



**RISING TIDE CHARTER PUBLIC SCHOOL
2021-2022 ANNUAL REPORT**

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**2021-2022 ANNUAL REPORT
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Introduction to the School

Rising Tide Charter Public School (RTCPS)			
Type of Charter	Commonwealth	Location	Plymouth
Regional or Non-Regional	Regional	Districts in Region	Barnstable, Bourne, Carver, Duxbury, Falmouth, Freetown-Lakeville, Halifax, Kingston, Marion, Marshfield, Mashpee, Mattapoisett, Middleborough, Old Rochester (Marion, Mattapoisett, Rochester), Pembroke, Plymouth, Plympton, Rochester, Sandwich, Silver Lake (Halifax, Kingston, Plympton), Wareham
Year Opened	1998	Year(s) Renewed	2003, 2008, 2013, 2018
Maximum Enrollment	700	Current Enrollment (as of 6/15/2022)	643
Chartered Grade Span	5-12	Current Grade Span	5-12
Students on Waitlist (as of 6/15/2022)	193	Current Age of School	24
Number of Instructional Days per School Year (as stated in the Charter)	180	School Hours	7:45 am - 3:00 pm
<p>Mission Statement: <i>“To become intimate with your home region, to know the territory as well as you can, to understand your life as woven into the local life does not prevent you from recognizing and honoring the diversity of other places, cultures and ways. On the contrary, how can you value other places if you do not have your own? If you are not placed, then you wander the world like a sightseer, a collector of sensations, with no gauge for measuring what you see. Local knowledge is the grounding for global knowledge.” (Scott Russell Sanders)</i></p> <p>The Rising Tide Charter Public School will provide a strong academic program rooted in the history of Plymouth, Massachusetts. Our students will harvest opportunity from the practice of language, the reasoning of mathematics, the analysis of science and the reflection of history. We want children to hone skills through rigorous studies, but skills alone do not make a whole education. The Rising Tide Charter Public School will also cultivate within its students a sense of belonging to our community, a tie with those who have come before them and a seed of continuity between the Plymouth of today and the Plymouth of tomorrow. The Rising Tide Charter Public School will graduate capable and prepared young adults who have already sown within themselves a sense of place and belonging that will be the bounty of the future, whether they remain among us or venture from our harbor.</p>			

July 31, 2022

Dear Members of the Massachusetts Department of Elementary and Secondary Education:

Compared with the preceding two years, the recently completed school year seemed in many ways much more like a traditional school year; yet the impact of the pandemic still reverberated in many ways. From dealing with continued staffing disruptions caused by COVID-related absences, to addressing the educational and social-emotional challenges brought on by reduced in-person learning over the past few years, the accumulated stress of the pandemic experience continues to be felt by our staff, students, and families.

Throughout these changes, we have never wavered in our commitment to provide a rich, supportive, and rigorous educational environment for all. Although the coming years are certain to bring additional challenges, our focus will remain as always on providing a rigorous academic program based on skill development, maintaining a strong sense of community, and graduating capable, prepared young adults.

Respectfully submitted,

Christopher Schelleng
Chairperson, Rising Tide Charter Public School Board of Trustees

School Performance and Program Implementation

Faithfulness to the Charter

Mission and Key Design Elements

Through the process of developing a Charter School Accountability Plan for the 2018-2023 charter term, the Board of Trustees and the Rising Tide staff members, along with support from the Director of the Office of Charter Schools and Redesign, identified three key design elements drawn from the school's mission statement, the school's original charter, and past accountability reports:

1. *A Strong Academic Program with Skill Development*
2. *Connection to the Plymouth Region*
3. *Strong School Community*

During the 2021-2022 school year, the ongoing COVID health crisis continued to create great challenges for students, families, teachers, and school leaders. Through these challenges, Rising Tide's mission and key design elements were at the center of the goals, the planning, and the implementation of the program.

A Strong Academic Program with Skill Development

Rising Tide's inquiry and skills-based approach fosters personal and academic growth in students; the approach encourages students to reflect, take responsibility, ask questions, and think critically. During the 2021-2022 school year, Rising Tide continued to foster the development of skills, the exploration of content knowledge, and the deepening of understanding with each student.

In addition to aligning the 5-12 curriculum with the MA Curriculum Frameworks, the faculty at Rising Tide design courses and units that work to develop Schoolwide Objectives and Benchmark Skills. The school sets high and universal expectations of all students, and all students are expected to become excellent Communicators (Receptive Skills and Expressive Skills), Investigators (Inquiry Skills and Innovation Skills), Self-Directed Learners (Self-Awareness Skills and Skills in Taking Responsibility), and Community Stewards (Skills in Awareness of Others and Collaboration Skills). At Rising Tide, academic growth and development is integrated with social and emotional growth and development. Annually, teachers are guided to keep the end goals of each course in mind, to emphasize the development of skills, and to assess the students' progress towards the goals of each course.

At Rising Tide, students have access to a curriculum that includes broad and challenging coursework. In the 2021 School Report Card (<https://reportcards.doe.mass.edu/2021/04830305>), the most recent, publicly available report for Rising Tide, 100% of Rising Tide high school graduates completed the MassCore Program of Studies, compared to 83.2% of all high school graduates in Massachusetts. Rising Tide values the arts as an integral part of a high-quality school program, with 95.5% of all students participating in at least one arts course, compared to 77.5% of students across Massachusetts. With data from 2020, Rising Tide students have a 95.7% graduation rate, compared to a four-year graduation rate of 89% across Massachusetts.

Connection to the Plymouth Region

Despite the ongoing obstacles presented by the COVID-19 pandemic, Rising Tide teachers continued to innovate and integrate direct connections to the Plymouth region in core courses. During the 2021-2022 school year, teachers utilized the Local Performance Task Rubric, developed collaboratively by the Curriculum Coordinators team in the 2020-2021 school year, to measure each

student's proficiency on the Local Performance Task. Please see Attachment C on page 40 for an example of a Local Performance Task.

During the 2021-2022 school year, many of the Middle School Discover and Exposition courses, such as Local Architecture, Early American Cooking, Local Wildlife, and Local Landscapes, have been additional opportunities for students to make connections with the region. Upper School Elective courses connected to the region during the 2021-2022 school year included Marine Biology and Ornithology.

As in previous years, nearly half of the seniors chose to participate in the Senior Internship Course, a community-based internship program that takes place during the elective block for one semester. Students gain career experience in a non-paid internship of their choice and meet regularly with a faculty member to practice professional job skills.

In July 2022, a group of 10 middle and high school students participated in the second Jill S. Crafts Summer Scholars Program: Energy Solutions for Climate Change. The students spent two weeks on the Rising Tide campus engaging with scientists and professions on topics concerning climate change, clean/alternative energy sources, and responsible ways to demonstrate environmental stewardship. The Jill S. Crafts Summer Scholars Program, offered free of charge, was designed and led by Leane McCullough, Rising Tide's Science Curriculum Coordinator and Eighth Grade Science Teacher, along with Carol Artacho-Guerra, Upper School Science Teacher.

Students at Rising Tide also participate in community service projects through courses, advisory programming, or clubs such as the Community Action Club, the Junior Classical League, or the National Honor Society. Community partners during the 2021-2022 school year included the American Red Cross, Wildlands Trust, the South Shore Resource and Advocacy Center, and the Plymouth Coalition for the Homeless.

Strong School Community

The Advisory program at Rising Tide remains at the center of a structure of supportive relationships. With their Advisory groups, Advisors create a smaller community within the school, serve as the primary support and advocate for the student within the school, and serve as the primary contact between home and school. Grade level Advisory Teams work collaboratively to develop Advisory curriculum within the following three strands: Community Building, Future Planning, and Wellness. On the spring 2022 student and spring parent/guardian surveys, Advisory was the highest rated program element at Rising Tide for contributing to a sense of belonging.

Other structures of support for students include the Wellness Team, composed of counselors and nurses, and the Middle School and Upper School Student Support Team, which include Principals, Assistant Principals, Counselors, Nurses, Special Education Leaders, and the College and Future Planning Counselor. Also central to a strong school community at Rising Tide are the four core principles that guide Rising Tide's culture and philosophy. These core principles are those of *Honesty*, *Respect* for one another, *Trust*, and taking increasing *Responsibility* for oneself. These principles grew out of the school's mission statement and offer important guidelines for decision-making and student behavior and standards in all aspects of school life. Teachers cite these core principles in situations involving academic rigor and standards as well as in behavioral situations.

Morning Meetings for the Middle School and the Upper School bring together the students and teachers together on each side of the building twice a week. These community meetings may include announcements about school events, presentations from students and/or teachers, poetry readings,

and sports announcements. In addition, teachers, school leaders, or students may share ideas and thoughts with the wider school community.

The Rising Tide Parent Group began meeting again during the 2021-2022 school year, and brought new energy to some events, including distribution of snacks to students during MCAS testing days, organizing special recognition for teachers in the spring, collaborating on Muffins in the Morning family visiting day to the Middle School in May, and welcoming new families to the orientation days in June.

Amendments to the Charter

Rising Tide did not apply for any amendments to its Charter during the 2021-2022 school year.

Access and Equity: Discipline Data

The most recent, publicly available student discipline data for Rising Tide, from 2020-2021, may be found on the school’s Department of Elementary and Secondary Education profile page and viewed through the following link:

<https://profiles.doe.mass.edu/ssdr/default.aspx?orgcode=04830000&orgtypecode=5&=04830000&>

2020-21 Student Discipline					
https://profiles.doe.mass.edu/ssdr/default.aspx?orgcode=04830000&orgtypecode=5&=04830000&					
Student Group	Total Number of Students	Students Disciplined	Percent In-School Suspension	Percent Out-of-School Suspension	Percent Emergency Removal
All Students	687	8	0.6	0.6	0
English Learner	8	1	0	0	0
Economically Disadvantaged	128	5	0	0	0
Students with Disabilities	153	6	1.3	2.6	0
High Needs	244	7	1.2	1.6	0
Female	338	2	0	0	0
Male	346	6	0.6	1.2	0
American Indian or Alaska Native	7	0	0	0	0
Asian	9	0	0	0	0
African American/Black	6	0	0	0	0
Hispanic/Latino	27	0	0	0	0
Multi-race, Non-Hispanic/Latino	47	1	0	0	0
Native Hawaiian or Pacific Islander	0	0	0	0	0
White	591	7	0.7	0.5	0

During the 2020-2021 school year, Rising Tide staff members worked collaboratively to reduce the use of in-school and out-of-school suspensions for all students. Rising Tide enrolled 687 students during the 2020-201 school year; 0.6% were suspended in-school and 0.6% were suspended out-of-school. During that same period, Rising Tide had no expulsions, no students sent to alternate placement, and no emergency removals. The chart above reflects 2020-2021 subgroups of students and the number of students suspended, either in-school or out-of-school.

