



# *Needham School Committee*

*Broadmeadow Performance Center*

*February 1, 2022*

*Executive Session*

*5:30 p.m.*

<https://needham-k12-ma-us.zoom.us/j/85124849526?pwd=cDZKY3NWSFNcb2RBenpsZXlhNlNkZz09>

Meeting ID: 851 2484 9526 Passcode: 897229 One tap mobile+13017158592

*Open Session*

*6:30 p.m.*

Broadcast on the Needham Channel municipal and HD channels, live stream at:

<https://needhamchannel.org>

Please click the link below to access the meeting on Zoom:

<https://us02web.zoom.us/j/83134058845?pwd=S1YwYUdiakxYMWxla0Z1VmtGNEMxUT09>

Webinar ID: 831 3405 8845 Passcode: 984270 Or One tap mobile :US: +19292056099



---

**Needham School Committee**  
**February 1, 2022, 6:30 p.m.**  
**Broadmeadow School Performance Center**  
**Next School Committee Meeting: February 15, 2022**

School Committee meetings are broadcast on the Needham Channel municipal and HD channels, live stream at: <https://needhamchannel.org>

Please click the link below to access meeting

<https://needham-k12-ma-us.zoom.us/j/85124849526?pwd=cDZKY3NWSFNcb2RBenpsZXlhNlNkZz09>

Meeting ID: 851 2484 9526 Passcode: 897229 One tap mobile+13017158592

**5:30 p.m.      Executive Session** (Exception #3 to discuss collective bargaining per MGL C30A, s.21(A) #3 and to return to open session)

After Executive Session, the School Committee will reconvene at 6:30 p.m. in open session at this link:

<https://us02web.zoom.us/j/83134058845?pwd=S1YwYUdiakxYMWxla0ZlVmtGNEMxUT09>

Webinar ID: 831 3405 8845 Passcode: 984270 Or One tap mobile :US: +19292056099

**6:30 p.m.      Public Comments**

**6:40 p.m.      School Committee Chair and Subcommittee Updates**

**6:50 p.m.      Superintendent's Comments**

**6:55 p.m.      Consent Items**

1. Approve Minutes of the Meeting of December 7, 2022

**Discussion Items**

**7:00 p.m.      Pollard Middle School Improvement Plan**

**7:45 p.m.      Proposed 2022-2023 School Calendar**

**8:05 p.m.      Update on Health & Safety**

**8:25 p.m.      Action Items**

Approve 2022-2023 Middle School and High School Program of Studies  
Vote on 2022 Annual May Town Meeting Warrant Articles  
Approve FY23 Revolving Fees: Transportation, Athletics, Preschool and  
Community Education

**8:45 p.m.      School Committee Comments**

**Information Items**

FY23 Revolving Fund Budget Request: Transportation (Revised)  
Disposal of Surplus Items





## Needham School Committee

February 1, 2022

---

Agenda Item:     **Executive Session**

Background Information:

Chair Dr. Connie Barr will convene the meeting. On a roll call vote, the committee will vote to go into executive session to discuss collective bargaining per MGL C30A, s.21(A) #3 and to return to open session.





## Needham School Committee

February 1, 2022

---

Agenda Item:     **Public Comments**

Background Information:

- The School Committee Chair will offer the opportunity for the public to speak to the School Committee on issues not on the agenda.





## Needham School Committee

February 1, 2022

---

Agenda Item:     **School Committee Chair and Subcommittee Updates**

Background Information:

- The Chair and subcommittee members may offer brief updates on issues not on the agenda.

Members of the School Committee available for comment:

Dr. Connie Barr, Chair  
Mr. Matthew Spengler, Vice Chair  
Ms. Andrea Longo Carter  
Mr. Michael Greis  
Ms. Elizabeth Lee  
Mr. Michael O'Brien  
Mr. Aaron Pressman  
Dilin Meloni, Student Representative member of School Committee

---





## Needham School Committee

February 1, 2022

---

Agenda Item:     **Superintendent's Comments**

Background Information:

Superintendent Daniel E. Gutekanst will apprise the School Committee of events, information, and matters of interest not on the agenda.





## Needham School Committee

February 1, 2022

---

Agenda Item:     **Consent Agenda**

1. Approve Minutes of the Meeting of December 7, 2021

Chair: "Does anyone wish to remove any item from the consent agenda?"

If none removed:

"There being no objection, these items are adopted by unanimous consent."



Needham School Committee  
Minutes of the Meeting  
December 7, 2021

Connie Barr, Chairman of the Needham School Committee, called the meeting to order at 5:30 p.m. The meeting is streamed live at <https://needhamchannel.org> and accessible via Zoom for public comment.

Members of the School Committee present were:

Connie Barr, Chair	Andrea Longo Carter
Matthew Spengler, Vice-Chair	Michael O'Brien (remote)
Michael Greis	Aaron Pressman
Elizabeth Lee	

Members of the Central Administration present were:

Dan Gutekanst	Mary Lammi
Terry Duggan	Alexandra McNeil
Anne Gulati	

Also present were:

Jerome McKibben, McKibben Demographics (remote participation)  
Needham High School Principal Aaron Sicotte  
Needham High School Girls' Volleyball Team and Coaches  
Needham High School Student Advisory to the School Committee members

Public Comments

Public Comments

Chairman Barr offered the opportunity for members of the public to speak to the School Committee on issues not on the agenda, either in person or on the Zoom link. Chairman Barr noted that members of the community could also contact the School Committee via email at [schoolcommittee@needham.k12.ma.us](mailto:schoolcommittee@needham.k12.ma.us).

There were no public comments.

DISCUSSION

FY2023-37 Projected Enrollment Update

FY2023-37  
Projected  
Enrollment  
Update

Dr. Gutekanst introduced this item. He stated that Demographer Jerome McKibben has worked with the Needham Public Schools for many years. He stated that Dr. McKibben and Anne Gulati, Assistant Superintendent for Finance and Operations, would provide an update on enrollment projections for FY2023-2037.

Dr. McKibben began the presentation with summary findings. He stated that, like many school districts around the country, Needham experienced a significant reduction in the number of enrolled students during the 20/21 School Year due to COVID-19. Dr. McKibben projects that enrollment will return to pre-pandemic levels, although more gradually than previously anticipated. The updated forecast assumes that Needham will reach pre-pandemic enrollment levels of approximately 5,700 students, but not until the end of the fifteen-year forecast horizon. Dr. McKibben noted four factors for this change: 1) The impact of recent home sales activity on in-migration rates; 2) Fewer students have returned to school than previously anticipated; 3) Although Needham's population base has increased by more than 3,200 people (reflecting the updated 2020 census total of 32,091, compared to the 2010 census population of 28,886), Needham's under 5-year cohort appears to be @ 100 students lower than previously predicted. The smaller population of students under the age of five has reduced the number of elementary students projected in the next few years; and 4) The Kendrick and Modera apartment complexes have



not yielded as many children as initially projected, possibly due to the high cost of leasing at both locations.

Ms. Gulati noted that the updated forecast also represents a significant change from prior projections by level (elementary, middle, and high). Although the total enrollment projection for FY36 is similar at about 5,700 students, there are significant differences by level in both the short and long-terms. The current series reflects the cumulative impact of student demits and low return rate, which has reduced near-term projected enrollment at every level. The current series also anticipates more elementary students in the long-term than previous projections for declining elementary enrollment over time. The updated FY36 elementary enrollment (of 2,517 students) is 109 students higher than the previous forecast for 2,408 students. Dr. McKibben attributes this to an anticipated surge in the number of young families able to in-migrate after FY25, because many of the older homeowners that had previously postponed downsizing will reach their 80's and may be forced to involuntarily migrate because they can no longer live independently. Dr. McKibben estimates that between 125-200 additional homes will turn over each year between FY25-37 as a result. (This assumption is different from previous forecasts, which had assumed an even distribution of homes being downsized over the fifteen years.) Secondary enrollment, by contrast, is projected to be lower than previous estimates in the out years, reflecting the cumulative impact of the smaller COVID class sizes moving through the system. The entire report is available online in the School Committee Packet for this meeting at [www.needham.k12.ma.us](http://www.needham.k12.ma.us). Discussion followed.

#### School Committee Chair and Subcommittee Update

School Committee  
Chair and  
Subcommittee  
Updates

Chair Barr noted that today is National Pearl Harbor Remembrance Day. She took a moment to acknowledge survivors and veterans in service to our country.

Chair Barr stated that she visited the Ninth Grade Interdisciplinary Program last Friday as students were finishing one of their units. She stated that the program was interesting. She stated that she would ask David Bookston, Needham High School Math Teacher, to extend an invitation to School Committee members to participate at the end of an upcoming unit. Chair Barr stated that it was exciting to see the presentations and discussions.

#### Superintendent's Comments

Superintendent's  
Comments

Superintendent Gutekanst stated that he received comments about the tragedy in Michigan. He stated that he wants families to know that Needham Public Schools prioritize thoughtful planning in the schools about what to do if there is an active shooter. He stated that time is spent with staff on active shooter protocols, and work is done with all students, PreK-12, on what to do in developmentally appropriate ways. Superintendent Gutekanst stated that there is a reliance on the School Resource Officers, and Public Safety Officials, just as there is a reliance on the Fire Department for fire drills to think through lessons and provide information in a thoughtful, systematic way. Superintendent Gutekanst stated that there is information on the district website about protocols. He also stated that families could also contact their school principal to walk them through what Needham does to keep students safe.

