the college level. The course provides a survey approach to the traditional literary genres of novel, short story, poetry, drama, memoir, essay, and nonfiction. These approach allows for differentiation and encourages seniors to discover areas of interest they might wish to pursue in their college studies.

#### **1b. Mathematics curriculum content, instruction, and assessment:**

All math courses are aligned to the CCSS and are sequenced in a way to maximize preparation for further study in the STEM fields. Students entering the school in 9th grade may be placed in Algebra 1, Geometry, and/or Algebra 2 Honors depending on their readiness. Students needing skill reinforcement and experience in Algebra concepts in preparation for Algebra 1 are placed in a double section of math that introduces

prealgebra in the first semester and algebra concepts in the second semester. This puts all students on track to complete at least one math course beyond Algebra 2 before they graduate, a key indicator of college success. The majority of 9th grade students, however take either a traditional Algebra 1 or Geometry course based on credits and recommendations from their sending school. Some advanced 9th graders choose to double up in math courses, taking both Geometry and Algebra 2 Honors. This puts those students on track to complete AP Calculous BC, our highest level math course offered, before they graduate.

Beyond Algebra 1, Geometry, and Algebra 2/Algebra 2 Honors, most students go on to take Pre-Calculus or Pre-Calculus Honors. Pre-Calculus includes a reinforcement of Algebra 2 skills, rational equations, radical expressions on rational exponents, functions, exponential and logarithmic functions, circles, right triangle trigonometry, the unit circle, and trigonometric functions. The use of the graphing calculator is an integral component of the course and helps build a deeper understanding of the concepts. Pre-Calculus Honors is designed to prepare students for a rigorous college level calculus course and/or the Advanced Placement options available at MSMHS. Students are expected to demonstrate individual initiative, independent study, and a high level of commitment to the study of mathematics. In addition to the use of graphing calculators, technology allows the course to focus on exploration, problem solving, and multiple representations to build a deeper understanding of algebraic techniques.

Following the pre-calculus courses, students have several options. AP/UConn ECE Calculous AB requires students to understand an abstract approach to the theorems and applications of calculus. It follows the AB syllabus of the Advanced placement program and prepares students for success on both the AP exam and the exams required by UConn. The goal of the AP Calculous sequence is to provide students with a rigorous course in differential and integral calculus prior to their entrance to college and to provide students with an opportunity to earn college credit in mathematics. Another elective, AP Statistics requires students to think about designs of the studies which produced the data they are analyzing and to consider the possible effect of outlying observations on their conclusions. This course follows the national AP Statistics curriculum. The goal is to introduce students to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. As previously mentioned, the highest level math course offered at MSMHS, Calculous BC, includes all topics covered in Calculous AB plus additional topics focusing on the calculus of functions of a single variable. Consistent with AP philosophy, concepts are expressed and analyzed geometrically, numerically, analytically, and verbally. Students taking any of our AP courses in mathematics are required to take the corresponding Advanced Placement exam.

Finally, a popular option for students from a broad range of math levels is Real World Math and Statistics, a full year course that focuses on mathematics applied to solving practical problems in a variety of disciplines in the world around us. Topics include probability, statistics, financial mathematics, linear programming, cryptography, problem solving and logic puzzles, and voting theory. Students use problem solving skills to collect and analyze data to help make informed decisions about real world mathematical issues. Instruction and assessment in this course is frequently project-based, collaborative, and includes presenting thoughts and products to authentic audiences.