In-school suspension and out-of-school suspension rates decreased for all students and also for students with disabilities and students with high needs subgroup populations during the 2020-2021 school year. The decrease in suspension rates can likely be partially attributed to the hybrid learning model that was implemented for the majority of the school year, with roughly 45% of the students in the building together on a daily basis. During the 2021-2022 school year, when Rising Tide returned to a full in-person model, challenging student behaviors increased, and the number of Community Standards Meetings and Principals Hearings increased as well.

During the 2020-2021 school year, the faculty Diversity, Belonging, Equity, and Inclusion (DBIE) workgroup explored the ways that race impact each of our lives and the lives of others in the school community and worked to determine practical action steps for increasing DBIE in the school community. The group reviewed the school's discipline data and also discussed anecdotal information from students and teachers related to equity in the approach to the management of student behaviors and discipline. During the 2021-2022 school year, the faculty DBIE workgroup focused on ways to support and empower teachers to immediately address any incidents of hate or bias.

The addition of two new roles for the 2021-2022 school year, a Middle School Dean of Community and an Upper School Dean of Community, were critical to supporting students and managing behaviors during the school year. On a weekly basis, our Middle School Student Support Team and our Upper School Student Support Team continue to monitor the progress of individual students who made mistakes and demonstrated the need for more support and developed and implemented action steps to support the individual students. The Student Support Teams will continue to monitor trends in attendance and discipline for all students and the subgroups of students in the school, including students with disabilities, students who are economically disadvantaged, and students of color.

Dissemination Efforts

Best Practice Shared	Vehicle for Dissemination (describe the method, format, or venue used to share best practices)	Who at the school was involved with the dissemination efforts? (Title)	With whom did the school disseminate its best practices? (Partners and Locations)	Result of dissemination (List any resulting artifacts, materials, agendas, or results from partners. Also indicate if the school received grant funding to disseminate and if a grant report was written.)
Using Rising Tide’s Schoolwide Objectives and Benchmark Skills to Integrate Social-Emotional Learning and Civic Engagement Across the Curriculum	Educator page on the school website (Passive Dissemination): https://risingtide.org/educators/	School Leaders, Faculty Leaders	Any visitor to the website	Website visitors are able to explore Rising Tide’s Schoolwide Objectives and Benchmark Skills, the work to integrate SEL competencies with curriculum planning, implementation, and assessment, and unit plans that demonstrate unit design that integrates these skills.
Integrating Rising Tide’s Schoolwide Objectives and Benchmark Skills with Literacy Skills to Accelerate Learning	LearnLaunch K-12 Innovation Summit June 24, 2022	Maureen Chapman, Curriculum Director Theresa Szczepanski, Math & Computer Science Coordinator	Summit Participants	Summit Participants were able to learn about Rising Tide’s year-long initiative to integrate the Benchmark Skills with literacy skills

Academic Program Success

Student Performance

The health crisis from March 2020 through June 2022 had a tremendous impact on the ability to consistently gather evidence about Rising Tide's progress in student academic achievement, and an impact on the student performance as measured through MCAS. MCAS Testing was canceled in Spring 2020, and was delayed several times in Spring 2021 before being administered in May 2021. MCAS was administered in a more standard format in Spring 2022, but the results are currently embargoed.

A. The most recent publicly available student performance data from Spring 2021, is available on the Rising Tide school profile on the Department of Elementary and Secondary Education website and viewed through the following link:

[Rising Tide Charter Public School Spring 2021 Assessment Data](#)

Although students at Rising Tide met or exceeded expectations on the MCAS tests at a higher rate than the state average in all but one grade level subject area, the impact of the pandemic is evident in the drop in scaled scores for students at Rising Tide in the Spring 2021 results as compared to Spring 2019 results in nearly every tested area.

B. The Massachusetts Department of Elementary and Secondary Education, for the second year in a row due to the COVID-19 pandemic, did not issue school, district, or state accountability determinations for the 2021-2022 school year. The accountability information below and through the link represents results from 2019. In 2019, Rising Tide performed better than 83% of middle/high or K-12 schools statewide. Rising Tide was meeting 58% of the improvement targets set by the state, showing improvement across most accountability measures.

[2019 Accountability Report for Rising Tide Charter Public School](#)

C. In each year of the charter term, students at Rising Tide demonstrated growth in skills as measured through the student report card data. Annually, teacher assessment of student progress on Benchmark Skills has provided evidence of progress of each student in each Benchmark Skill assessed. The Benchmark Skills rubric includes eight areas of assessment within the four Schoolwide Objectives: Communicator (Receptive, Expressive), Investigator (Inquiry, Innovation), Self-Directed Learner (Self-Awareness, Taking Responsibility), and Community Steward (Awareness of Others, Collaboration). Students earn a score of 1-4 on the Benchmark Skills rubric on the second and fourth term report card. Aggregate data for each student will be collected after the second and fourth terms and measured for growth annually by the Student Data Specialist. As shown in the 2018-2023 Accountability Plan, students at Rising Tide have consistently demonstrated growth in their Benchmark Skills. Below is a graphic of the Google Data Studio used by our team to review student progress with the Benchmark Skills:

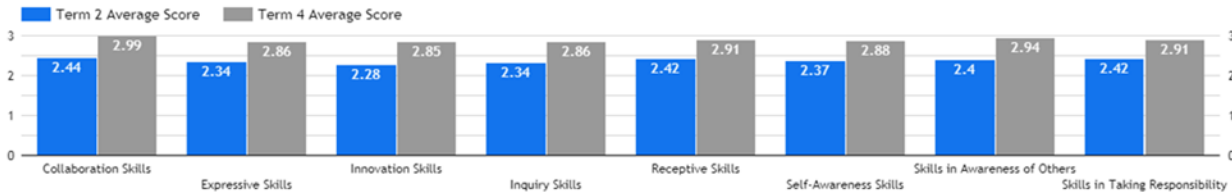


Benchmark Skills 2021-2022

School - Course - Section - Teacher - Grade - Student -

Averages by Skill and Term

Total # of Students Assessed 643	Term 2 Average Skill 2.37	Term 4 Average Skill 2.90	Average Increase 0.53	Average % Increase 22.17
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Averages by Skill & Term

Benchmark Skill	Term 2	Term 4	Diff
Collaboration Skills	2.44	2.99	0.56
Expressive Skills	2.34	2.86	0.51
Innovation Skills	2.28	2.85	0.57
Inquiry Skills	2.34	2.86	0.52
Receptive Skills	2.42	2.91	0.50
Self-Awareness Skills	2.37	2.88	0.51
Skills in Awareness of Others	2.40	2.94	0.55
Skills in Taking Responsibility	2.42	2.91	0.49

Averages by Department and Term

Department	Term 2	Term 4	Diff
English	2.45	3.21	0.76
Mathematics & Computer Science	2.27	2.77	0.51
Science	2.35	2.89	0.54
Social Studies	2.41	2.73	0.33
Support	2.13	2.54	0.41
World Languages	2.44	2.93	0.48

Academic Program

During the 2021-2022 school year, the faculty and staff at Rising Tide worked collaboratively to provide a high-quality academic program that met the needs of all students during the continuation of the COVID-19 health crisis that presented many obstacles to students, families, teachers, and schools. Rising Tide was able to implement a fully in-person learning model during the 2021-2022 school year, with the state-mandated indoor mask requirements for individuals in schools from August 25, 2021 through February 28, 2022.

During the 2021-2022 school year, the schedule times for the Middle School and the Upper School experienced shifts to accommodate lunch and mask breaks to meet the health and safety protocols for the year. The number of student absences increased during the 2021-2022 school year, related to the health and safety protocols for staying home when sick or when identified as a close contact; these students were able to make academic progress on return from their absences. As in previous school years, each teacher provided formative assessments and culminating assessments for each student in each course, utilizing Rising Tide's standard grading scale. Rising Tide provided a school-issued Chromebook to every student in the 2021-2022 school year. Educational technology tools such as Formative, Parlay Ideas, FlipGrid, EdPuzzle Pro, Kami, PearDeck Premium, and Screencastify Unlimited built upon the schoolwide use of Google Meet, Google Classroom, and G-Suite for Education.

Curriculum

As in previous years, the curriculum at Rising Tide is aligned with the Massachusetts Curriculum Frameworks and guided by our Mission and Goals and by the four Schoolwide Objectives. By the time each student graduates from Rising Tide, the student should feel confident in the ability to be an effective Communicator, Investigator, Self-Directed Learner, and Community Steward. Teachers use

these Schoolwide Objectives to set expectations, design teaching and learning activities, and assess student progress in all school-related activities. The Schoolwide Objectives and Benchmark Skills remain the same across grades levels; however, as students move into higher grade levels, they are expected to complete tasks with greater complexity, independence, and awareness. Additionally, each grade level has a guiding question, which the faculty uses to design teaching and learning opportunities and connect the work of school with the daily lives of students. Each academic discipline has developed a Guiding Statement and a set of Essential Questions from which to design units of study. Each unit is designed to help students build skills, gain content knowledge, and develop understandings. This process of curriculum development has been strongly influenced by design frameworks such as those found in *Understanding by Design* (McTighe and Wiggins) and *The Teaching for Understanding Guide* (Blythe, et al.).

Teachers collaborate to design the curriculum and ensure that the courses are aligned with each of the Frameworks: Arts, Comprehensive Health, Digital Literacy and Computer Science, English Language Arts and Literacy, Foreign Languages, History and Social Science, Mathematics, Science and Technology/Engineering, and Vocational Technical Education. The faculty also reviews the national frameworks for various academic disciplines when designing units. Using Rising Tide's inquiry and skills-based approach, teachers have the flexibility and autonomy to teach the students in front of them, differentiating instruction to ensure that all students have opportunities for success. Rising Tide provides a rigorous program in which all students are held to high academic standards. Courses at Rising Tide are not leveled, and the school does not weight grade point averages or rank students. Teachers at Rising Tide foster the development of skills, the exploration of content, and the deepening of understanding. The faculty and staff at Rising Tide are committed to preparing all students for college and beyond.

Rising Tide teachers are required to review and document updated course plans, updated unit plans, and any other supporting resources and documents annually; this documentation is stored in the Team Drive Curriculum folder. Annually, Curriculum Coordinators and School Leaders review these unit plans to monitor vertical and horizontal alignment as well as the representation of a variety of cultures and perspectives. Other Teachers also have access to these shared documents. During the 2021-2022 school year, the faculty DBIE workgroup and the Curriculum Coordinators team worked to update a curriculum anti-bias review tool for implementation in the 2022-2023 school year.

Instruction

At Rising Tide an approach to high-quality instruction with teaching and learning is central to the identity of our school program. At Rising Tide, we use an inquiry and skills-based approach, for both personal and academic growth.