Superintendent Gutekanst took a moment to congratulate Needham High School fall athletes. Superintendent Gutekanst congratulated the Dance Team that came in third in the state championships and the girls swim team that came in second in the state championships. Superintendent Gutekanst welcomed the Needham High School Girls' Volleyball Team and congratulated them for winning the Division I Girls' Volleyball Championship and the Massachusetts Interscholastic Athletic Association Sportsmanship Award. Superintendent Gutekanst congratulated the coaches on an extraordinary season.



Consent Items

## Consent Items

1. Approve Minutes of the Meetings of October 5, 2021, and October 19, 2021
2. Accept Donations

Chair Barr asked if members of the School Committee wanted to remove any items from the Consent Agenda. Chair Barr stated that because there are no objections, the items are adopted by unanimous consent.

## DISCUSSION ITEMS

Needham High School Student Advisory to the School Committee ReportNeedham High  
School  
SASC Report

Dr. Gutekanst introduced this item. He stated that this is the second of several reports the Student Advisory to the School Committee (SASC) will provide the School Committee this year. He also stated that SASC meets regularly with the principal to discuss school issues, concerns, and ideas with the high school administration. He added that the students are excited and prepared to discuss these issues with the School Committee and welcome questions and comments.

Students expressed their appreciation to the School Committee for the opportunity to present the current events of Needham High School.

Students presented class updates and shared their plans for fundraising ideas and activities. The freshmen class is expanding its student council meetings and is working with members to create a class motto. The sophomore class shared their plans for a Winter Event and a Touch-a-Truck Event and spoke about working with Cradles to Crayons. The junior class is currently developing plans for the spring and preparing for the Junior Harbor Cruise and Field Day. Juniors are preparing to take the SAT and ACT exams and are excited that the year has finally gotten into its groove. The senior class members of the Student Council have split into three committees to plan spring events: the rescheduled Harbor Cruise, a class barbeque (in part funded by the PTC) and preparing for the Prom.

Students presented an update on the At-large activity. Students reported that Homecoming was held on October 22, with five hundred students participating. Students reported that they hope to build on that overall success for next year's Homecoming. Students were happy to report that on November 23, they held their first Bonfire event in two years. Because students could not have a regular pep rally, the captains of fall sports teams were invited to have their incredible season honored. Students recognized the girls' volleyball team for both winning the State Championship and the State Sportsmanship Award. In addition to recognizing fall sports, performances from the jazz ensemble, Varsity cheer, JV and Varsity dance, and Bomb Squad took place. Students expressed their appreciation for the incredible turn-out from the community, especially from classmates coming to support their teammates. Students expressed their gratitude to town departments, especially Police and Fire, for making the event possible and for their continued support of the Student Council year after year.

Students shared an update on outreach and reported that student groups representing different experiences and values at the high school have been participating in the Quote Project. Each group was given an opportunity to select a quote that spoke to their experiences at Needham High School and the values of the community. Student Council members selected some of the submitted quotes and created artwork to bring them to life.

Students shared their opinions on masks, noting a consensus to make face coverings optional. Students pointed out that the practice of masks breaks during long-block classes continues, and instead of class activities taking place during the breaks, mask breaks have become true breaks. Students continue to follow state and town guidelines but would



love to have the opportunity to choose to wear the covering or not. A change in the future would be appreciated.

Students and members of the School Committee engaged in comments and discussion period.

#### Superintendent's FY23 School Operating Budget Request

#### Superintendent's FY23 School Operating Budget Request

Dr. Gutekanst led the discussion on this item. He took a moment to express his appreciation to the Principals, Directors, and Central Office. Dr. Gutekanst expressed appreciation to Anne Gulati, Assistant Superintendent for Finance and Operations, and her team who have spent many hours reviewing requests.

Dr. Gutekanst stated that this is a challenging year to develop a budget. He stated that COVID-19 continues to be a major concern. Health and safety needs continue to dominate planning. The increased needs of students, especially the most vulnerable, will remain long after the pandemic has ended. School enrollment is down by about 180 students, and student needs have been exacerbated by the pandemic. School building renovation, construction, and maintenance needs require significant and ongoing attention, funding, and management. Maintaining the Portrait of a Needham Graduate strategic priorities while emphasizing equity, inclusion, and anti-racist efforts are essential to students' futures.

Dr. Gutekanst stated that the proposed FY23 budget will benefit students at a high level and support efforts to address persistent learning gaps for students. The proposed FY23 budget ensures students are learning in classrooms with talented and increasingly diverse faculty and staff, and it maintains a student-to-teacher ratio in Grades K-12 of about 1 to 18-20 students. The proposed FY23 budget provides targeted support for English Language Learner students and students requiring math and literacy assistance. The proposed FY23 budget ensures all students have access to learning and co-curricular activities that are inclusive, emphasize parity, and do not require the payment of additional fees to participate. The proposed FY23 budget provides the materials, technology tools, and counseling resources students require to achieve and grow.

Dr. Gutekanst recapped the following budget priorities: Implement Portrait of a Needham Graduate Strategic Priorities; Provide resources to address learning and social and emotional health needs of all students; Ensure targeted interventions at elementary/middle levels combined with consistent time on learning in elementary classrooms supports all learners; Continue the ongoing refinement of curriculum, instruction and assessment practices; and Develop and maintain educational resources and a technology infrastructure that supports student learning and meets District goals.

Dr. Gutekanst stated that the proposed FY23 budget request is \$87,200,560, a 4.3% increase over FY22, and includes Contractual Salary Increases of \$1,858,890 and a Level Service request of \$704,587 as well as Program Improvements in the amount of \$1,126,062 for a total increase of \$3,597,165.

Dr. Gutekanst described how the proposed FY23 budget would support K-12 targeted interventions, equity, and inclusion. Dr. Gutekanst also described additional initiatives within the proposed budget request to strengthen student learning and support in the Needham Public Schools. Dr. Gutekanst summarized a look ahead towards FY24 needs. Dr. Gutekanst outlined next steps in the budget process. The entire presentation is available online at [www.needham.k12.ma.us](http://www.needham.k12.ma.us). Discussion followed.

#### Update on Health & Safety

#### Update on Health & Safety

Dr. Gutekanst led the discussion on this item. He stated that the Joint Committee on Health and Safety Committee met yesterday. He provided an update on that discussion. He stated that as of December 1, the positivity rate in Needham stands at 2.03%. He stated that the



hospitalization rate among children remains low. He stated that overall, children make up only 2.1% of current hospitalizations in the state. Dr. Gutekanst stated that in October and November, each of the schools showed that there had been a total of 307 close contacts, students only, who had exposure at school. He stated that those students participated in test-to-stay and remained in school. Dr. Gutekanst encouraged families and community members to visit the districts' webpage for daily COVID-19 updates. He stated that only one contact he is aware of became positive after being identified as close contact.

Dr. Gutekanst referred to the data on breakthrough cases in Massachusetts. He stated that of all the fully vaccinated individuals in Massachusetts, 1.6% had had a breakthrough case. He stated that being vaccinated seems to be the most effective way to ward off the virus. Dr. Gutekanst shared data on who is getting sick in Needham and the number of cases by day in Needham. Dr. Gutekanst shared data on student vaccination information as of December 1. Discussion followed.

#### School Committee Comments

#### School Committee Comments

There were no School Committee comments.

A list of all documents used at this School Committee meeting is available at:

A List of  
Documents

<http://www.needham.k12.ma.us/districtinfo/schoolcommittee/packets>2021-2022.

A motion  
was  
made:

At approximately 8:00 p.m., Elizabeth Lee moved, and Andrea Longo Carter seconded the motion to adjourn the School Committee meeting of December 7, 2021.

Adjournment

#### Roll Call Vote:

Michael Greis, Aye; Andrea Longo Carter, Aye; Elizabeth Lee, Aye; Aaron Pressman, Aye; Michael O'Brien, Aye; Matthew Spengler, Aye; and Connie Barr, Aye.

The motion carried; the vote was 7-0-0

Minutes Prepared by  
Cheryl Gosmon





## Needham School Committee

February 1, 2022

---

Agenda Item:     **Discussion**

### **Pollard Middle School Improvement Plan**

#### Background Information:

- The Pollard Middle School Council has worked collaboratively this past year to advise Principal Tamatha Bibbo and develop and maintain the School Improvement Plan.
- In accordance with M.G. L. Chapter 71, Section 59c, the Superintendent has approved the Pollard Middle School Improvement Plan.