### **1c. Science curriculum content, instruction, and assessment:**

The typical Marine Science Magnet High School student graduates with more credits in science than any other subject area. The program of studies in science combines courses focusing on traditional science content with those that immerse students in various aspects of the marine science theme. All courses are aligned to the NGSS, and teachers use instructional and assessment strategies that complement the NGSS model. There is a consistent focus on the NGSS Science and Engineering Practices as a foundation for all MSMHS science courses. The freshman course load includes three full-year science courses. Integrated Science is a college prep course that offers students learning opportunities across the life, physical, and earth sciences by providing engaging, authentic experiences in the interdisciplinary connections that bridge science and society. In Biology, students are expected to apply effective scientific strategies to topics such as bio-molecules in cells, the structure of nucleic acids, protein synthesis, and genetics. The course also serves as an introduction to high school laboratory techniques necessary for success in more advanced courses. Marine Studies I introduces students to Ocean Literacy through a variety of classroom engineering and design projects, lab dissections, water quality experiments, and fieldwork.

The sophomore course load also includes three science courses. First is either college prep level Environmental Science or UConn ECE Environmental Science. Both courses explore human interaction with the environment and teach the skills and knowledge needed to address biological issues that are important and relative to their lives and the society in which they live. Sophomores also take a chemistry course. Chemistry Honors is for students interested in exploring science and engineering pathways. Conceptual Chemistry develops student understanding of the scientific process and how to apply it to science and everyday situations. In Marine Studies II, sophomores experience a more in-depth exploration into aquaculture and boating skills. Students learn to become competent navigators through a study of tides, currents, small boat handling, and aids to navigation.

MSMHS juniors all take either Marine Science or UConn ECE Marine Science: Introduction to Oceanography. Both courses examine issues related to marine conservation and relevant impacts of the ocean on the lives of humans and wildlife, with the ECE course diving deeper into ocean chemistry, ocean circulation, waves, and biological productivity. The remaining courses available to students in their junior and senior years include a range of traditional AP, honors, and college prep courses (AP Biology, AP Chemistry, Physics Honors, Human Anatomy and Physiology, and Forensics alongside several elective courses that bring students deeper into the field of Marine Science. In Aquarium Science, Advanced Aquarium Research Honors, Aquaculture Resource Management, and Aquaculture IV, students engage in immersive learning within the school's professional grade aquaculture lab. In these courses, students research aquatic animal husbandry industries, engage in authentic research, and interact with businesses, customers, and local experts in the field. Two additional UConn ECE courses, The Sea Around Us, which takes a more interdisciplinary approach to Ocean Literacy, and Horticulture and Design, which introduces students to horticultural plant propagation and the floral industry.

#### **1d. Social studies/history/civic learning curriculum content, instruction, and assessment:**

The MSMHS Social Studies curriculum also combines a combination of traditional high school content paired with courses that speak more specifically to school's marine science theme and its commitment to equity and social justice. Freshmen take Civics and Environmental Stewardship, a full-year course that focuses on the need, purpose, and structure of government, the law-making process, an understanding of the rights and responsibilities of citizenship, and current events. Each unit also highlights the roles of government and citizens in maintaining the environment and solving environmental problems. Students work to develop skills in reading, writing, and Accountable Talk through argumentative writing assignments and class discussion. Sophomores take either college prep World Maritime History or UConn ECE World Maritime History. Both courses focus on how the sea has served as a highway, a source of food, an arena for warfare, and a stage for discovery. Throughout the year, students gain an understanding that the history of the world has been shaped by interactions with the sea. In junior year, students take either college prep United States History or AP/UConn ECE United States History, with the AP/ECE sections taking a more challenging, accelerated approach to exploring U.S. History in a model that simulates a true college course experience.

Additional electives available to students in their junior and senior year include AP Psychology, AP Microeconomics, AP Art History, and African American/Black and Puerto Rican/Latino Studies.

#### **1e. For schools that serve grades 7-12:**

Students at MSMHS have access to a broad spectrum of dual credit and advanced placement courses that allow a wide range of students to access college level coursework within the supportive environment of a high school. We have consistently been ranked in the top 10 for early college access in the state of Connecticut, most recently ranking second with 100% of 2022 graduates having taken courses for college and career readiness. Knowing that students who begin college courses in high school are more likely to successfully continue to post secondary learning, we make it a priority to connect each student with these opportunities according to their individual strengths and interests. AP and UConn ECE courses are offered across all subject areas, with a total of 19 courses in this category.