The inquiry and skills-based approach is used to support personal growth by encouraging students to reflect, take ownership for their actions, and build skills to resolve conflicts. Questioning is at the heart of the inquiry and skills-based approach. When a challenging social or disciplinary issue arises with a student, the adult takes time to listen to and question the student about the situation. In this way, the student is given an opportunity to reflect upon the situation and is supported in the process of understanding and resolving the issue. Student mistakes are treated as teachable moments from which students may learn and grow. In a social or disciplinary setting, this approach encourages students to take responsibility, advocate for themselves, and develop an awareness of themselves and others. The inquiry and skills-based approach is used to support academic growth by encouraging students to think critically and ask questions. Teaching and learning at Rising Tide is approached as a process of exploration rather than a reporting of information and memorization of facts. In an inquiry and skills-based classroom, teachers and students engage in meaningful questions and discussions, collect and analyze information, draw conclusions, and communicate an understanding of the material.

The inquiry and skills-based approach is not limited to project-based learning; the approach may be used in posing challenges where direct skill instruction is taking place, such as working with a piece of literature, a mathematical pattern, or a scientific problem. In this academic environment, a teacher acts as a facilitator for student learning, encouraging and leading the questioning, listening and directing student discovery, and constructively critiquing for better understanding or development of skills. At Rising Tide, each student is acknowledged as a critical thinker who brings valuable prior knowledge and experiences to the classroom. Students are expected to be active learners, and teachers are expected to help students build skills as well as navigate and make sense of the world. This approach embraces trust in each student as a learner, and reflects cultural proficiency in honoring and providing space for the different experiences and perspectives of the students in the room.

Assessment

During the 2021-2022 school year, instructional leaders and teachers used available disaggregated quantitative and qualitative data to modify instruction and improve outcomes for all students and for subgroups of students.

Instructional Leaders, Student Support Teams, Curriculum Teams, and Advisory Teams reviewed, analyzed, and considered data including MCAS testing results, CCRA+ results, data from the Early Warning Indicator System (EWIS), student attendance data, student discipline data, report card grade distribution data, and reports from teachers and teaching teams. Individuals and teams consider this quantitative and qualitative data to review, evaluate, and adjust curriculum and instruction at Rising Tide.

Accelerated Learning

In August 2021, Rising Tide offered two Acceleration Academies, supported by a grant from the Department of Elementary and Secondary Education, to support a select group of rising grade 8 students and a select group of rising grade 10 students prior to the start of the school year.

In the 2021-2022 school year, in an effort to accelerate learning in regards to the growth in literacy skills, the teachers engaged in three cycles of diagnostic assessments that integrated several of the benchmark skills with literacy skills towards improving instruction of literacy skills across the curriculum. Through the diagnostic cycles, teachers integrated a MA Literacy Framework Anchor Standard with Rising Tide Benchmark Skills:

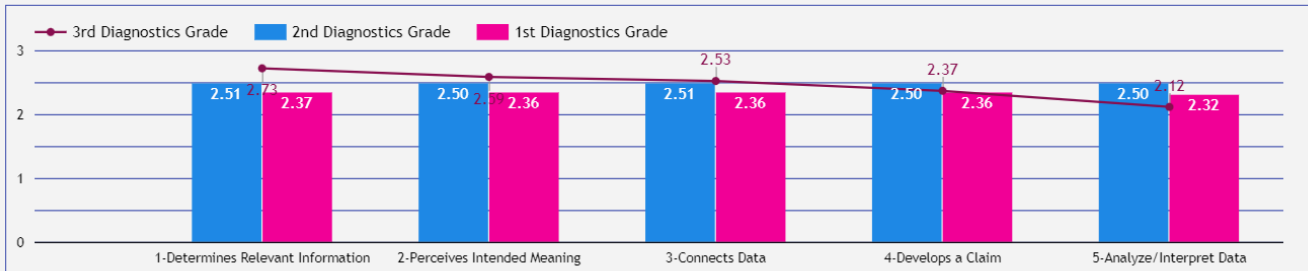
- *MA Literacy Anchor Standard: Read closely to determine what a text states explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from a text.*
- *Rising Tide Benchmark Skills: Determines relevant information; Perceives the intended meaning of the expression of others; Connects data; Develops a claim*

Teachers analyzed the data from these diagnostics assessments to inform their instructional practices and develop action plans. Student scores on the diagnostic assessments, on a scale of 1-4, increased from an average score of 2.36 for the first assessment in September 2021 to 2.54 for the third assessment in March 2022.

Average Diagnostic Scores 1st, 2nd, & 3rd Assessment

First Diagnostic Average 2.36	Second Diagnostics Average 2.50	Third Diagnostic Average 2.54
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Avg. Diff Between 1st & 2rd 0.14
Avg. Diff Between 2st & 3rd 0.03



Diagnostic	1st Average	2nd Average	3rd Average	Avg. Diff between 2nd & 3rd
1-Determines Relevant Information	2.37	2.51	2.73	0.22
2-Perceives Intended Meaning	2.36	2.50	2.59	0.09
3-Connects Data	2.36	2.51	2.53	0.02
4-Develops a Claim	2.36	2.50	2.37	-0.13
5-Analyze/Interpret Data	2.32	2.50	2.12	-0.37
Grand total	2.36	2.50	2.54	0.03

Supports for All Learners

Rising Tide is committed to effectively identify and address all students' strengths and needs for academic, behavioral, and social-emotional development. The Student Support Director works collaboratively with the Principals, Assistant Principals, Academic Director, and Wellness Director to support each learner with academic, social/emotional, and behavioral development.

The Middle School Student Support Team, which meets weekly, is led by the Middle School Principal and Assistant Principal. The Upper School Student Support Team, which meets weekly, is led by the Upper School Principal and Assistant Principal. The Nurses and Adjustment Counselors are additional members of these teams. These teams review student data for attendance, discipline, academic progress, and standardized testing, and regularly monitor data produced by the Student Data Coordinator as well as data available through EWIS. Additionally, the Student Support Team members attend weekly grade level Advisory Team meetings to discuss any students in need of additional support. The Student Support Teams determine necessary supports and interventions for individual students and recommend action steps which may include targeted academic support, NHS mentor pairings, or referrals for special education testing.

The following supports are provided to all students at Rising Tide:

Academic

- Student reflection and goal-setting in Future Planning strand of Advisory programming
- Academic Support time, scheduled at least twice a week for all students, is an opportunity for students to get additional support beyond class time from each of their teachers
- Library Skills workshops for middle school student
- Inquiry and Skills-based approach to teaching and learning in all classrooms
- Student/Advisor/Parent Conferences twice a year

Behavioral

- Community Building experiences through Advisory programming

- Community Standards Meetings available to all students
- Wellness curriculum participation through Advisory programming

Social Emotional

- Regular Advisory group meetings to create small communities within the community
- Access to Adjustment Counselor
- National Honor Society Mentor Program for Middle School students

The following assessments are used to identify students' strengths and needs for academic, behavioral, and social emotional development:

Academic

- Teacher-designed formative and summative assessments for each course, administered frequently, utilizing the Schoolwide Objectives and Benchmark Skills.
- Massachusetts Comprehensive Assessment System (MCAS), administered annually to students in grade 5-10.
- College Work and Readiness Assessment (CWRA+), administered annually in grades 7, 9, 11.
- ACTFL Assessment of Performance toward Proficiency in Languages (AAPPL), administered annually for high school Spanish Scholars.
- National Latin Exam (NLE), administered annually for Latin Scholars in grades 8-12

Behavioral

- We do not currently administer behavioral assessments for all learners.

Social Emotional

- Social and Emotional learning is assessed through teacher-designed formative and summative assessments for each course, administered frequently, utilizing the Schoolwide Objectives and Benchmark Skills.

The following interventions are provided to identified students:

Academic

- Progress Reports for improvement in academic progress
- Targeted support workshops during enrichment and elective periods in the schedule
- Benchmark Skills Workshops for high school students

Behavioral

- Community Standards Meetings for students who demonstrate a need for more support in making better behavior choices

Social Emotional

- Social Skills groups
- Individual support from Adjustment Counselor

The following resources are used support all learners:

Staff

- Advisors/General Education Teachers, Academic Director, Principals and Assistant Principals, Wellness Director, College & Future Planning Counselor, Nurses & Adjustment Counselors, Research and Teaching & Learning Librarian, Information Technology Director and Assistant Directormative, Parlay Ideas, FlipGrid, EdPuzzle Pro, Kami, PearDeck Premium, Screencastify

Curricula

- Schoolwide Objectives and Benchmark Skills
- Course Plans, aligned with MA Curriculum Frameworks
- Inquiry and Skills-Based Approach to Teaching and Learning

Technology

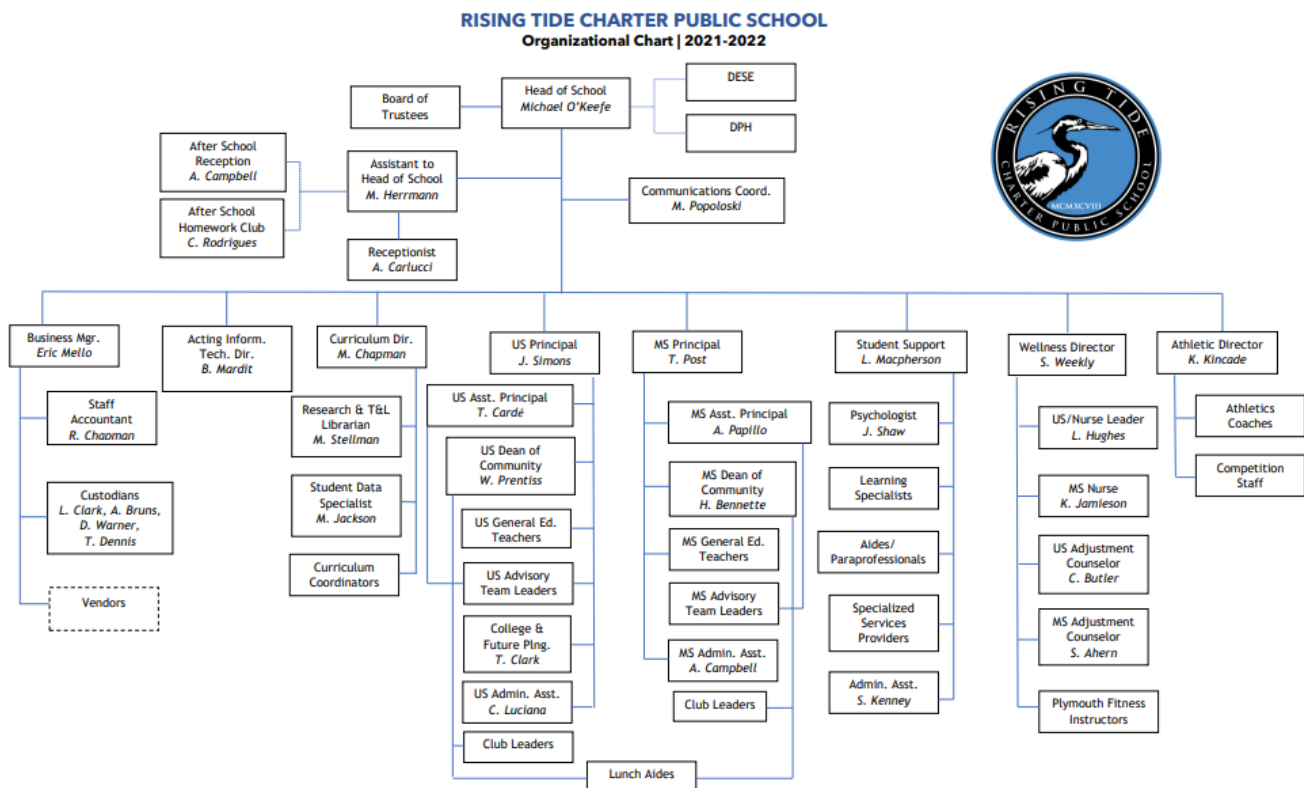
- Chromebooks, G-Suite for Education, For Unlimited