#### Persons Available for Presentation:

Ms. Tamatha Bibbo, Pollard Middle School Principal  
Pollard Middle School Council Members

---





**Pollard Middle School**  
**School Improvement Plan**  
**September 2021 - June 2024**  
**Needham Public Schools**

***Presented to the Needham School Committee: February 1, 2022***

***School Council Members:***

Tamatha Bibbo, Principal and Co-Chair  
David Blake, Teacher  
David Dussault, Teacher  
Nirmal Keshava, Parent  
Caterina Krug, Parent  
Maura Lia, Teacher  
Lisa Mancino, Teacher  
Karen Mullen, Community Representative  
Leelah B Murstein, Student  
Claudia Pape, Parent and Co-Chair  
Max Shoemaker, Student



## **Pollard Middle School Statement of Purpose**

*We dedicate ourselves to cultivating academic excellence, civic responsibility, and the personal growth of each member of our community.*

### ***We Know:***

Students enter Pollard Middle School at a critical phase of their development. They experience rapid physiological and emotional changes, an emerging sense of self, and an increased need for self-assertion. Cognitively, middle school students move from concrete toward abstract thinking. Middle school students strive for self-acceptance and a sense of belonging which shapes their behavior and perceptions. Healthy connections with adults and peers are crucial. Adult recognition reinforces students' sense of worth and their ability to balance extreme and competing developmental needs.

### ***We Believe:***

- All students can learn, and it happens at varying rates through multiple learning styles.
- Active learning requires taking risks, and mistakes are valuable for learning.
- Learning through a broad-based curriculum and exposure to different perspectives is integral to educating the whole child.
- Learners should feel safe, cared for, and valued.
- Learning requires a partnership between school, home, and the community.

### ***We Work To Provide:***

- A student-centered curriculum that is experiential, interdisciplinary, and exploratory.
- A staff that plays multiple roles in fostering student growth as they share knowledge, serve as role models, and respond to each individual's needs.
- A middle school environment that stresses civic and global awareness and each student's role as a member of a family, a community, and society at large.

### ***We Strive To Develop:***

- Creative and critical thinkers.
- Confident and open-minded risk-takers.
- Responsible and thoughtful decision-makers.
- Articulate and reflective communicators.
- Collaborative and socially conscious contributors to the community.



***The Improvement Process:***

Pollard Middle School is committed to an improvement process that addresses both the short and long-term needs of all students in their middle school years. Our *School Improvement Plan*, which is aligned with the *Needham Public Schools' District Goals*, establishes requisite strategies and actions that manifest themselves through our work and priority areas to support student achievement. We believe that it is necessary for staff, parents, students, and community to be involved and to work together in this process.

## **Needham Public Schools**



**MISSION:** A school and community partnership that creates excited learners, inspires excellence, & fosters integrity.

**VISION:** Preparing ALL Needham Public Schools students to be:

- Creative Thinkers and Problem Solvers;
- Communicators and Collaborators;
- Socially and Culturally Responsive Contributors;
- Responsible and Resilient Individuals;
- Empowered Learners

**CORE VALUES:**

- Scholarship
- Community
- Citizenship
- Personal Growth



## **POLLARD CORE VALUES:**

*All members of the Pollard community will be curious, confident, and independent learners; act with compassion, integrity, and inclusivity; and strive for personal growth.*

## **NEEDHAM STRATEGIC PRIORITIES:**

### **1. All Students Are Drivers of Their Own Learning**

- 1A) Incorporate opportunities for student choice, independent learning, & personalized pathways*
- 1B) Provide structures & experiences that enable student efficacy, leadership, and voice*
- 1C) Teach students the content & skills necessary for them to grow personally and academically.*

### **2. All Students Experience Integrative Teaching & Learning**

- 2A) Extend interdisciplinary teaching and learning practices Pre-K to 12*
- 2B) Embed Portrait Competencies, Technology, Inclusive Practices, SEL, and Equity into all curricula and instructional practices*
- 2C) Provide opportunities for students to demonstrate knowledge and skills through multiple means of expression.*

### **3. All Students Learn & Grow Within Adaptable Environments**

- 3A) Support and design classroom models and environments that foster collaboration & innovation*
- 3B) Provide time, schedules, and spaces that promote learning objectives*
- 3C) Complement instruction with accessible learning beyond the classroom, within the community, and in partnership with families.*

### **4. Infrastructure Supports Needs of All Students**

- 4A) Provide staffing, facilities, and budget resources aligned to district priorities*
- 4B) Implement a recruitment, retention, and development process for staff growth and diversity*
- 4C) Establish a professional learning structure supporting equity and the Portrait vision.*



School Goals	Strategic Priority	Action Steps/ Strategies Employed	Person(s) Responsible	Impact on Students/ Ways to Measure Success	Timeline
<b>1.</b> Maintain an environment in which staff and students' diverse backgrounds, identities, strengths and challenges are respected, affirmed and celebrated, honored, by ensuring equitable and culturally responsive teaching and learning.	1A, 1B, 1C 2B 3C 4B, 4C	<ul style="list-style-type: none"> <li>Investigate curricular choices, instructional practices, communication, etc.</li> <li>Include cultural proficiency focus in curricular and advisory instruction.</li> <li>Complete an inventory of lessons/ maps of what exists -(curriculum map)</li> </ul> Dedicating 10 hours of PD to affirming our LGBTQ student experience. <ul style="list-style-type: none"> <li>Ensuring our policies and practices support our students.</li> </ul>	PATM	<ul style="list-style-type: none"> <li>Students will thrive in a culturally responsive classroom/ school environment. Cultural proficiency creates a community of acceptance, affirmation, and safety for all students.</li> </ul> <b>(Communicators &amp; Collaborators; Socially &amp; Culturally Responsive Contributors; Responsible &amp; Resilient Individuals; Empowered Learners)</b>	June 2024
<b>2.</b> Determine and expand special education and regular education co-teaching model as a Tier 2 & 3 intervention.	1A, 1C 2B 3A, 3B 4C	<ul style="list-style-type: none"> <li>Explore and define the co-teaching model in specialized programs.</li> <li>Enhance our co-teaching and inclusion support model.</li> <li>Coordinate expectations among all departments.</li> <li>Contract coaching consultant to support adult learning.</li> </ul>	PATM	<ul style="list-style-type: none"> <li>Students' learning community will be inclusive and differentiated to support diverse learners.</li> </ul> <b>(Creative Thinkers &amp; Problem Solvers; Communicators &amp; Collaborators; Socially &amp; Culturally Responsive Contributors; Empowered Learners)</b>	June 2023
<b>3.</b> Incorporate and align the recommendations, competencies, and goals from Portrait of a Needham Graduate (PONG).	1B 2B 4C	<ul style="list-style-type: none"> <li>Communicate and imbed the competencies for all students.</li> <li>Self-identify strengths and areas of growth/ opportunities.</li> <li>Conduct gap analysis and develop learning opportunities where needed.</li> </ul> Align all curricular/ instructional strategies to PONG.	Teachers	<ul style="list-style-type: none"> <li>Students will be provided opportunities to learn, practice, meet and assess the key competencies.</li> </ul> <b>(Creative Thinkers &amp; Problem Solvers; Communicators &amp; Collaborators; Responsible and Resilient Individuals)</b>	June 2022



School Goals	Strategic Priority	Action Steps/ Strategies Employed	Person(s) Responsible	Impact on Students/ Ways to Measure Success	Timeline
<p><b>4.</b></p> <p>Pilot an "elective unit" in ELA for 8th graders based on student interest.</p>	1A	<ul style="list-style-type: none"> <li>• ELA teachers design markedly different but still standards-based units of study for 8th grade ELA</li> <li>• The ELA department ensures smooth logistics and clear objectives</li> <li>• At the end of the pilot, solicit student feedback regarding skills acquisition, accessibility, and engagement</li> <li>• Convene as an ELA department to determine any necessary revisions</li> </ul>	ELA dept. Head & Teachers	<ul style="list-style-type: none"> <li>• Students will take responsibility for actions, self-advocate, adapt to change, and engage in self-directed learning by having choice and agency over the content they pursue in ELA for five full weeks.</li> </ul> <p><b>(Responsible and Resilient Individuals; Empowered Learners)</b></p>	June 2022
<p><b>5.</b></p> <p>Formalize equity-centered curricular and instructional practices in all disciplines.</p>	2B 4C	<ul style="list-style-type: none"> <li>• Professional learning focused on equity</li> <li>• Alignment to ensure consistency and intentionality of the work.</li> <li>• Maintain and communicate equity team and determine focus</li> <li>• Differentiate PD for staff</li> </ul>	Middle Level Cabinet Equity Team	<ul style="list-style-type: none"> <li>• Students will see themselves positively represented in our curriculum and instructional practices. The intentional and interwoven work will provide students with a sense of affirmation and celebration of their cultures.</li> </ul> <p><b>(Communicators &amp; Collaborators; Socially &amp; Culturally Responsive; Responsible and Resilient Individuals; Empowered Learners)</b></p>	June 2024