Student leadership and agency is encouraged in all aspects of our programming. After school club offerings are generated based on student interest, and students take on leadership roles in these groups. In addition to traditional elected student leadership roles like Student Council and National Honor Society, students run our Food Advisory Council, School Advisory Council, and the Racial Equity Action League (REAL). As a magnet school, student recruitment is an important component of our work. The MSMHS Student Ambassadors are a group of students who take the lead in recruitment events describing our school experience to prospective students and families and exemplifying the confident leadership skills our students develop.

Students further explore career interests through our advisory program as well as through participation in the coral aquaculture business described above, individualized internship opportunities in and outside of school, and a required 40 hour community service minimum. The school counseling department includes two full time counselors for our small student body, allowing them to give highly individualized support in the post-secondary planning process.

**1f. For schools that offer preschool for three- and/or four-year old students:**

**2. Other Curriculum Areas:**

**2a. Arts (visual and/or performing)**

The original operations plan for MSMHS was designed with a focus on hands-on work within the field of marine science similar to a vocational-agriculture model. With that in mind, fine arts instruction is embedded into a number of courses with a focus on connections between art and nature through concepts of design, drawing, photography, and film. By graduation, 100% of students earn 1.0 credit in fine arts through this model.

**2b. Physical education/health/nutrition**

MSMHS has one full time certified Health and PE teacher who plans and implements instruction through several models. All Health and PE content is aligned to Connecticut's Healthy and Balanced Living Framework with a focus on sustainable models for living a healthy life. While some PE lessons focus on more traditional athletic skills, many are designed to foster social-emotional learning through teamwork, strategy, and goal-setting. The school's robust advisory programming includes lessons that directly address required content in the CT framework, which our teacher delivers and assesses through creative and engaging lessons. For example, this year's senior class researched topics of their choice based on their goals for a healthy lifestyle. They presented their learning to their peers and teachers through a Wellness Fair, which included a engaging activities and games to draw them into the topic.

**2c. Foreign language(s), if offered (if not offered, leave blank)**

Spanish 1, 2, 3, and UConn ECE Spanish are offered at MSMHS. The school employs two full-time Spanish teachers. Students wishing to explore other world languages may request for the school to accept transfer credits for accredited high school or college level coursework.

**2d. Technology/library/media**

Technology education is embedded into most of the MSMHS curricula. All students are issued a new laptop upon entering the school, which serves as an essential learning tool throughout their high school career. All coursework is organized on an online platform, and students use shared documents and cloud computing on an ongoing basis. Technology is further evident in specialized courses. Marine Studies II includes the use of 4 military-grade boating simulators that put students in the captain's seat to navigate the local waters in highly realistic conditions. Other courses use technology to implement innovative instructional techniques,

like the use of podcasting as a mode of communication in UConn ECE English Composition. Students looking for a more explicit technology education experience may take AP Computer Science Principles, which fosters computational thinking and invites students to understand how computing changes the world through the development of computational artifacts and using technology and programming as a means to solve problems.