Organizational Viability

Organizational Structure of the School

There were a few changes to the organizational structure during the 2021-2022 school year. Two educational leaders, the Middle School Dean of Community and the Upper School Dean of Community, were added; each reported to their respective Principal. The addition of these two leaders was part of a plan to both support students with building community and provide each Principal with a greater opportunity to directly support teachers with teaching and learning. In the 2021-2022 school year, the Academic Director shifted roles slightly to become the Curriculum Director, with responsibility for professional development, curriculum development, and oversight of the teaching mentoring program. Rising Tide added an Assistant to the Head of School to support the leadership of the operations and program of the school. In 2021-2022, the school also added a full-time ESL teacher to support the small, but growing population of English learners. In the 2021-2022 school year, the College and Future Planning Counselor report to the Upper School Principal. Finally, eight lunch/recess aides were hired to support students and teachers with the programming in the middle of the school day; these aides worked closely with each Dean of Community and the Wellness Director.

The Board of Trustees continued to provide oversight of the academic program, the faithfulness to the charter, and the organizational viability as well as the Head of School. The Head of School supervised eight school leaders: the Business Manager, the Information Technology Director, the Curriculum Director, the Middle School Principal, the Upper School Principal, the Student Support Director, the Wellness Director, the Athletic Director. The Communications Coordinator and the Assistant to the Head of School also reported directly to the Head of School. The eight leaders directly supervised the remaining staff members in the areas of business operations, information technology, academic leadership and support services, instructional leadership, student support, wellness, and athletics. The Organizational Chart for the 2021-2022 school year appears below:



Budget and Finance

A. Unaudited FY 22 Statement of Revenues, Expenses and Changes in Net Assets

	July 1, 2021 - June 30, 2022
Operating Revenues:	
State Grants	\$ 10,909,845
Federal Grants	\$ 604,585
Other Revenue	\$ 214,657
Food Service revenue	\$ 231,243
On - Behalf Payments	\$ 1,258,000
In-Kind Revenue	\$ 395,000
Total operating revenue	<u>\$ 13,613,330</u>
Operating Expenses	
Administration	\$ 854,681
Instructional Services	\$ 6,255,233
Pupil Services	\$ 1,298,930
Operation & Maintenance of Site	\$ 696,322
Fixed Charges	\$ 1,595,763
Non-Operating / Cap Facilities	\$ 1,170,823
On - Behalf Payments	\$ 1,258,000
In- Kind Revenue	\$ 395,000
Total Operating Expenses	<u>\$ 13,524,752</u>
Operating income (loss)	<u>\$ 88,577</u>
Non-operating revenues and (expenses)	
Change in Net Position	\$ 88,577
Net Position, beginning of the year	<u>\$ 4,505,938</u>
Net Position, end of the year	<u>\$ 4,594,515</u>

* Operating Income surplus will be used to fund new facilities and other capital purchases

B. Statement of Net Assets for FY22 (Balance Sheet)

Current Assets

Cash	\$	2,420,286
Cash Construction Escrow	\$	23,045
Class & Student Funds Held	\$	18,604
Grants and Accounts Receivable	\$	19,908
Prepaid Expenses	\$	<u>249,257</u>
Total Current Assets	\$	2,731,100

Non Current Assets

Due from Related Party	\$	50,638
Capital Assets, Net	\$	<u>17,405,329</u>
Total noncurrent Assets	\$	17,455,967
Total Assets	\$	20,187,067

Current Liabilities

Accounts Payable	\$	158,650
Accrued Expenses	\$	460,438
Deferred Revenue	\$	7,800
Class and Student Funds held	\$	<u>11,743</u>
Total Current Liabilities	\$	638,631

Noncurrent Liabilities:

Note Payable	\$	14,953,921
Total noncurrent Liabilities	\$	14,953,921
Total Liabilities	\$	15,592,551

Net Position:

Net investment in capital assets	\$	2,185,968
Unrestricted	\$	2,319,970
Net Income	\$	<u>88,577</u>
Total net position	\$	4,594,515
Total liabilities and net position	\$	20,187,066

C. Approved School Budget for FY 23
(Approved by Board of Trustees on May 16, 2022)

Income

State Tuition and Transportation Reimb.	\$ 11,886,474
State and Federal Grants	\$ 439,647
Supplemental Fee Revenue	\$ 110,000
Funds Income	\$ 3,000
Other revenue	\$ 164,556
Interest Income	<u>\$ 850</u>
Total Income	\$ 12,604,527

Expenses

Administration	\$ 982,919
Instructional Services	\$ 6,858,838
Pupil Services	\$ 1,292,335
Operations and Maintenance	\$ 785,735
Fixed Charges	\$ 1,668,348
Non- Operating/Capital Facility	<u>\$ 1,153,451</u>
Total Expense	\$ 12,741,628

Net Ordinary Income \$ (137,101)

FY23 Enrollment Table	Enter Number Below
Number of students pre-enrolled via March 15, 2022 submission	700
Number of students upon which FY23 budget tuition line is based	663
Number of expected students for FY23 first day of school	670
<i>Since March 2022, some students have informed us they will not return or will not join the school after registering for the upcoming year. Rising Tide continues to budget conservatively.</i>	

Capital Plan for FY23

	FYE 2023	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028	FYE 2029	FYE 2030	FYE 2031	FYE 2032	Total
Capital Projects:											
1 Computer & Copier Fleet	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000	120,000	1,200,000
2 Classroom Technology Upgrades	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	150,000
3 Furniture Replacements	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	100,000
4 Infrastructure & Capital Reserves	200,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	1,100,000
Total Capital Projects	345,000	245,000	245,000	245,000	245,000	245,000	245,000	245,000	245,000	245,000	2,550,000

10 Year Capital Plan FY 2023 - FY 2032

The school has received approval from the DOE to expand to a high school with a total of 700 students.

The following capital projects expected to occur over the next ten years:

1) Computer Fleet:

In accordance with the school's technology plan, the computer fleet maintenance cost reflects the annual investment required to upgrade and replace computers and related equipment in our media labs and classrooms every three years. This annual cost is paid from operating cash flows each year and therefore has no requirement for a capital reserve.

2) Classroom Technology Upgrades:

These costs are related to replacement of technology and continued expansion of new technology into the classrooms and will be paid from operating cash flows each year and therefore have no requirement for a capital reserve.

3) Furniture Replacements:

Periodically classroom and administration furniture is replaced. This cost reflects the annual cost to replace existing furniture throughout the school including classroom desks, storage lockers, art room tables, lunch tables, filing cabinets and various other items. This annual cost is paid from operating cash flows each year and therefore has no requirement for a capital reserve.

4) Building Infrastructure & Capital Reserves:

During FY 2023 we plan to complete some minor carpeting, plumbing and HVAC construction work. We plan to have ongoing capital improvements from FY 24 - 32. This annual cost is paid from operating cash flows each year and therefore has no requirement for a capital reserve.

Appendix A: Accountability Plan performance for 2021-2022

2018-2023 Charter School Accountability Plan

Faithfulness to Charter: Objectives and Measures Related to Mission & Key Design Elements

	2021-2022 Performance (Met/Not Met)	Evidence (include detailed evidence with supporting data or examples)
Objective: <i>Rising Tide will provide for students a strong academic program that will foster the development of skills</i>		
Measure: <i>Annually, 80% of all students will have aggregate benchmark skills scores that are greater in the 4th term than in the 2nd term.</i>	Met	<p><i>Student report card data, generated by teacher assessment of student progress, will provide, on an annual basis, evidence of successful growth of each student in each Benchmark Skill assessed. The Benchmark Skills rubric includes eight areas of assessment within the four Schoolwide Objectives: Communicator (Receptive, Expressive), Investigator (Inquiry, Innovation), Self-Directed Learner (Self-Awareness, Taking Responsibility), and Community Steward (Awareness of Others, Collaboration). Students earn a score of 1-4 on the Benchmark Skills rubric on the second and fourth term report card. Aggregate data for each student will be collected after the second and fourth terms and measured for growth annually by the Student Data Specialist.</i></p> <p><i>In the 2021-2022 school year, 94.5% of all students had aggregate benchmark skill scores greater in the 4th term than the 2nd term. 643 students were assessed in the eight Benchmark Skill areas in the 2nd and 4th terms, and 607 students increased their skills scores. The average increase from the 2nd term to the 4th term was 0.53 on the 1-4 Benchmark skills rubric, an increase of 22.17%.</i></p>
Measure: <i>Annually, beginning in 2020, 80% of grade 11 students will achieve a mastery level of Proficient or higher on the College Work and Readiness Assessment (CWRA+).</i>	Not Met	<p><i>Starting in 2020, students in grades 7, 9, and 11 will participate in the CWRA+, a performance-based critical-thinking assessment of students. The assessment results include subscores in six areas: Analysis and Problem Solving, Writing Effectiveness, Writing Mechanics, Scientific & Quantitative Reasoning, Critical Reading & Evaluation, and Critique an Argument. There are five mastery levels: Below Basic, Basic, Proficient, Accomplished, and Advanced. Student results are shared with Rising Tide after the administration of the CWRA+ test and stored with the Student Data Specialist.</i></p> <p><i>In fall 2015, 50% of grade 9 students achieved a mastery level of Proficient or higher. In fall 2016, 69% of grade 9 students achieved a mastery level of Proficient or higher. In fall 2017, 65% of grade 9 students achieved a mastery level of Proficient or higher. In fall 2018, 55% of grade 9 students achieved a mastery level of Proficient or higher.</i></p> <p><i>During the pandemic, the College Work and Readiness Assessment (CWRA+) changed its name to College and Career Readiness Assessment (CCRA+). In the spring of 2022, students in grades 11 and 12 participated in the CCRA+. In spring 2022, 50% of students in grade 11 achieved a mastery level of Proficient or higher. 40.5% of students in grade 12 achieved a mastery level of Proficient or Higher.</i></p>
Objective: <i>Rising Tide will provide opportunities for students to connect to the Plymouth Region</i>		