School Goals	Strategic Priority	Action Steps/ Strategies Employed	Person(s) Responsible	Impact on Students/ Ways to Measure Success	Timeline
<p><b>6.</b></p> <p>Assess the current state of interdisciplinary opportunities and elective rotation classes to ensure access and opportunities.</p>	<p>1A, 1B, 1C 2A, 2B, 2C 3A, 3B, 3C 4A, 4B, 4C</p>	<ul style="list-style-type: none"> <li>Investigate interdisciplinary opportunities</li> <li>Using Project Based Learning (PBL), design at least 1 opportunity/year</li> <li>Collaborate and partner with the community.</li> <li>Identify resources and needs, including PD.</li> <li>Investigate required and non-required classes across both grade levels.</li> <li>Solicit student feedback regarding electives.</li> <li>Introduce American Sign Language and the Deaf Community (ASL) as a new course offering.</li> <li>Identify needs and make recommendations for elective rotation/trimester class enhancements.</li> </ul>	<p>Principal, PATM, Teachers</p>	<ul style="list-style-type: none"> <li>Students will have an opportunity to engage in a project based learning in an interdisciplinary way.</li> <li>Students will have an opportunity to enroll in more elective classes, thus exposing them to additional opportunities to learn valuable skills in a variety of disciplines.</li> </ul> <p><b>(Creative Thinkers &amp; Problem Solvers; Communicators &amp; Collaborators; Socially &amp; Culturally Responsive Contributors; Responsible and Resilient Individuals; Empowered Learners)</b></p>	<p>June 2024</p>
<p><b>7.</b></p> <p>Explore and implement the efficacy of restorative circles.</p>	<p>1A, 1B, 1C</p>	<ul style="list-style-type: none"> <li>Introduce the use of circles with each advisory on one cluster (2021-2022)</li> <li>Discuss/receive feedback from teachers and students on how to use circles in the future</li> <li>Organize PD for the entire staff on the use of circles based on feedback</li> <li>Create circles for teachers to use in extended advisories and/or when situations arise in the building</li> </ul>	<p>Assistant Principals</p>	<ul style="list-style-type: none"> <li>Students will have an opportunity to experience the power of using circles as part of regular classroom practice.</li> <li>In circle, students will practice respect, empathy, problem solving, self regulation, self awareness in an environment designed to promote equality and opportunities for shared leadership</li> </ul> <p><b>•(Creative Thinkers &amp; Problem Solvers; Communicators &amp; Collaborators; Socially &amp; Culturally Responsive Contributors; Responsible and Resilient Individuals; Empowered Learners)</b></p>	<p>June 2023</p>



School Goals	Strategic Priority	Action Steps/ Strategies Employed	Person(s) Responsible	Impact on Students/ Ways to Measure Success	Timeline
<b>8.</b> Enhance school-home communication and family/ caregiver partnerships.	3C	<ul style="list-style-type: none"> <li>• Identify needs and make recommendations to enhance partnerships</li> <li>• Determine new mechanisms to reach all families with feedback and real time updates</li> <li>• Explore efficacy of student-led conferencing/ portfolios K-12</li> </ul>	Principal and APs	<ul style="list-style-type: none"> <li>• Students will be able to self assess and develop metacognitive skills.</li> <li>• Families will gain a closer relationship with schools and build trust in the structures and systems</li> </ul> <p><b>(Communicators &amp; Collaborators; Socially &amp; Culturally Responsive Contributors; Responsible and Resilient Individuals)</b></p>	June 2024
<b>9.</b> Define and determine counseling models (using MTSS).	1A 2B 4C	<ul style="list-style-type: none"> <li>• Professional learning focused on tiered levels of counseling services.</li> <li>• Alignment to ensure consistency and intentionality of the work from grade 7-12.</li> <li>• Establish, maintain, and communicate criteria for tiered levels of counseling services for all students</li> <li>• Differentiate PD for staff around tier 1 classroom responses for student needs</li> <li>• Collaborate with district-level professionals around counseling strategies at all Needham Public Schools</li> </ul>	PATM, SpEd., Guidance	<ul style="list-style-type: none"> <li>• Students will be able to self assess and develop metacognitive skills.</li> <li>• Families will gain a closer relationship with schools and build trust in the structures and systems</li> <li>• Staff will continues to support all students with their mental health and well-being</li> </ul> <p><b>(Creative Thinkers &amp; Problem Solvers; Communicators &amp; Collaborators; Socially &amp; Culturally Responsive Contributors; Responsible and Resilient Individuals; Empowered Learners)</b></p>	June 2023



## **Glossary**

**American Sign Language (ASL):** A complete and organized visual language that is expressed by facial expression as well as movements and motions with the hands.

**Multi-Tiered Systems of Support (MTSS):** A framework for how school districts can build the necessary systems to ensure that each and every student receives a high quality educational experience. It is designed to support schools with proactively identifying and addressing the strengths and needs of all students by optimizing data-driven decision-making, progress monitoring, and the use of evidence-based supports and strategies with increasing intensity to sustain student growth.

**Pollard Administrative Team (PATM):** Principal; 2 Asst. Principals; ELA, math, science, social studies, special education, and literacy coordinators.

**Professional Development (PD):** Adult to earn or maintain **professional** credentials such as academic degrees to formal coursework, attending conferences, and informal learning opportunities situated in practice. It has been described as intensive and collaborative, ideally incorporating an evaluative stage.<sup>1</sup>

**Project Based Learning (PBL):** A teaching method in which students learn by actively engaging in real-world and personally meaningful projects.<sup>2</sup>

---

<sup>1</sup> [https://en.wikipedia.org/wiki/Professional\\_development](https://en.wikipedia.org/wiki/Professional_development)

<sup>2</sup> <https://www.pblworks.org/what-is-pbl>



# Pollard School Improvement Plan 2021-2024

---





# School/Program Improvements

- Data Science I & II
- Chinese Culture AND Perspectives & Connection Culture Course
- Literacy Support in 7 & 8
- LBC ELA
- Transitions Program
- ASL elective for SY 2022-2023
- Spanish 7A- Intro course
- Launching Scholars Leadership Lessons

- TV News
- Clubs & Activities
- NEW: Board games and Fun!
- NEW: Stock Market Game
- NEW: Fishing and Outdoors
- NEW: Pollard Power: Girls Empowerment
- Gender Sexuality Alliance/ Social Justice League split
- TRIPS: Ski Club

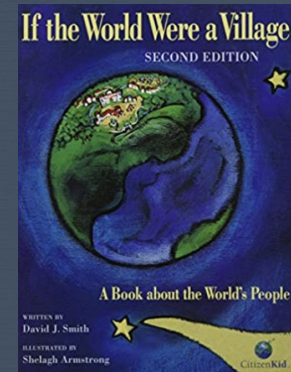
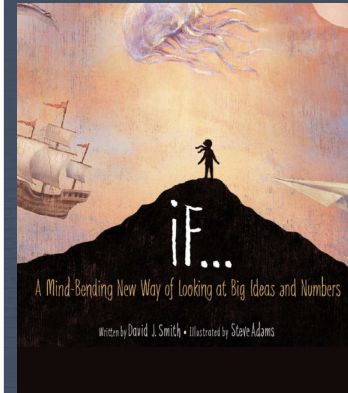




## Data Science I and II

- ✗ Introductions to Spreadsheets & Big Data
- ✗ Telling Stories Using Data
- ✗ Ethics
- ✗ Creating Catchy Headlines
- ✗ Diverse Speakers: Parents & Community Members

- ✗ Field Trip to Mitchell Elementary



- ✗ Tableau Software (Data Science II)



# Key:

Release Year:

2014: 2015: 2016:



Total gross:

Above Average:



Below Average:



Movie Rating:

PG: PG-13:



Movie Genre:

Action: Drama: Comedy:

A D C

Adventure: Musical:

AD M

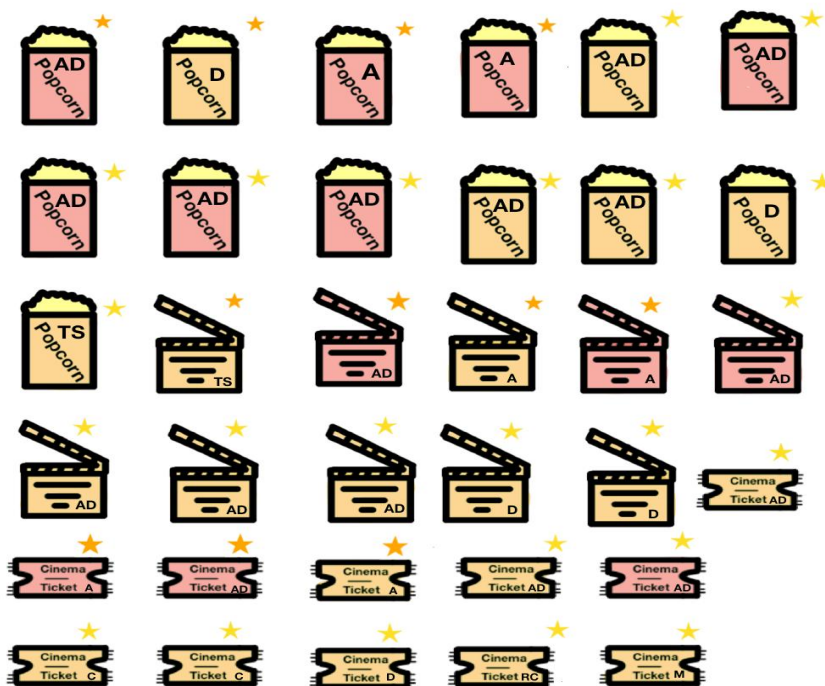
Thriller suspense:

TS

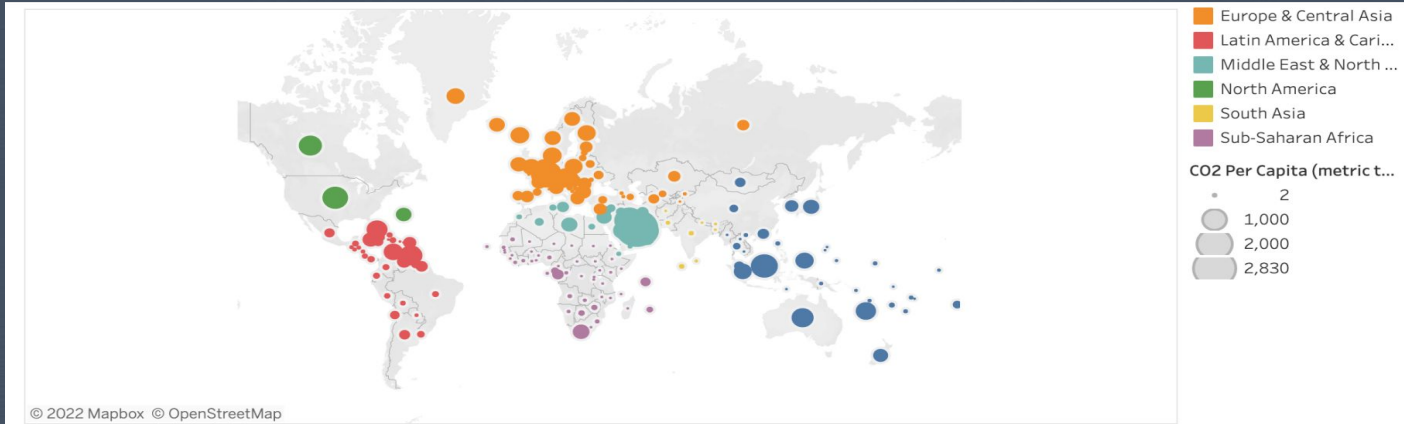
Romantic Comedy:

RC

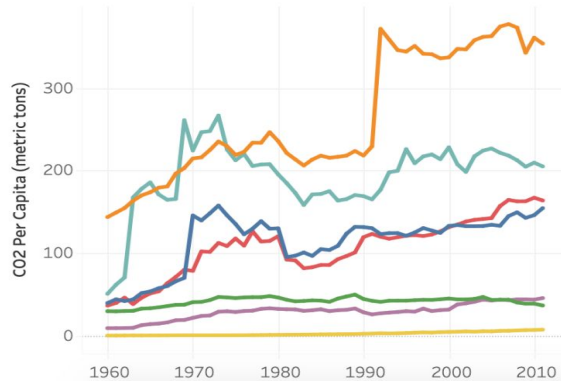
## What To Watch On Disney And What Not To Watch 2014-2016 PG & PG-13 Edition



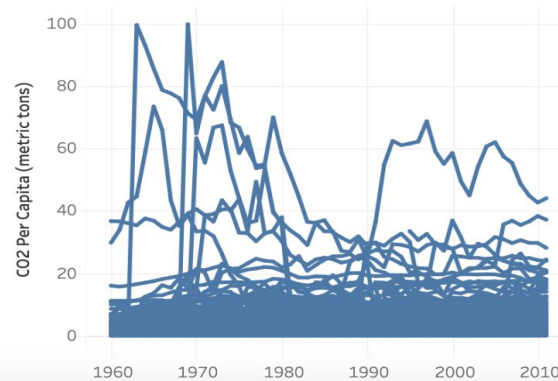




Sheet 2



Sheet 1









## 8th Grade ELA Elective Unit

*Preparing students to raise questions driven by curiosity, self advocate, adapt to change, and engage in self-directed learning.*

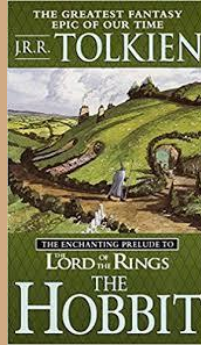
Students rank their preferences of five different choices. The courses vary in terms of content, genre, learning environment, and end product.





# ELA Elective Unit Choices

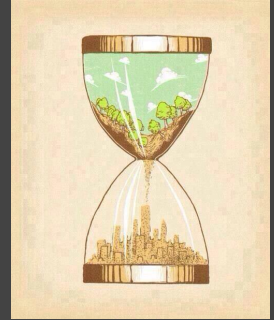
*Once Upon A Twisted Time: The Dark Origins of Fairy Tales*



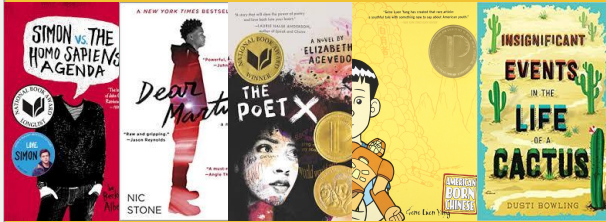
**There and Back Again:  
Fantasy,  
the Hero,  
and You**

What are We  
Supposed to  
Think?

Social  
Commentary



Windows and Mirrors



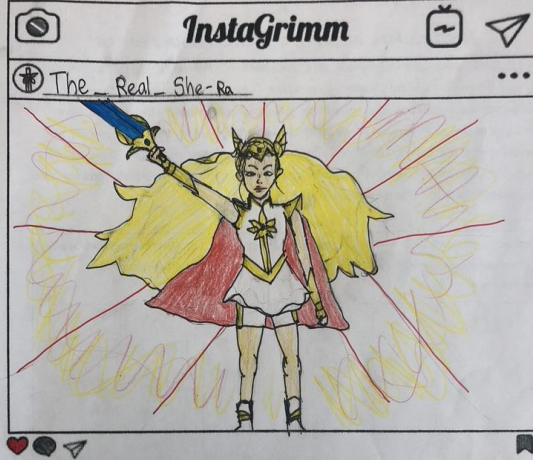
**The Podcast**

93%: 1st or 2nd choice

7%: 3rd choice

YA Literature









**Questions?**



# Pollard TV News: January 31, 2022





# *Once Upon A Twisted Time: The Dark Origins of Fairy Tales*

Think you know classic stories like *Cinderella* and *Little Red Riding Hood* like the back of your hand? Think again... The original fairy tales were much darker than Disney would have you believe.



In this class we will dive deep into the origins of these stories and compare them to the modern day versions known by children all over the world.

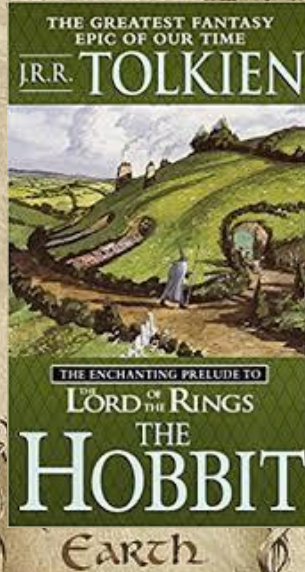


*Because what if they didn't live happily ever after?*



A course offering to **nourish the hero** within YOU...

# **There and Back Again: Fantasy, the Hero, and You**



Is Fantasy so appealing because it reminds us of the hero inside of us? Does fantastic adventure awaken in us our own desire to be more... ourselves? Through our reading of The Hobbit, we will examine what makes Fantasy such an intriguing genre. We will revisit "The Hero's Journey" and its archetypes with an eye towards finding meaning in both this novel and our lives.

"All we have to decide is what to do with the time that is given to us."—J.R.R. Tolkien

"You are the hero of your own story"  
—Joseph Campbell

"EVEN THE SMALLEST PERSON CAN CHANGE THE COURSE OF THE FUTURE." —J.R.R. TOLKIEN

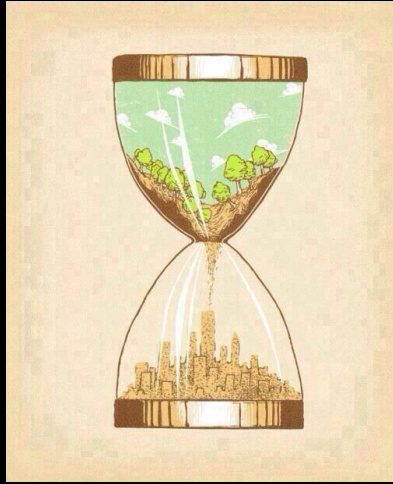
"The cave you fear to enter holds the treasure you seek."—Joseph Campbell





# What do all of these things have in common?

This Painting...



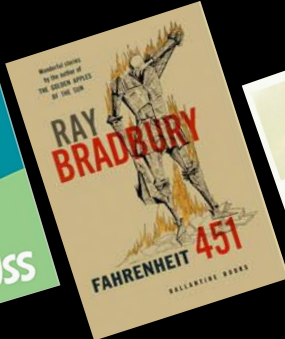
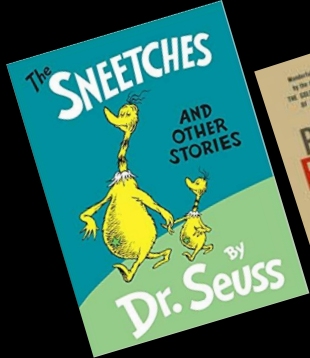
These TV Shows...