## **2e. Any other interesting or innovative curriculum programs you would like to share**

In addition to the specialized facilities, resources, and experiences currently included in MSMHS's programming, the school is currently working to expand the marine science theme by specifying three college and career pathways students that will give students access to even more individually relevant and engaging coursework. In the Policy, Advocacy, and Education pathway, students will build an understanding of environmental sustainability and social justice in order to positively impact their community. They will gain an understanding of the systems that contribute to the current environmental and social conditions and learn how to use legislation, activism, and education to enact change. Students will bring their learning to the community through civic action, community service, and community education. The Fieldwork, Aquaculture, and Research pathway is closest to the school's current programming. In these courses, students will interact directly with the marine environment in order to study current conditions and conduct fieldwork and research that supports conservation and sustainability. In this pathway, students may find themselves out on the water, on the local shoreline, or in the aquaculture laboratory engaging in hands-on research and problem solving. Finally, The Business, Industry, and Technology pathway will allow students to apply their understanding of marine science to design, construct, and employ technology that supports environmental and economic sustainability. This will include hands-on experience in everything from scientific research to marine related manufacturing. Students will also explore business and entrepreneurship practices that support economic, environmental, and social sustainability. This work is being funded by the United States Department of Education through a Magnet Schools Assistance Program (MSAP) grant for the purpose of continuing to reduce racial isolation and increase equitable learning outcomes and opportunities for students in our region.

## **3. Academic Supports**

### **3a. Students performing below grade level:**

Knowing the significant discrepancies in student achievement results among the school's sending towns, MSMHS implements instructional models that balance high expectations with differentiated or universal access to all coursework. All teachers implement core instruction that is informed by data and based in high leverage, research-based practices. To close any persisting gaps, the school implements a system of skills assessment and intervention programming. All students' academic and social-emotional needs are monitored on an ongoing basis by MSMHS's Student Support Team (SST), which is composed of the school's Lead Interventionist, school counselors, clinical staff, administrators, and the school nurse. The team reviews data to determine which students are in need of additional interventions, and then collaborates to create and implement student intervention plan (SIP) that specifies measurable intervention targets and explicit intervention strategies. Students not showing a response to intervention at increasing levels of intensity may be referred to a 504 or Planning and Placement Team meeting to determine possible eligibility.

Examples of resources and supports in place for students performing below grade level include access to the school's Math Lounge, which is staffed with math teachers during four blocks of the schedule as well as before school daily. This allows students to work directly with a math teacher on any current or precursor skills needed to support their success, typically during a study hall or before school. Students needing intensive intervention in reading, writing, or other learning skills may be assigned to work with the Lead Interventionist to close specific skill gaps identified through SST. This may take place during a student's study hall, or the interventionist may push into an academic class to support an individual or small group.

### **3b. Students performing above grade level:**

The rigorous nature of the MSMHS curriculum is well suited to students performing above grade level. These individuals may elect to take a full schedule of AP and early college courses, setting them up for accelerated programming at the post-secondary level. Within all MSMHS courses, however, students have opportunities to drive their own learning through inquiry and extend topics through enrichment. Additionally, opportunities for independent study may be approved by administration. This allows students with particular gifts or talents to further their learning in these areas even if they are not in the school's planned program of studies.

### **3c. Students with disabilities:**

MSMHS subject area teachers collaborate with special education teachers and 504 case managers to ensure all students have appropriate access to the school's curricula and programming. Special education teachers provide students with direct instruction toward IEP goals and objectives in the regular education classroom environment as well as in a resource setting through a class called Seminar. Acting as case managers, special education teachers and school counselors also support teachers in implementing accommodations and modifications for individuals as required. Having seen an increase in the prevalence of emotional disabilities like anxiety and depression, MSMHS employs a full time clinical staff member (either a social worker or school psychologist) to provide direct counseling services to individuals and small groups. Other related service professionals, such as speech and language pathologists, Board Certified Behavior Analysts, and Occupational Therapists are assigned through the district office to implement services with students as required by their individual plans.

### **3d. English Language Learners:**

The school employs a full time teacher of multi-lingual learners (MLL) to support English language development and academic success for the school's identified MLL students. The MLL teacher pushes into academic courses to support comprehension and vocabulary as well as to model MLL strategies for the classroom teachers. Identified MLL students with more limited English proficiency also receive direct, individual language development instruction from this teacher. While the school's MLL population is relatively small at this time, it is anticipated to grow in the coming years. Having a full time MLL teacher now allows our teachers to build their skills in this area now to better meet this need in the future.