	2021-2022 Performance (Met/Not Met)	Evidence (include detailed evidence with supporting data or examples)
<p>Measure: Annually, as demonstrated by the annual spring student survey, 90% of all students will report feeling a Partial Connection or above to the Plymouth region through their participation in the Rising Tide program. 80% of students will complete the survey each year.</p>	<p>Not Met</p>	<p><i>In the annual spring student survey, students will be asked to report on their feeling of connection to the Plymouth region through their school participation. Students will have the option to choose from the following responses: Strong Connection, Connection, Partial Connection, No Connection. The annual student surveys will be administered during a scheduled time to ensure high levels of participation. The survey will be designed on a web-based survey platform that produces data reports. The data will be collected and stored by the Student Data Specialist.</i></p> <p><i>In the annual spring student survey, 84.2% of student respondents reported feeling a Partial Connection or greater to the Plymouth region through their participation in the Rising Tide program.</i></p> <p><i>444, or 69%, of the students completed this question on the survey. 52 students who partially completed the spring survey skipped this question.</i></p>
<p>Measure: Annually, beginning in 2021, 95% of all students will successfully complete, by earning a score of proficient or above on the school's rubric, three performance tasks connected to the Plymouth region in their core courses.</p>	<p>Met</p>	<p><i>During the 2021-2022 school year, students participated in a local performance task in several of their courses. 95.5% of students, or 614 students, earned a score of proficient or above on at least three local performance tasks in their core courses that were connected to the Plymouth region.</i></p>
<p>Objective: Rising Tide will provide students with a strong school community</p>		
<p>Measure: Annually, Rising Tide will have an attendance rate of 95.5% or higher.</p>	<p>Not Met</p>	<p><i>Attendance data is collected daily at the school and reported to the DESE. Annual attendance rates are available to the public on the DESE school profile.</i></p> <p><i>In 2016-2017 and 2017-2018, the two completed years since Rising Tide has had approximately 300 students in grades 9-12, the attendance Rate was 95.9%. In 2016-2017 and 2017-2018, the state average attendance rate was 94.6%</i></p> <p><i>In the 2021-2022 school year, the overall attendance rate was 92.7%, or 108,403 students present out of 116,878 member days. The protocols related to COVID safety greatly impacted the attendance of students.</i></p>
<p>Measure: Annually, as demonstrated by the annual spring student survey, 90% of all students will report feeling a Sense of Belonging or greater to the Rising Tide school community. 80% of students will complete the survey each year.</p>	<p>Not Met</p>	<p><i>In the annual spring student survey, students will be asked to report on their feeling a Sense of Belonging to the Rising Tide school community. Students will have the option to choose from the following responses: Strong Sense of Belonging, Sense of Belonging, Partial Sense of Belonging, No Sense of Belonging. The annual student surveys will be administered during a scheduled time to ensure high levels of participation. The survey will be designed on a web-based survey platform that produces data reports. The data will be collected and stored by the Student Data Specialist.</i></p>

	2021-2022 Performance (Met/Not Met)	Evidence (include detailed evidence with supporting data or examples)
		<p><i>In the annual spring student survey, 68.9% of student respondents reported feeling a Sense of Belonging or greater. While it did not meet the measure, 92% of student respondents reported feeling a Partial Sense of Belonging or greater to the Rising Tide Community.</i></p> <p><i>424, or 66% of the students completed this question on the survey. 20 students who partially completed the spring survey skipped this question.</i></p>

Dissemination: Objectives and Measures Related to Dissemination

	2021-2022 Performance (Met/Not Met)	Evidence (include detailed evidence with supporting data or examples)
Objective: <i>Over the course of the charter term, Rising Tide will share with other educators the school's best practices in the integration of the Schoolwide Objectives and Benchmark Skills</i>		
<p>Measure: <i>Through 2019 Rising Tide will continue the working partnership it has established with the Plymouth Public Schools to share best practices to support social and emotional learning through the use of the Schoolwide Objectives and Benchmark Skills.</i></p>	Met	<p>Workgroup meetings including, at various times during the 2018-2019 school year, four Rising Tide administrators and 10 Plymouth Public School administrators were held at Rising Tide Charter Public School, Plymouth Public Schools District Office, Plymouth South Middle School, and Plymouth Community Intermediate School</p> <p>Workshops were held at Rising Tide Charter Public School at 59 Armstrong Road in Plymouth during the 2018-2019 school year and included 18 Teachers and 2 Counselors from Rising Tide, and 23 Middle School Teachers and 5 Counselors from Plymouth Middle Schools.</p> <p>The Grant Project Director submitted an interim report in April 2019 for the period through February 2019. The report is included in the following <i>Appendix A: Exhibit 1, DESE Grant 537 Interim Report</i></p> <p>Each teacher involved in the grant project produced a unit plan, two lesson plans, a rubric, peer observation reports, and project-end reflection.</p>
<p>Measure: <i>By 2023, Rising Tide staff will present best practices in the integration of its Schoolwide Objectives and Benchmark Skills at a minimum of three educator conferences.</i></p>	Not Met	<p>The school expects to meet this measure by 2023</p> <p>In November 2019, the Head of School and Academic Director presented at the <i>Sharing for Success 2019 Dissemination Fair</i></p>

	2021-2022 Performance (Met/Not Met)	Evidence (include detailed evidence with supporting data or examples)
		In June 2022, the Curriculum Director and Math & Computer Science Coordinator presented at the <i>LearnLaunch K12 Innovation Summit</i>.
Measure: <i>By 2023, Rising Tide will offer educator workshops open to all public educators in the region, sharing the best practices in the integration of Schoolwide Objectives and Benchmark Skills, a minimum of three times.</i>	Not Met	The school expects to meet this measure by 2023 Directly and indirectly, the COVID-19 health crisis hindered the plans to offer educator workshops.
Measure: <i>On an annual basis over the course of the charter term, Rising Tide share best practices, through the school website, of teacher curriculum plans and rubrics that demonstrate the integration of Schoolwide Objectives and Benchmark Skills</i>	Met	The school's website, which includes a clear and accessible section for educators to share best practices through videos and unit plans.

RECRUITMENT PLAN 2022-23

2021-2022 Implementation Summary:

1. Rising Tide was successful in implementing the school's recruitment strategies from the 2021-2022 Recruitment plan. In the 2021-2022 school year, the total number of applications increased 7% over the prior year. Grade 9 applications increased by 37%, which is also the largest number of grade 9 applications in the last 5 years. Grade 5 applications increased by 12%.

Rising Tide was also successful in enrolling students from subgroup populations. In the 2021-2022 school year, the percentage of students with disabilities increased to 21.8% from 19.8%, a percentage above both the comparison index (CI) and the gap narrowing target (GNT). In the 2021-2022 school year, the percentage of English learners increased to 1.4% from 0.5%, a percentage above both the CI and the GNT. In the 2021-2022 school year, the percentage of low income students increased to 23.7% from 16.4%, a percentage above the GNT and below the CI.

2. In the 2021-2022 school year, 10% of the total number of applicants for the 2022-2023 school year were siblings of current students. For grade 5, the primary entry point for Rising Tide, 34 applicants were siblings, representing approximately 37% of the incoming grade 5 cohort, which has potential to impact the rate of increase for certain subgroup populations.

Some of the percentage increase of the low income population is due to the Department of Elementary and Secondary Education redefining a student's low income status under the Student Opportunity Act, up to 185% of the Federal Poverty Level. Rising Tide experienced a 44.5% increase from the prior year in students identified as low income, compared to a statewide increase of 19.6% from the prior year of students identified as low income.

3. Rising Tide expects the incoming class of students, as captured in the October 1, 2022, SIMS report will meet the comparison index for students with disabilities and English learner populations, and will meet the school's gap narrowing target for low income students.

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

General Recruitment Activities for 2022-2023:

1. Mailings through a third-party mailing house, to every eligible student in the region of twenty-one school districts, as well as to students in the region who will be eligible for Rising Tide enrollment in future years.
2. Fliers about upcoming Open Houses placed in a variety of locations in regional towns.
3. Posting on school website and social media about upcoming Open Houses and events.
4. Information Open Houses in the evenings and on Saturdays in order to accommodate busy family schedules. Adding hybrid events, to allow families to learn more about the

school through asynchronous presentations and also be able to come to tour the school and speak with students, teachers, and school leaders.

5. Shadow visits offered to prospective students so they can visit the school with a student host and attend classes.

6. E-mails regarding open houses and lottery information sent to Rising Tide’s contact list of approximately 5,000, including current, former, and prospective families. Rising Tide asks current families to spread the word about Rising Tide and its events to other families.

7. Share press releases and social media posts, highlighting Rising Tide’s program with high expectations for all students.

8. Continue paid advertising in local print and digital media in the region.

9. Send weekly newsletters and periodic press releases to Rising Tide’s contact list

10. Through Rising Tide’s community partners and with current Rising Tide families, host events promoting Rising Tide outside of the school building.

Recruitment Plan – 2022-2023 Strategies

List strategies for recruitment activities for each demographic group.

Special education students/students with disabilities

(a) CHART data

School percentage:
21.8.0%

GNT percentage: 0%
CI percentage: 15.2%

The school is above GNT percentages and above CI percentages

(b) Continued 2021-2022 Strategies

Met GNT/CI: no enhanced/additional strategies needed

- At Information Open Houses and in recruitment mailings, make clear to families that charter schools are for all students and that special education services are available for students.

- Continue to have a member of Rising Tide’s Special Education team attend all Information Open Houses in order to meet separately with parents of applicants with special education needs. The meetings include information about Rising Tide’s program and provide an opportunity for prospective parents to ask individual questions about the school program.

- Continue to work with districts in school’s designated region to send accurate addresses of all students to third party mail house.

- Rising Tide’s Student Support Director and parents involved with the school’s SEPAC reach out to SEPAC parents at other schools.

- In brochures and marketing materials, include language that clearly states that students with special education needs are welcome at Rising Tide.

- Parents of Rising Tide’s special education students will be invited to attend the December and January Information Sessions so that they can meet with prospective students and their families.

Limited English-proficient students/English learners

(a) CHART data

School percentage:
1.4%

GNT percentage: 1.0%
CI percentage: 1.1%

The school is above GNT percentages and above CI percentages

(b) Continued 2021-2022 Strategies

Met GNT/CI: no enhanced/additional strategies needed

- Continue to work with districts in school’s designated region to send accurate addresses of all students to third party mail house.

- School staff will continue to conduct demographic studies of the region in order to identify target areas in the region for non-English speaking populations.

- Place fliers/posters with information about open houses in targeted neighborhoods.

Recruitment Plan – 2022-2023 Strategies
List strategies for recruitment activities for each demographic group.