This Comic Book...



These Stories...



This Song...



This Website...



[Click here](#) to find out all about this mind-blowing course on **Social Commentary**, and see the world like you've never seen it before!



**WHAT WERE YOU DOING SIX WEEKS AGO?**

**WHAT IF THE ANSWER TO THAT QUESTION DETERMINED THE FATE OF  
YOUR LIFE?**

**WHAT WOULD YOU DO IF YOU WERE ACCUSED OF A CRIME YOU DIDN'T COMMIT?**

# SERIAL

**LISTEN TO THE WORDS OF CONVICTED MURDERER, ADNAN SYED, AS HE TELLS  
HIS SIDE OF THE STORY. THEN, DECIDE FOR YOURSELF – IS HE INNOCENT OR  
GUILTY?**

**\*Disclaimer: Please be aware that we will be covering sensitive and graphic material that may be upsetting and/or triggering to some students.**



# Windows and Mirrors YA Literature

Were any of the books you've read for school published in the last century?

Can you relate to the characters in the books you read for school?

Did you get to choose the last book you read in school?

In this course, you'll choose from one of the above books and get to say "yes" to all of these questions! These books portray diverse protagonists that represent various races, classes, religions, abilities, and sexual orientations. We will primarily focus on personal identity, both for ourselves, and the fictional characters in our books.





## Needham School Committee

February 1, 2022

---

Agenda Item:     **Discussion**

### **Proposed FY2022-2023 School Calendar**

Background Information:

- The School Committee will review the proposed 2022-2023 school calendar and approve the calendar at a subsequent meeting.
- The updated list of legal, cultural and religious holidays for 2022-2023 is also enclosed for your information and will be included in the handbooks.

Person(s) Available for Presentation:

Superintendent of Schools Daniel Gutekanst

---



2022-2023 School Calendar																																								
Aug/September (21)							February (15)							AUGUST 2022 - SEPTEMBER 2022																										
S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	8/29-8/30	Staff Returns/Professional Development																									
28	29	30	31	1	2	3				1	2	3	4	8/31	First Day of School - Grades 1-12																									
4	5	6	7	8	9	10	5	6	7	8	9	10	11	9/1	First day kindergarten/Preschool Orientation																									
11	12	13	14	15	16	17	12	13	14	15	16	17	18	9/5	No School (Labor Day)																									
18	19	20	21	22	23	24	19	20	21	22	23	24	25	9/26	No School (Rosh Hashanah)																									
25	26	27	28	29	30		26	27	28					9/21	PreK-8 Early Release																									
														OCTOBER 2022																										
October (19)							March (23)							10/5														No School (Yom Kippur)												
S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	10/10	No School (Indigenous Peoples Day)																									
						1				1	2	3	4	10/12	PreK-12 Early Release																									
2	3	4	5	6	7	8	5	6	7	8	9	10	11	10/26	PreK-8 Early Release																									
9	10	11	12	13	14	15	12	13	14	15	16	17	18	NOVEMBER 2022																										
16	17	18	19	20	21	22	19	20	21	22	23	24	25	11/9	PreK-12 Early Release																									
23	24	25	26	27	28	29	26	27	28	29	30	31		11/11	No School (Veterans' Day)																									
30	31													11/16	PreK-8 Early Release																									
November (18)							April (14)							11/23														No School - Professional Development												
S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	11/24-25	Thanksgiving Recess																									
			1	2	3	4	5						1	DECEMBER 2022																										
6	7	8	9	10	11	12	2	3	4	5	6	7	8	12/7	PreK-12 Early Release																									
13	14	15	16	17	18	19	9	10	11	12	13	14	15	12/21	PreK-8 Early Release																									
20	21	22	23	24	25	26	16	17	18	19	20	21	22	12/24-1/2	Winter Recess																									
27	28	29	30				23	24	25	26	27	28	29	JANUARY 2023																										
							May (22)							1/2														No School (New Year's Day Observed)												
December (17)														1/3														Classes Resume												
S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	1/11	PreK-12 Early Release																									
				1	2	3		1	2	3	4	5	6	1/16	No School (Martin Luther King Jr.)																									
4	5	6	7	8	9	10	7	8	9	10	11	12	13	1/25	PreK-8 Early Release																									
11	12	13	14	15	16	17	14	15	16	17	18	19	20	FEBRUARY 2023																										
18	19	20	21	22	23	24	21	22	23	24	25	26	27	2/8	PreK-12 Early Release																									
25	26	27	28	29	30	31	28	29	30	31				2/20-2/24	February Recess																									
														MARCH 2023																										
January (20)							June (11)							3/8														PreK-8 Early Release												
S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	3/22	PreK-12 Early Release																									
1	2	3	4	5	6	7					1	2	3	APRIL 2023																										
8	9	10	11	12	13	14	4	5	6	7	8	9	10	4/5	PreK-12 Early Release																									
15	16	17	18	19	20	21	11	12	13	14	15	16	17	4/7	No School (Good Friday)																									
22	23	24	25	26	27	28	18	19	20	21	22	23	24	4/17-4/21	April Recess																									
29	30	31					25	26	27	28	29	30		4/26	PreK-8 Early Release																									
														MAY 2023																										
														5/3														PreK-12 Early Release												
														5/29														No School (Memorial Day)												
														5/31														PreK-8 Early Release												
														JUNE 2023																										
														6/4														GRADUATION: SUNDAY, JUNE 4												
														6/15														Last day of school - No snow days Early Release												
														6/19														No School (Juneteenth) if school is in session												
														6/23														Last day 5 snow days - Early Release												

No School

PreK-12 Early Release (ER)

PreK-8 Early Release (ER)

Professional Development Day

Needham High School classes begin at 8:35 a.m. on Fridays



**Needham Public Schools**  
**Legal, Cultural and Religious Holidays**  
**2022-2023 School Year**

Families and staff in the Needham Public Schools represent diverse cultures, religions and countries of origin. Our school calendar conveys information to the community about when school is in session; however, there are additional days in the school year during which families observe holidays that may require students to be absent from school. Such observances will be considered excused absences from school, and all efforts will be made to assist students to make up work they may miss as of result of their absence. When students will be absent from school for such celebrations, families are encouraged to contact their child's teacher in advance.

<p style="text-align: center;"><b>2022</b></p> <p><u>July</u> 4 Independence Day</p> <p><u>August</u> 30 Ganesh Chaturthi</p> <p><u>September</u> 5 Labor Day (No School) 26 Rosh Hashanah (9/25 - 9/26; No School on 9/26)</p> <p><u>October</u> 5 Yom Kippur (10/4 – 10/5; No School on 10/5) 5 Dussehra/Durga Puja/Vijaya Dashami 9 Sukkot Begins (10/9 – 10/16) 10 Indigenous Peoples Day (No School) 24 Diwali/Deepavali</p> <p><u>November</u> 11 Veteran's Day (No School) 24 Thanksgiving (No School)</p> <p><u>December</u> 18 Hanukkah Begins (12/18-12/26) 25 Christmas (No School) 26 Kwanzaa Begins (12/26 - 1/1)</p> <p style="text-align: center;"><b>2023</b></p> <p><u>January</u> 1 New Year's Day (No School 1/2 Observed) 15 Makar Sankranti/Pongal 16 Martin Luther King, Jr. Day (No School) 22 Chinese New Year 22 Lunar New Year</p>	<p><u>February</u> 20 Washington's Birthday/Presidents Day (No School)</p> <p><u>March</u> 7 Purim (3/6-3/7) 8 Holi 22 Ramadan Begins (3/22 – 4/21)</p> <p><u>April</u> 5 Passover Begins (4/5 - 4/13) 7 Good Friday (No School) 9 Easter 14 Vaisakhi 14 Orthodox Good Friday 16 Orthodox Easter 17 Patriot's Day (No School) 21 Eid al Fitr/Eid ul-Fitr (4/21-4/22)</p> <p><u>May</u> 29 Memorial Day (No School)</p> <p><u>June</u> 19 Juneteenth Independence (No School if the school year is extended due to snow days)</p>
--	--





## Needham School Committee

February 1, 2022

---

Agenda Item:     **Discussion**

### **Update on Health & Safety**

Background Information:

- The Superintendent will share available health and safety updates.

Person(s) Available for Presentation:

Superintendent of Schools Daniel Gutekanst

---



# Health and Safety Update Needham School Committee

---

**Healthy.  
Safe.  
Open for Learning.**

February 1, 2022

---





# New Diagnostic Testing Program



## Why will we supply at home tests?

We will put these tests into the hands of staff and families to:

- **Provide** them with a health resource that is scarce;
- **Strengthen** prevention efforts;
- **Aid** in the identification of positive cases; and
- **Build** confidence during a time of uncertainty.