### **3e. Other populations, if a special program or intervention is offered:**

## **PART V – SCHOOL CLIMATE AND CULTURE**

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### **1. Engaging Students:**

Actively engaging students in their learning is crucial to the academic, social, and emotional growth of high school students. The MSMHS faculty and administration work to establish a sense of community and togetherness that contributes toward overall student engagement and success in school. Simple elements of our schedule, like whole-school Great Hall Meetings and Advisory twice a week serve to keep students connected to the school, each other, and their teachers. MSMHS further supports student engagement through numerous activities and events that promote positivity and pride for the school. Special theme weeks, like "Shark Week", encourage class and school spirit through friendly competition and fun activities paired with fundraising or social awareness campaigns. Other annual traditions include the Lip Dub, Field Day, Penny Wars, Thanksgiving Drive, Homecoming, Winter Ball, Red Cross blood drives, cultural heritage celebrations, staff-student basketball game, Earth Day events, and more build community and give students opportunities to lead efforts that are exciting to them. Underclassmen see the pride and excitement in older students when these events come around each year, and it drives a sense of community that students report promotes a positive school environment.

The school culture is also one that is generally academically motivated. The combination of rigorous academics in the context of highly relevant, thematic programming draws students into learning. While some MSMHS students come naturally driven toward high achievement, others find that they are motivated by supportive peers and teachers to commit to academic success in a way they may not have in the past. Knowing they have opportunities for improvement and revision, students take risks to engage in more challenging courses than they otherwise may have, and their success in those courses builds efficacy for their success in others. Being a small school community, students do not fall through the cracks. Teachers get to know their students' strengths, interests, and challenges through formal and informal interactions, and they leverage that knowledge to connect individually with each student. The MSMHS faculty is currently working to implement additional curriculum units, learning tasks, and assessments that give students voice and choice in what they learn, how they learn it, and how they demonstrate that learning to others. Students frequently report these opportunities are more interesting and motivating.

### **2. Engaging Families and Community:**

MSMHS relies heavily on family and community support to achieve success. Engaging families at a magnet high school can be challenging due to the geographic spread where students come from and a lack of transportation or time for some families. For that reason, MSMHS uses electronic communication to keep families informed of important school events, information, policies, and celebrations. Between the school website, planful full-school or class-specific emails, an electronic newsletter, and a messaging app, the school is able to get critical information to families, usually in their preferred language. True engagement, however, requires two-way communication that facilitates partnership between the school and families for their child's success. These partnerships begin with recruitment events, Accepted Families Night, and New Student and Family Orientation, which allow families direct access to school staff, administration, and each other to build relationships from the beginning. Beyond that, MSMHS works to bring families into the school to celebrate their children through our cultural events, awards ceremonies and inductions, and displays of student learning. More targeted family engagement comes through student-led conferences (described earlier), post-secondary planning meetings, and team meetings with school faculty and administration to build plans to support students who are struggling. Beyond this, the MSMHS PTO is highly engaged and active. They host monthly community dinner events as well as at least two full-school community events each fall and spring.

Community partnerships are also a cornerstone of programming at MSMHS. As members of nearby Project Oceanology, MSMHS students access Project O's resources and expertise to enhance their learning in and out of the classroom. Students will also soon have opportunities to intern with area partners and participate in their summer programming. Also nearby, the University of Connecticut's Marine Sciences Department at Avery Point connects our teachers and students to the university labs and is leveraging relationships among



our faculty to benefit learning at both schools. New England Science and Sailing provides opportunities for MSMHS students to bring their boating skills on the open water under the supervision of their trained instructors. The school frequents local businesses and restaurants owned by past and present MSMHS families. Additional partnerships with organizations like The Mystic Aquarium, Mystic Seaport, area aquatic businesses, The Garde Arts Center, The Thames River Heritage Park, local municipal leaders, and many more have enriched learning for students at MSMHS time and time again.