	<ul style="list-style-type: none"> ● Make information about Rising Tide available in Spanish and Portuguese to families. ● Provide translation services on Rising Tide’s website so that all information about the school can be viewed in other languages. ● Provide Portuguese and Spanish translated fliers in appropriate areas, once a year. ● Reach out to specific community centers in the region where Brazilian and Spanish speaking families congregate, such as special markets, St. Mary’s Church, Plymouth Brazilian Jiu Jitsu Academy, and the Harbor Community Health Center ● Rising Tide will provide translation services in Portuguese and Spanish Open House events to support Portuguese- and Spanish-speaking prospective families. The school has allotted two years for this specific strategy to impact an increase in the EL population. ● Rising Tide will include the school’s full-time ESL teacher in presentations to families at Open House and other promotional events. The school has allotted two years for this specific strategy to impact an increase in the EL population. ● Rising Tide will enlist current families to co-host community events to promote the school. The school has allotted two years for this specific strategy to impact an increase in the EL population.
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Students eligible for free or reduced lunch (Low Income/Economically Disadvantaged)

<p>(a) CHART data</p> <p>School percentage: 23.7%</p> <p>GNT percentage: 19.5%</p> <p>CI percentage: 27.4%</p> <p>The school is <u>above</u> GNT percentages and <u>below</u> CI percentages</p>	<p align="center">(b) Continued 2020-2021 Strategies</p> <p><input checked="" type="checkbox"/> Met GNT/CI: no enhanced/additional strategies needed</p> <ul style="list-style-type: none"> ● Mail school information to all regional families using mailing lists provided by regional school districts. ● Post fliers about upcoming Information Open Houses at the Plymouth Boys’ and Girls’ Club and other clubs in the Rising Tide region that tend to service economically disadvantaged families and their children. ● Continue to make the application for free/reduced lunch easily accessible to all Rising Tide families by having it available on the school’s website, mailed along with the summer mailing, and reminding families, through the weekly school newsletter, that the application is available. Rising Tide also encourages families to apply for free/reduced lunches if their family income is reduced at any time by \$500 or more. ● Make contact with community resources used by low-income families, including food stamp programs, food pantries, and social service agencies. Provide contact people with flyers and information regarding enrollment and information open houses. ● Provide application materials and information packets to organizations and clubs that service economically disadvantaged children and their families. ● Partner with representatives at the Plymouth Coalition for the Homeless, and the Plymouth Housing Authority to distribute recruitment materials to area families.
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Recruitment Plan – 2022-2023 Strategies	
List strategies for recruitment activities for <u>each</u> demographic group.	
	<ul style="list-style-type: none"> ● Provide regional transportation, free of charge, to residents of districts in the school’s designated region. The school has allotted two years for this specific strategy to impact an increase in the Economically Disadvantaged population. ● Provide prospective students with flexible shadow visits, either half-day or full-day, and providing a free school lunch on the day of the shadow visit. The school has allotted two years for this specific strategy to impact an increase in the Economically Disadvantaged population. ● Promote shoulder programming, including Early Program, After-School Homework Program, designed to support family schedules and transportation challenges, to prospective families. The school has allotted two years for this specific strategy to impact an increase in the Economically Disadvantaged population. ● Partner with additional affordable housing networks and housing developments to share promotional materials about the school. The school has allotted two years for this specific strategy to impact an increase in the Economically Disadvantaged population. ● When at promotional events in the community, bring school laptops to enable families to apply online easily in the same setting. The school has allotted two years for this specific strategy to impact an increase in the Economically Disadvantaged population.
<u>Students who are sub-proficient</u>	<p style="text-align: center;">(d) Continued 2021-2022 Strategies</p> <ul style="list-style-type: none"> ● Rising Tide explicitly states on the mailings and social media posts advertising the school that Rising Tide is open to all students regardless of prior academic achievement. ● Discuss with prospective families all the different ways that Rising Tide helps all families to achieve success in a public school setting, such as specialized math and literacy classes, extended school day, and one on one support. ● At informational Open Houses, Rising Tide will continue to discuss all the different options available for families whose child may be sub-proficient by informing participants of the special support classes for students who may be struggling. ● In written materials, website content, and informational Open Houses, promote the intentional balance of the Rising Tide core program, which gives equal significance and schedule priority to the arts and world languages, and has many high-interest elective courses from which students can choose at every grade level. ● Share written and video testimonials from students and parents/guardians about the ways that Rising Tide can be the right fit for students with different interests.

Recruitment Plan – 2022-2023 Strategies List strategies for recruitment activities for <u>each</u> demographic group.	
<u>Students at risk of dropping out of school</u>	<p style="text-align: center;">(e) Continued 2021-2022 Strategies</p> <ul style="list-style-type: none"> At Open Houses, include in the presentation some of the strategies Rising Tide has utilized to prevent students from dropping out of school, including the Advisor program, counseling services, and flexibility in program to provide more time at school for homework and assistance. Meet with prospective students and families whose child may be at risk at dropping out to go over strategies to being successful and how Rising Tide may be able to help.
<u>Students who have dropped out of school</u>	<p style="text-align: center;">(f) Continued 2021-2022 Strategies</p> <ul style="list-style-type: none"> Rising Tide will continue to offer academic counseling for students who have dropped out of school by holding meetings with the students and families to discuss options, or if necessary, alternate school programs.
OPTIONAL <u>Other subgroups of students who should be targeted to eliminate the achievement gap</u>	<p style="text-align: center;">(g) Continued 2021-2022 Strategies</p> <ul style="list-style-type: none"> Distribute information and applications to homeless shelters/group homes in the area to ensure that families understand the supports that Rising Tide provides to students under McKinney-Vento. Continue to build relationships with community centers to ensure that families are aware of Rising Tide and what the school has to offer all students. Rising Tide leaders will work with the Rising Tide Parent group to make connections with regional organizations supporting Latinx and African American families to encourage more Latinx and African American students to apply to Rising Tide. Rising Tide leaders will develop a Diversity, Belonging, Equity, and Inclusion workgroup comprised of parents/guardians, students, teachers, and school leaders to collectively work together to address race and inequity in the school community. Work with the Nominating and Governance Subcommittee of the Board of Trustees increase the diversity of the Board of Trustees members.

RETENTION PLAN 2022-23

Please provide a brief narrative report on the successes and challenges of implementing last year's retention strategies from the 2021-2022 Retention Plan.

2021-2022 Implementation Summary:

Rising Tide's overall attrition rate increased in the 2021-2022 school year, up to 15.8% from 13.2% in the previous year. The retention rate was 84.2% for the 2021-2022 school year, and Rising Tide did not meet its retention goal of 88 percent. The attrition rate for the 2021-2022 school year can be attributed primarily to students transitioning away from Rising Tide after the middle school experience. The combined attrition rate for grades 5,6,7,9,10, and 11 for the 2021-2022 school year was 10%. It is important for the school to continue to implement strategies to retain more students in their transition from grade 8 to grade 9.

In the 2021-2022 school year, the attrition rate for students with disabilities increased to 13.3% from the 13.0% the prior year, but below the attrition rate for all students at Rising Tide. In the 2021-2022 school year, the attrition rate for English learners remained at 0.0%, as the school retained all English learners. In the 2021-2022 school year, the attrition rate

for low income students increased to 12.0% from 8.8% in the prior year, but below the attrition rate for all students at Rising Tide.

For the third school year in a row, the COVID-19 health crisis tremendously impacted the operation of school. For the second time in the last three school years, students in grade 8 suffered the tragic death of a classmate. Rising Tide embraced many initiatives to support students and build community, for much of the school year plans for gathering, exploring, and celebrating need to be limited or adapted.

While it was a more challenging year for the retention rate for all students, the retention rate for subgroup populations was stronger than the rate for all students.

Overall Student Retention Goal	
Annual goal for student retention (percentage):	88%

Retention Plan – 2022-2023 Strategies	
List strategies for recruitment activities for <u>each</u> demographic group.	
Special education students/students with disabilities	
<p>(a) CHART data</p> <p>School percentage: 13.0%</p> <p>Third Quartile: 12.3%</p> <p>The school's attrition rate is <u>above</u> third quartile percentages.</p>	<p>(b) Continued 2021-2022 Strategies</p> <p><input type="checkbox"/> Below third quartile: no enhanced/additional strategies needed</p> <ul style="list-style-type: none"> ● Regular contact with families through Advisor and/or learning specialists ● Work consistently at school with learning specialist ● Academic Support time available to all students on a regular basis ● Families are invited to regular SEPAC meetings with learning specialists ● Learning specialist present at student/advisor/parent conferences twice a year ● Accessibility to student advisor, learning specialists, and special needs coordinator ● Implement weekly Student Support Team meetings for the Middle School program and the Upper School program for staff to discuss strategies and supports for individual students with disabilities. ● Provide families with avenues to provide feedback through the Special Education Parent Advisory Council and the Annual Parent Survey. ● For students who are struggling to achieve academic success, have the Advisory team, with support from the Student Support Team, developed strength-based strategic plans to help the student find small successes that build into greater successes. ● Add two full-time special education teachers and two paraprofessionals to increase the flexibility of special education support and improve the ratios of students with IEPs in inclusion classes and increase the hours for the school behavioral therapist consultant. The school has allotted 2 years for this staffing strategy to positively impact the attrition rate for students with disabilities.
<p>(c) 2022-2023 Additional Strategy(ies), if needed</p>	

Retention Plan – 2022-2023 Strategies	
List strategies for recruitment activities for <u>each</u> demographic group.	
	<input checked="" type="checkbox"/> Above third quartile: additional and/or enhanced strategies described below: Include the time allotted for each strategy for data change (i.e. 2-3 years, 1 year) and/or if the school collaborated with a local community organization on these strategies. <ul style="list-style-type: none"> • Ensure that special education teachers, general education teachers, and members of the Student Support Team collaborate with the use of data and instructional strategies to support students with disabilities in meeting or exceeding expectations for MCAS achievement. The school has allotted 2 years for this strategy to positively impact the attrition rate for students with disabilities.
Limited English-proficient students/English learners	
<p><u>(a) CHART data</u></p> <p>School percentage: 0.0% Third Quartile: 14.2%</p> <p>The school's attrition rate is <u>below</u> third quartile percentages.</p>	<p style="text-align: center;"><u>(b) Continued 2021-2022 Strategies</u></p> <input checked="" type="checkbox"/> Below third quartile: no enhanced/additional strategies needed Copy and paste strategies here from last year's approved Annual Report. <ul style="list-style-type: none"> • Provide SEI Training Courses at the School for Rising Tide Teachers • In addition to meeting ESL requirements, ensure English Language Learners are receiving academic support from general education teachers. • Provide translation services at parent conferences • Employ full-time ESL teacher to support the growing population of English learners.
Students eligible for free or reduced lunch (low income/economically disadvantaged)	
<p><u>(a) CHART data</u></p> <p>School percentage: 12.0% Third Quartile: 11.9%</p> <p>The school's attrition rate is <u>above</u> third quartile percentages.</p>	<p style="text-align: center;"><u>(b) Continued 2021-2022 Strategies</u></p> <input type="checkbox"/> Below median and third quartile: no enhanced/additional strategies needed <ul style="list-style-type: none"> • Reduction of student fees for low income students. These reductions include fees for books, field trips, sports, college entrance exams, and college applications • Include language in regular communication to families about the reduction in fees for low income students • Personal attention for all students through the Advisor Program • School Counselor available for consultation • Use of <i>Virtual Gateway</i> to help identify families who receive food stamps and qualify for Free and Reduced lunch • Title I Reading Specialist available to assist students with reading challenges • Math Skills Course and Literacy Course available for two terms in the middle school • Academic Support time for all students built into the academic day • Math Skills Course during elective block available for Upper School students who are struggling academically • Provide Early Program and After-School homework program, free of charge, to economically disadvantaged students. • Provide all weekly club opportunities free of charge for all students.