## How will we accomplish this?

We will use the allotment of test kits from DESE and the tests the NPS bought and:

- **Ask** each staff/family to opt in to receive one test kit per week (2 tests each kit);
- **Send** a text/email through our Health Attestation app to families to opt in
- **Distribute** weekly the test kits to those individual staff/students; &
- **Require** one test be taken on Sunday and another midweek, preferably Wednesday; students report only positive tests to school; a test may be used flexibly to address a symptomatic student at home anytime during the week



# New Symptomatic Testing Program

---

## Who can participate?

- Staff and students. Students who display symptoms during the school day will be assessed by the school nurse and, if appropriate, be tested.
- Positive individuals will be sent home.

## How does an individual sign up?

- Families sign up children on the CIC portal. If you have already signed up for testing, You are all set!

## Who does the testing?

- CIC staff conduct the testing.

## What happens next?

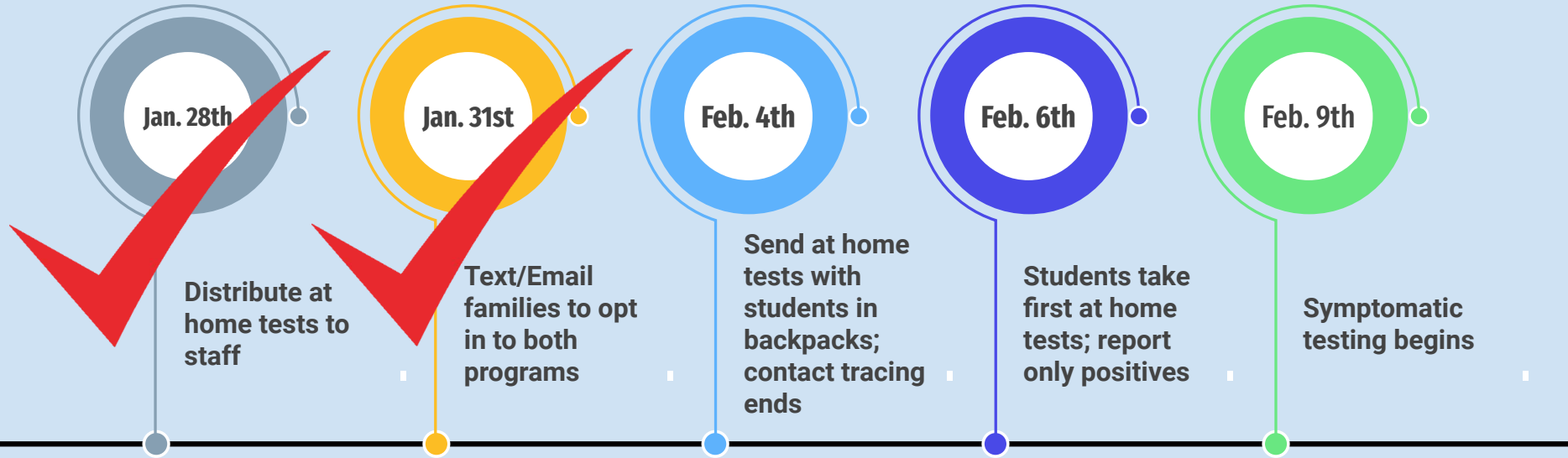
- Staff opt in (one time) this week to receive at home test and then each week thereafter.
- Families opt in (one time) next week & receive first test kit on or about 2/4 & each week thereafter.
- Symptomatic testing begins week of 2/7; contract tracing ends on 2/7.