### **3. Creating Professional Culture:**

MSMHS and LEARN district administration strongly believe that prioritizing educator growth and leadership is a critical component to school success. Through layered systems of professional learning and collaboration, teachers have the opportunity to grow their practice and expand their expertise throughout their teaching career. At MSMHS, professional learning and leadership primarily occur through scheduled whole-school professional development days, weekly faculty meetings, common planning time in professional learning communities (PLCs), and the school leadership team. All of the learning and experiences in these models are aligned to the school's development plan and organized using a coherence document that tracks the implementation of professional learning priorities. Much of the collaboration and learning conducted in these various formats ties into teacher development goals, which in turn directly support the success of the larger school development plan. Of all these professional models, teachers consistently report their time in subject area PLCs to be most beneficial to their day to day practice. Each week, PLCs have one block for open planning and collaboration on work of their choice and one block to work toward a specific objective. This work is often a follow-up to topics addressed in a faculty or leadership team meeting and is facilitated by subject area teacher leaders, known as Instructional Team Leaders.

Furthermore, the school administration is supportive of teachers seeking to further expand their knowledge and skills through off-site workshops and conferences. In the 2022-23 school year, a team of teachers is attending a series of interactive workshops on grading reform for educational equity. The group is then turnkeying their learning into optional afterschool workshops for their colleagues, growing a grass-roots team of early adopters for innovative assessment and grading. MSMHS teachers are also encouraged to showcase their work on the national level. This fall, two MSMHS aquaculture teachers participated in the largest aquaculture conference in the country by speaking on a panel of educators and sharing their work as vendors of their student-grown coral. These opportunities to explore their interests and passions as professionals drives their motivation and expands their expertise.

As a school associated with a Regional Educational Service Center (RESC), MSMHS faculty and administration also have access to the breadth and depth of expertise and professional learning programming offered at the district level. LEARN's Department of Teaching and Learning conducts professional learning workshops on curriculum, instruction, and assessment, family engagement, social-emotional learning, and any other topics that surface as regional needs.

### **4. School Leadership:**

The MSMHS administration believes in a distributed leadership model that allows for shared decision-making and collaboration throughout the organization. The role of the MSMHS principal is primarily to identify and lead priorities for school improvement in the areas of teaching and learning, school climate and culture, educator professional development and evaluation, and systems for effective operation. Budgeting, hiring, and communications, and community relations are also primarily responsibilities of the principal. In addition to taking a supporting role in the responsibilities of the principal, the assistant principal is primarily responsible for matters of student supervision and behavior management, direct support for teacher needs, follow-up on tasks assigned to teachers, attendance monitoring and intervention, managing substitute teachers, and planning and organizing Advisory programming. The assistant principal also oversees the work of several club advisors and project leaders and is instrumental in the day-to-day operations of the school. MSMHS also works directly with a Supervisor for Student Support Services, who is scheduled at the school full time, but who works directly with special education and related service personnel, facilitates PPT meetings, and coordinates the programming and services for the school's identified students.

In addition to the administrators, the formal School Leadership Team is composed of 3 Instructional Team Leaders, 3 cross-disciplinary coordinators, and a Magnet Theme Coach. There is one Instructional Team Leader for Humanities (English and Social Studies), one for Science, and one for Math/Spanish. These teacher leaders serve as a touchstone between administration and department area teachers to facilitate work in PLCs, support teacher needs, and advise the administration on school development initiatives. The Technology Coordinator supports the implementation of technology integration throughout the school and advises the administration on matters pertaining to technology. The Student Intervention Coordinator develops and organizes the systems for student intervention and facilitates Student Support Team meetings. The NGSS Coordinator supports the development of curriculum, instruction, and assessment that aligns to the Next Generation Science Standards and supports teachers in preparing students for success on the NGSS exam through data analysis, coaching, and curriculum support. The Magnet Theme Coach is responsible for managing the implementation and documentation of the curriculum development, instructional practices, and systemic reforms outlined in the federal MSAP grant referenced in an earlier section. This includes a combination of direct work with faculty, fostering community partnerships to support the theme, and creating systems for collecting and communicating the work the school is doing to meet the requirements of the grant.