Retention Plan – 2022-2023 Strategies List strategies for recruitment activities for <u>each</u> demographic group.	
	<ul style="list-style-type: none"> ● Have an appointed staff member at Rising Tide work with outside agencies to develop support plans for economically disadvantaged students and their families. ● Provide regional bus transportation, free of charge, for all students. ● Provide school-issued Chromebooks, free of charge, to all students. <p style="text-align: center;">(c) 2022-2023 Additional Strategy(ies), if needed</p> <p><input checked="" type="checkbox"/> Above third quartile: additional and/or enhanced strategies described below. Include the time allotted for each strategy for data change (i.e. 2-3 years, 1 year) and/or if the school collaborated with a local community organization on these strategies.</p> <ul style="list-style-type: none"> ● Provide child care for families at school events. The school anticipates it may take up to two years to see the positive impact on attrition rates for low income students.
<u>Students who are sub-proficient</u>	<p style="text-align: center;">(d) Continued 2021-2022 Strategies</p> <ul style="list-style-type: none"> ● Personal attention for all students through the Advisor Program ● Title I Reading Specialist available to assist students with reading challenges ● Math Skills Course and Literacy Course available for two terms in the middle school ● Math Skills Course during elective block available for Upper School students who are struggling academically ● Extended Learning Time built into the academic day ● School Counselor available for consultation ● Work with teachers in Curriculum Teams to better identify areas for skill improvement through which teachers can support students through core course teaching and learning time.
<u>Students at risk of dropping out of school</u>	<p style="text-align: center;">(e) Continued 2021-2022 Strategies</p> <ul style="list-style-type: none"> ● Personal attention for all students through the Advisor Program ● Title I Reading Specialist available to assist students with reading challenges ● Math Skills Course and Literacy Course available for two terms in the middle school ● Skills Course during elective block available for Upper School students who are struggling academically ● Academic Support time for all students built into the academic day ● School Counselor available for consultation ● Regular meetings with families to discuss retention strategies ● Monitor Early Warning Indicator System (EWIS) as well as internal indicators of all students, including students in grades five and six, who may demonstrate signs of being at-risk for dropping out of school.
<u>Students who have dropped out of school</u>	<p style="text-align: center;">(f) Continued 2022-2022 Strategies</p> <ul style="list-style-type: none"> ● Follow up phone calls and letters to families and students asking them to meetings to discuss options that are available to them ● Offer of academic counseling for students who may be interested in returning
OPTIONAL	(g) Continued 2022-2023 Strategies

Retention Plan – 2022-2023 Strategies

List strategies for recruitment activities for each demographic group.

Other subgroups of students who should be targeted to eliminate the achievement gap

- Will monitor achievement and data of Latinx and African American students in relation to other demographic groups at the school to ensure the success rates are similar to other demographic groups at the school.

Appendix C: School and Student Data Tables

Rising Tide Charter Public School’s student demographic enrollment data on the Department of Elementary and Secondary Education website may be accessed through the following link:

<https://profiles.doe.mass.edu/profiles/student.aspx?orgcode=04830000&orgtypecode=5&>

STUDENT RACE AND ETHNICITY AND SELECTED POPULATIONS 2021-22 SCHOOL YEAR	
Race/Ethnicity	% of School
African American	1.1
Asian	1.7
Hispanic	4.3
Native American	1.1
White	85.0
Native Hawaiian, Pacific Islander	0.0
Multi-race, non-Hispanic	6.9
Selected Populations	% of School
First Language not English	2.7
English Learner	1.4
Low-income	23.7
Students With Disabilities	21.8
High Needs	39.5

ADMINISTRATIVE ROSTER FOR THE 2021-2022 SCHOOL YEAR			
Name/Title	Brief Job Description	Start Date	End Date (if no longer employed at the school)
Michael O’Keefe Head of School	Responsible for all aspects of academic and organizational oversight, and state and federal compliance	2018 in Current Role 2003 at School	
Tyler Post, Middle School Principal	Provides instructional leadership, and teacher and student accountability	2017 in Current Role 2009 at School	June 30, 2022
James Simons, Upper School Principal	Provides instructional leadership, and teacher and student accountability	2017 in Current Role 2011 at School	June 30, 2022
Maureen Chapman, Curriculum Director	Oversees academic program under the direction of the Head of School. Develops curriculum and instructional materials, and oversees staff professional development.	2017 in Current Role 2005 at School	June 30, 2022
Anthony Papillo Middle School Assistant Principal	Provides instructional leadership, and teacher and student accountability	2017 in Current Role 2005 at School	
Terri Cardé Upper School Assistant Principal	Provides instructional leadership, and teacher and student accountability	2021 in Current Role 2017 at School	

Lauren Macpherson Director of Student Support	Oversees student support services, including IEP's, 504, CAP Plans, Title I. Oversees personnel associated with student support and assessment.	2017 in Current Role 2006 at School	
Shawna Weekly Wellness Director	Oversees nursing and counseling services and school's Wellness curriculum.	2017 in Current Role 2014 at School	
Heather Bennette Middle School Dean of Community	Oversees student accountability and behavior intervention/redirection.	2021 in Current Role 2015 at School	June 30, 2022
Wendy Prentiss, Upper School Dean of Community	Oversees student accountability and behavior intervention/redirection.	2021 in Current Role 2019 at School	
Eric Mello Business Manager	Plans, organizes, and directs the school's financial management program, including accounting and revenue administration. Oversees and maintains physical plant.	2010	
Rebecca Chapman Staff Accountant	Processes payroll and accounts receivable and payable. Manages MTRS.	2020	
Maureen Herrmann Assistant to Head of School	Supports the Head of School's daily operation of the school, short- and long-term goals and institutional projects.	2021	
Ashley Carlucci Receptionist	Greets all visitors to school. Monitors security videos and manages attendance and dismissals. Accepts packages to school.	2021	
Chris Dematos Information Technology Director	Responsible for all information technology including network infrastructure, information systems, staff and student device management, software and hardware tools for staff and students.	2019	10/31/21
Bryan Mardit Information Technology Director	Responsible for all information technology including network infrastructure, information systems, staff and student device management, software and hardware tools for staff and students.	2022 in Current Role 2018 at School	
Jason Casimiro Assistant Director	Supports teachers and students with help desk services (.5 FTE)	2022	

of Information Technology	and serves as Digital Literacy teacher (.5 FTE).		
Melissa Jackson Student Data Specialist	Maintains, updates, and analyzes student and enrollment data	2014	
Andrea Campbell Middle School Administrative Assistant	Supports the Middle School Principal, Assistant Principal, and Dean of Community.	2017	
Christina Luciana Upper School Administrative Assistant	Supports the Upper School Principal, Assistant Principal, and Dean of Community	2018	
Susan Kenney Student Support Assistant	Provides administrative support to the Student Support Director coordinating meetings and tracking compliance.	2021 in Current Role 2017 at School	

TEACHERS AND STAFF ATTRITION FOR THE 2021-2022 SCHOOL YEAR				
	Number as of the last day of the 2020-2021 school year	Departures during the 2021-2022 school year	Departures at the end of the school year	Reason(s) for Departure
Teachers	63	3	10	13- employee chose to end employment 0 - termination or non-renewal of employment contract
Other Staff	34	3	4	6 - employee chose to end employment 1 - termination or non-renewal of employment contract

BOARD AND COMMITTEE INFORMATION	
Number of commissioner approved board members identified in the Board Member Management System as of August 1, 2022	6
Minimum number of board members in approved bylaws	5
Maximum number of board members in approved bylaws	9

BOARD MEMBERS FOR THE 2021-2022 SCHOOL YEAR				
Name	Position on the Board	Committee Affiliations	Number of terms served	Length of each term (start and end date)
Christopher Schelleng	Chairperson	Nominating and Governance; Strategic Planning	4	10/2012-10/2015; 10/2015-10/2018; 10/2018-10/2021; 10/2021-10/2024
Sandy Kozlowsky	Vice Chairperson	Communications and Advocacy; Strategic Planning	3	12/2015-12/2018; 12/2018-12/2021; 12/2021-12/2024

Sean Kelly	Treasurer	Nominating and Governance; Finance & Audit	2	3/2018-3/2021; 3/2021-3/2024
Amy Norris	Clerk	Communications and Advocacy; Strategic Planning	2	3/2018-3/2021; 3/2021-3/2024
Norman DeCoste	Trustee	Finance and Audit	2	3/2017-3/2020; 3/2020-3/2023
Mary Schiess	Trustee		1	5/2021-5/2024

BOARD OF TRUSTEES MEETING SCHEDULE FOR THE 2022-2023 YEAR	
Date/Time	Location
Wednesday, July 20, 2022 / 7:00 p.m.	59 Armstrong Road, Plymouth
Monday, August 15, 2022 / 7:00 p.m.	59 Armstrong Road, Plymouth
Monday, September 19, 2022 / 7:00 p.m.	59 Armstrong Road, Plymouth
Monday, October 17, 2022 / 7:00 p.m.	59 Armstrong Road, Plymouth
Monday, November 21, 2022 / 7:00 p.m.	59 Armstrong Road, Plymouth
Monday, December 19, 2022 / 7:00 p.m.	59 Armstrong Road, Plymouth
Monday, January 23, 2022 / 7:00 p.m.	59 Armstrong Road, Plymouth
Monday, February 27, 2022 / 7:00 p.m.	59 Armstrong Road, Plymouth
Monday, March 20, 2022 / 7:00 p.m.	59 Armstrong Road, Plymouth
Monday, April 24, 2022 / 7:00 p.m.	59 Armstrong Road, Plymouth
Monday, May 15, 2022 / 7:00 p.m.	59 Armstrong Road, Plymouth
Tuesday, June 20, 2022 / 7:00 p.m.	59 Armstrong Road, Plymouth