Multiple other formal and informal leadership roles as club advisors, student leadership advisors, mentors, and liaisons are available to school staff. Suggestions for new leadership opportunities are also encouraged.

## **5. Culturally Responsive Teaching and Learning:**

MSMHS strives to employ best practices in culturally responsive and equitable education across school settings. The school's equity improvement team identifies and studies areas of need based on various sources of data and implements improvement cycles to address those needs. One particular area of work in progress is a re-evaluation of assessment and grading practices to ensure equity and inclusion at all levels and implement more master-based learning systems. In a broader sense, consistent messaging supporting diversity, equity, and inclusion is a key function of MSMHS. It is evident in the school's established core values, beliefs about learning, and vision of the graduate. The ongoing development of curricular and extracurricular programming that educates students about matters of social justice and how to take action for change will serve to further solidify these values in the future. The school actively works to diversify its curriculum and resources to reflect diverse authors, characters, and experts in the field. Hiring and recruitment practices are attuned to the importance of students' access to diverse educators.

The school has also initiated the creation of a student-led group, the Racial Equity Action League - REAL, to promote equity and drive agency for students in this area. By elevating the voices of its diverse students, MSMHS opens communication pathways that further enhance belonging, awareness, and action for social justice and racial equity. In the 2022-23 school year, students led the planning and implementation of two schoolwide cultural celebrations - the Hispanic Heritage Celebration and a Lunar New Year celebration. Both events brought joy and pride for our diversity centerstage.

The MSMHS faculty has participated in professional learning sessions on understanding bias and responding to incidents of discrimination or bias. Reading, discussion, videos, and workshops in the past three years have focused on building confidence and competence in talking with students, staff, and families about matters pertaining to race and equity, and it will remain a priority in years to come.

## **PART VI - STRATEGY FOR EXCELLENCE**

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At Marine Science Magnet High School, the one most instrumental element of success has been to actively and tirelessly work to uphold the mission of magnet schools - to ensure educational equity and excellence for every student. That means taking time to know and understand each individual who walks into the school in 9th grade - away from home and friends and unsure of what this new experience will bring - and to leverage that understanding to maximize their academic and social-emotional growth every step of the way. To achieve this, the school has layers of systems that collect and accumulate data, build trusting relationships, connect to needed interventions, and inspire engagement in new learning. Knowing students don't come to MSMHS starting on an even playing field academically, the school is strategic about using the 9th grade year to identify and minimize gaps through universal practices like partnering with their families, teaching executive functioning skills, consistent expectations, access to teacher support, and an engaging curriculum. The school also works to build a culture of belonging, respect, and understanding through Advisory programming, embedded SEL practices in classrooms, and common experiences.

Along the way, students learn they will be challenged to meet high expectations but that it will be in an environment that encourages growth and opportunities for improvement over single instances of success or failure. They learn to trust their teachers to support them if they take an academic risk and to be resilient when it doesn't go their way. As students encounter successes, their self-efficacy grows, and their motivation to seek academic challenge and new learning experiences increases. This cycle of understanding students and meeting them where they are, challenging their growth, supporting their success, and motivating them for greater challenge constantly plays out repeatedly for each student at MSMHS until they are set up to maximize their post-secondary opportunities and confidently select the path that is best for them.

It must be noted that the expertise and dedication of the faculty at MSMHS is a critical factor in this equation. Teachers are committed to the mission and to the layers of work that go into it. They constantly model that same cycle of pushing themselves to grow their practice within a supportive community to optimize their students' success. They do this because they sincerely care about their students, and they take their work extremely seriously. In the end, MSMHS graduates and their families know their teachers had their backs every step of the way as they pushed themselves to overcome their challenges.