COMMITTEE MEETING SCHEDULES FOR THE 2022-2023 SCHOOL YEAR		
Name of Committee	Date/Time	Location
Communications & Advocacy	Second Wednesday of Month, 5 p.m.	59 Armstrong Road, Plymouth
Finance and Audit	Third Monday of Month, 6:30 p.m.	59 Armstrong Road, Plymouth
Nominating & Governance	First Friday of Month, 11 a.m.	59 Armstrong Road, Plymouth
Strategic Planning	Various per consultant schedule	59 Armstrong Road, Plymouth

Appendix D: Additional Required Information

Key Leadership Changes

Position	Name	Email Address	No Change/New/ Open Position
Board of Trustees Chairperson	Christopher Schelleng	cshelleng@risingtide.org	No Change
Charter School Leader	Michael O'Keefe	mokeefe@risingtide.org	No Change
Assistant Charter School Leader (Curriculum Director)	Karen Baynes	kbaynes@risingtide.org	New
Special Education Director (Student Support Director)	Lauren Macpherson	lmacpherson@risingtide.org	No Change
MCAS Test Coordinator (Data and Assessment Manager)	Melissa Jackston	mjackson@risingtide.org	New
SIMS Coordinator (Data and Assessment Manager)	Melissa Jackson	mjackson@risingtide.org	No Change
English Learner Program (Student Support Director)	Lauren Macpherson	lmacpherson@risingtide.org	No Change
School Business Official (Business Manager)	Eric Mello	eric.mello@risingtide.org	No Change
SIMS Contact	Melissa Jackson	mjackson@risingtide.org	No Change
Admissions and Enrollment Coordinator (Data and Assessment Manager)	Melissa Jackson	mjackson@risingtide.org	No Change
Middle School Principal	Mary Ellen Janeiro	mjaneiro@risingtide.org	New
Upper School Principal	Beth Choiniere	bchoiniere@risingtide.org	New
Director of Wellness, Safety, and Equity	Shawna Weekly	sweekly@risingtide.org	New Role

Facilities

Location	Dates of Occupancy
59 Armstrong Road, Plymouth, MA	October, 2017

Enrollment

Action	2022-2023 School Year Dates
Student Application Deadline	February 9, 2023
Lottery	February 15, 2023

Appendix E: Conditions, Complaints, and Attachments

A. Conditions

Rising Tide has not been placed under any conditions by the Commissioner or the Board of Elementary and Secondary Education.

B. Complaints

In December 2021, the Rising Tide Board of Trustees received two letters of complaint from two separate Rising Tide families, alleging bullying and racial discrimination. In February, 2022, the Rising Tide Board of Trustees received a letter of complaint from a third Rising Tide family alleging bullying and racial discrimination. In January, 2022, Rising Tide Charter Public School hired an attorney to conduct an independent investigation related to the allegations of racial discrimination. The independent investigation found no credible evidence that Rising Tide treated any of the three students differently, or discriminated against them, based upon their race.

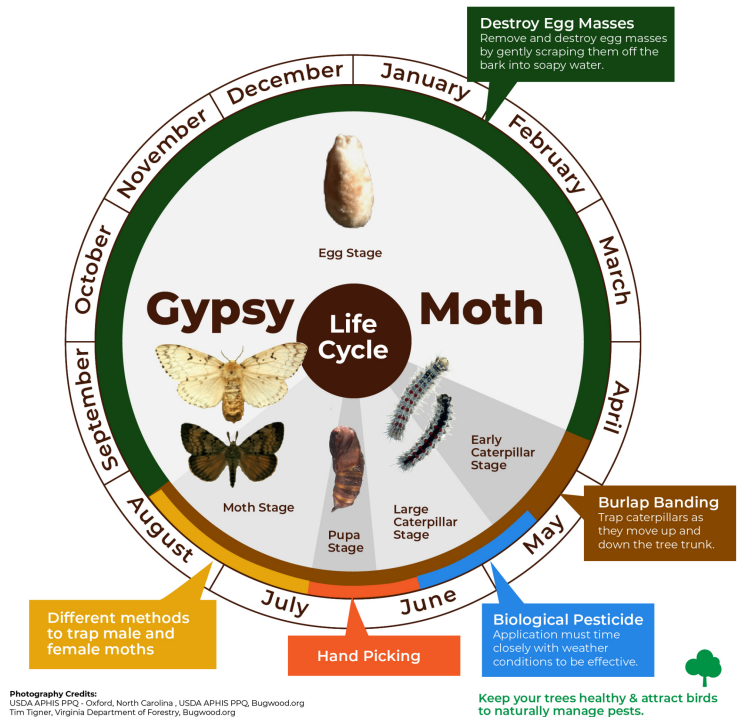
C. Attachment: Example of Local Performance Task

2406 - Advanced Biology Gypsy Moths as an Invasive Species to New England Local Performance Task

Background:

Gypsy Moths, formally known as *Lymantria dispar* are an invasive species to Massachusetts, New England, and all of the eastern seaboard of the United States. The moths were introduced by people who believed the caterpillar stage could be used to make silk. This was not a viable option but the caterpillars got loose and have become an invasive species. They do not have many natural predators here and thus the population has grown out of control since their introduction in the late 1800s. View their history and timeline here: [History of the Gypsy Moth in New England](#)

The lifecycle of the moths is interesting. The moths lay egg sacks in the early fall which over-winter and hatch in the spring. The newly-hatched caterpillars are extremely voracious eaters and can defoliate entire forests. The figure shows their life cycle and some ways that the moths can be eliminated and reduced.



Goal: In this task, you will act as a lab technician in an ecology lab. A field biologist has already collected egg mass samples and needs you to identify them molecularly as *L. dispar* or not. Each group will receive an egg mass sample that is linked to a geographic location in town (see attached map). In this task you will conduct a two-part experiment in which you will use PCR and electrophoresis to determine if egg-sack samples are those of an invasive gypsy moth or if they are a harmless local species that should be left alone. If it is a gypsy moth, you will provide guidance on how the town should proceed with mitigation or elimination strategies to combat the moth.

- **Groups are working together for the physical lab, but each student will write up their own lab notebook and town recommendation report.**

Day 1: PCR

Materials:

- Moth samples (unknown if gypsy moth or other moth)
- Positive control (definitely gypsy moth)
- Master Mix
- Primers (already diluted to 10pmol/uL)
- Nuclease-free water
- Micropipettes and tips

Protocol

1. On the thermocycler, locate the program called “Gypsy Moth” and set it to pre-warm.
 - a. Denature: 94C for 15 sec
 - b. Anneal: 50C for 15 sec
 - c. Elongate: 72C for 22 sec
 - d. Repeat for 35 cycles
 - e. Hold at 4C
2. Be careful and use aseptic technique and sterile pipet tips and microcentrifuge tubes for all steps.
3. Take 1 of the larger microcentrifuge tubes (1.5mL to 2mL) and combine:
 - a. 90 uL MasterMix (2x concentrate)
 - b. 10 uL Primer 1
 - c. 10 uL Primer 2
 - d. 40 uL Nuclease-free water
4. Set the larger tube aside and label three of the tiny PCR tubes with your initials and (+), (-), (test)
5. Now pipet 50 uL of the mixture in the bigger tube into 3 separate tubes.
6. IN THIS ORDER:
 - a. Add 10 uL of nuclease-free water to the (-) tube
 - b. Add 10 uL of the caterpillar sample to the (test) tube
 - c. Add 10 uL of the gypsy moth sample to the (+) tube
7. Mix all tubes thoroughly.
8. These three tubes should now have about 60uL in it each, which can be split into two 30uL duplicate samples each, for a total of 6 tubes per group.
9. Close all the tubes and place them into the thermocycler.
10. We will run the PCR when all the students have prepared their tubes (both blocks G and E)

Day 2: Electrophoresis

Materials:

- Gel (already set up for you)
- Electrophoresis buffer (already set up for you)
- BioRad Fast Blast DNA Stain
- Micropipettors and tips
- Loading Dye (5mL glycerol, Orange G until dark orange, up to 10mL water)

Protocol

1. Collect your PCR products from the freezer and thaw in your palm, if necessary.
2. Prepare 3 small tubes (+), (-), and (test) by adding 10uL of loading dye and 30uL of PCR product.
3. Work with the entire class to map out the gel and who will be loading what samples into which wells. Include that gel map with labels in your lab notebook.
4. Load 20uL of each of your 3 samples into the gel. The remaining samples in the tubes can be thrown away. Freeze any remaining PCR product that isn't mixed with loading dye. Be sure samples are labeled fully (date, sample, your initials).
5. Once the whole class has loaded the gel, cover the box and run the gel at 120v until the orange G is very close to the end of the gel.
 - a. Orange G runs about the same speed as 50-100bp DNA and your PCR product should be about 500 bp.
6. Stop the gel and unplug it completely before removing the lid.
7. Remove the lid and carefully remove the gel tray from the buffer.
8. Place the gel (without its tray) into a clean bucket containing 1x FastBlast DNA stain (diluted already for you to 1x). Stain overnight/2 days and view your results.

Analysis:

1. Look at your gel to determine if your egg mass was the gypsy moth or something else.
2. Confer with the other groups about their results. Which groups found the gypsy moth eggs and which groups did not? Use the map to see where in the town of Plymouth there is an infestation of this invasive species.

As a laboratory technician, you now have 2 tasks to complete in order to satisfy your job requirements and keep your boss happy.

Task 1. Write up your results and conclusion in your lab notebook. This should follow the standard lab notebook guidelines that you have been using in this course all year. The guidelines are taped into the front of your lab notebook if you need to refer to them again.

Task 2. Write up an informative report to your boss indicating if the sample in question is the invasive Gypsy moth. Your boss is a scientist but will be using your report to present to the local government, so it should be explained clearly for non-scientists as well.

Your report (3-5 pages) should include:

Background:

- What is the gypsy moth? Where did it originate and how did it get here in southeastern Massachusetts?
- What problems does the gypsy moth cause to our local ecosystem?
- What mitigation strategies are currently in place for gypsy moth population control?

Your experiment:

- What did you do in order to determine if the egg mass that the field biologist found is a gypsy moth or some other species?
- What controls did you have in place for your experiment?
- What results did you obtain and what do they mean in terms of identification of the egg mass?
- If your experiment was inconclusive, what do you think went wrong and how would you fix the experiment when you performed it a second time?

Your recommendation to the town:

- What should the town do? Some options (though you are not limited to these) include:
 - Nothing
 - Eliminate all egg masses that appear to be gypsy moths
 - How?
 - How will you know they are gypsy moths?
 - Eliminate the caterpillars of the moth once they hatch
 - How?
 - How will you know they are gypsy moths?
 - Something else
- Your recommendation should explain the problem and include why you think action is needed (or not needed), and what that action should be. Cite evidence and your data but be sure it is understandable to a non-scientist as well.

Map of Sample Locations