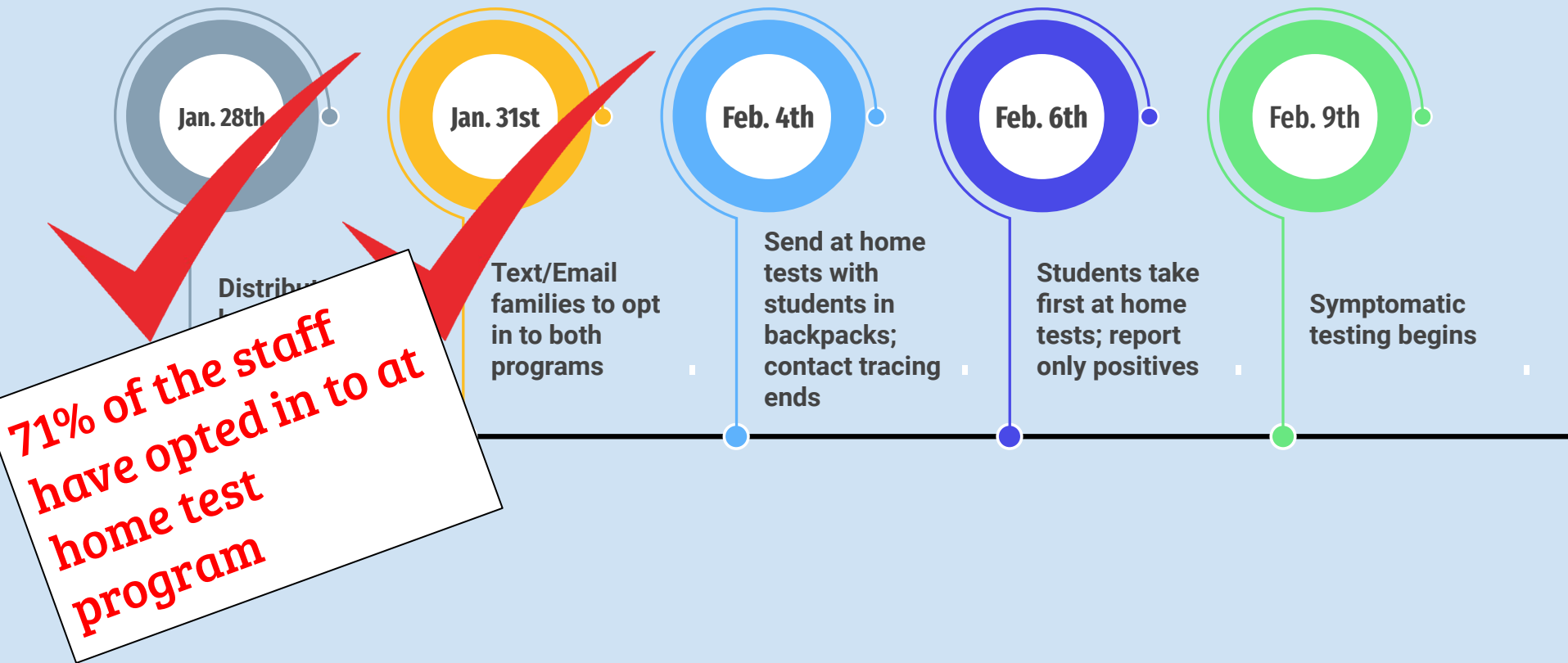
# Timeline for New Testing Program

---



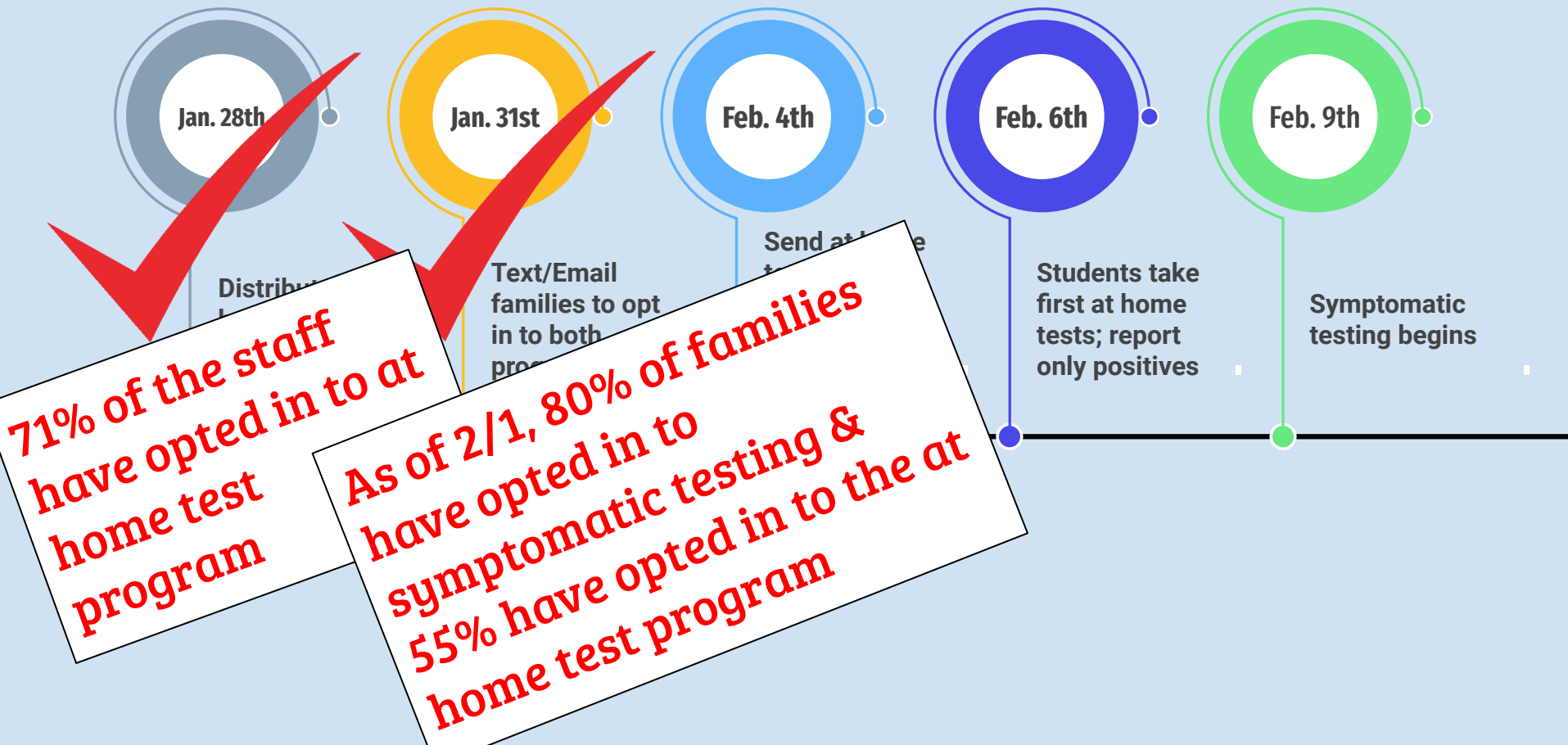


# Timeline for New Testing Program





# Timeline for New Testing Program





## What stays the same in the Needham Public Schools?

---

- **The district's commitment to health and safety remains the #1 priority.**
- The health attestation remains in place.
- Masking remains in place until it is feasible and safe to make masking optional.
- Hygiene, ventilation, and visitor protocols remain in place.
- *Individuals who are sick should stay home!*
- Where can I get more information? [NPS Health & Safety](#)

**Healthy. Safe. Open for Learning.**

---





## Needham School Committee

February 1, 2022

---

### Agenda Item:     **Action**

### **Approve 2022-2023 Middle School and High School Programs of Studies**

#### Background Information:

- The high school Program of Studies has been updated to reflect revisions based on School Committee feedback. See page 3 and pages 41-47.

#### Action Recommended:

Upon recommendation of the Superintendent, that the Needham School Committee approves the 2022-2023 Middle School and High School Programs of Studies as submitted.

---



NEEDHAM PUBLIC SCHOOLS  
Needham, Massachusetts

MIDDLE SCHOOL PROGRAM OF STUDIES

GRADES 6 – 8

2022 - 2023

Dr. Dan Gutekanst  
Superintendent of Schools

Dr. Terry Duggan  
Assistant Superintendent for Student Learning



# TABLE OF CONTENTS

<b>MISSION AND VISION</b>	<b>PAGE</b>
Portrait of a Needham Graduate	3
Statement of Purpose	4
Program Overview	5
Cluster Model	5
Course Scheduling	6
 <b>DEPARTMENT OVERVIEW</b>	
ELA	7
Fine and Performing Arts	7
Health	9
Math	9
Media and Digital Learning	11
Science	11
Social Studies	12
Wellness	12
World Language	13
Structured Learning Support	14
Community Service Learning Project	14
 <b>COURSE DESCRIPTIONS</b>	
English Language Arts	15
Fine and Performing Arts	19
Co-Curricular Fee Based Performance	25
Mathematics	27
Media and Technology	29
Science	29
Social Studies	31
Wellness	32
World Languages	37



## NEEDHAM PUBLIC SCHOOLS PORTRAIT OF A NEEDHAM GRADUATE



### **MISSION:**

A school and community partnership that creates excited learners, inspires excellence, & fosters integrity. \_

### **VISION:**

Preparing ALL Needham Public Schools students to be:

- Creative Thinkers and Problem Solvers (CT & PS);
- Communicators and Collaborators (CC);
- Socially and Culturally Responsive Contributors (SCRC);
- Responsible and Resilient Individuals (RRI);
- Empowered Learners (EL)

### **CORE VALUES:**

- Scholarship
- Community
- Citizenship
- Personal Growth

### **HIGH ROCK SCHOOL VALUES:**

*Learning, Self-Discovery, Caring for Others*

### **POLLARD MIDDLE SCHOOL VALUES**

*All members of the Pollard community will be curious, confident, and independent learners; act with compassion, integrity, and inclusivity; and strive for personal growth.*



## NEEDHAM MIDDLE SCHOOLS STATEMENT OF PURPOSE

*We dedicate ourselves to cultivating academic excellence, civic responsibility, and the personal growth of each member of our community.*

### ***We Know:***

Students enter Middle School at a critical phase of their development. They experience rapid physiological and emotional changes, an emerging sense of self, and an increased need for self-assertion. Cognitively, middle school students move from concrete toward abstract thinking. Middle school students strive for self-acceptance and a sense of belonging which shapes their behavior and perceptions. Healthy connections with adults and peers are crucial. Adult recognition reinforces students' sense of worth and their ability to balance extreme and competing developmental needs.

### ***We Believe:***

- All students can learn, and it happens at varying rates through multiple learning styles.
- Active learning requires taking risks, and mistakes are valuable for learning.
- Learning through a broad-based curriculum and exposure to different perspectives is integral to educating the whole child.
- Learners should feel safe, cared for, and valued.
- Learning requires a partnership between school, home, and the community.

### ***We Work To Provide:***

- A student-centered curriculum that is experiential, interdisciplinary, and exploratory.
- A staff that plays multiple roles in fostering student growth as they share knowledge, serve as role models, and respond to each individual's needs.
- A middle school environment that stresses civic and global awareness and each student's role as a member of a family, a community, and society at large.

### ***We Strive To Develop:***

- Creative and critical thinkers.
- Confident and open-minded risk-takers.
- Responsible and thoughtful decision-makers.
- Articulate and reflective communicators.
- Collaborative and socially conscious contributors to the community.



## **PROGRAM OVERVIEW**

The middle school program has been developed with the understanding that the young adolescent is at a critical phase in their personal and social development. Given that students will face a rapidly changing world there is a core belief that students require a rigorous program that has a broad-based curriculum, which is experiential, interdisciplinary, and exploratory in nature. As a result, the program at the middle school level in Needham is comprehensive and it is expected that students, with few exceptions, will take all courses represented at each grade level outlined below.

## **CLUSTER MODEL**

At High Rock and Pollard we value the National Middle School Association's ideal of developing and sustaining a middle level program that embodies interdisciplinary teaming, advisory, varied instruction, exploratory programs, and transitional activities. The current design of interdisciplinary teams in our middle level program is referred to as our "cluster model."

The environment of a cluster assists in supporting the transition of students from an elementary school model to their high school experience. Clusters create smaller schools or "family units" within our larger school community and support students in their cognitive, social and emotional development. Having this team of teachers working with the same group of students provides flexibility in order to schedule a variety of curriculum needs and foster programs of interdisciplinary study.

Clusters are developed in order to have heterogeneous classes that maximize the educational possibilities for all children. Our primary goal is to create balanced classes in terms of gender, academic strengths, social maturity, special needs, and supportive peer groups that are likely to promote healthy and productive learning environments.

Students in each grade will receive instruction in the four (4) core subjects every day, which includes English Language Arts (ELA), mathematics, science, and social studies. In addition to the study in these core subjects, students will participate in Essential courses. Students participate in two Essential courses per day that occur on a rotating basis. These courses are scheduled as a half-trimester, trimester, or year-long courses.



## COURSE SCHEDULING

A typical daily schedule for students is as follows:

Advisory
English
Math
Science
Social Studies
Essentials 1
Essentials 2

Students participate in multiple essential/ elective courses per day that occur on a rotating basis. These courses are scheduled as trimester or year-long courses. Outlined are courses assigned at each grade level.

<b>Grade 6 Essentials</b>	<b>Grade 7 Essentials/ Electives</b>	<b>Grade 8 Essentials/ Electives</b>
Physical Education	Physical Education	Physical Education
Health	Health	Health
World Language - Spanish	World Language - Spanish, French, Mandarin	World Language - Spanish, French, Mandarin
Visual Art	Visual Art 7	Visual Art 8
Digital Technology	Digital Technology	Engineering Design
Literacy for Learning	Engineering Design	Data Science I
	Data Science I	Data Science II
Performing Arts Option*	Performing Arts Option* <b>or</b> Arts Rotation Grade 7**	Performing Arts Option* <b>or</b> Arts Rotation Grade 8**

### \*Performing Arts Options

<b>Grade 6</b>	<b>Grade 7</b>	<b>Grade 8</b>
Beginning Band Concert Band Strings Ensemble Chorus/General Music	Concert Band Strings Ensemble Cambata Chorus Treble Chorus	Concert Band Strings Ensemble Cambata Chorus Treble Chorus

### \*\*Arts Rotations (For students not choosing a Performing Arts Option in Grade 7 or 8)

<b>Grade 6</b>	<b>Grade 7</b>	<b>Grade 8</b>
	Ceramics/Sculpture 7 Music 7 Theater Arts 7	Ceramics/Sculpture 8 2D Design 8 Global Arts 8 Theater Arts 8



## **DEPARTMENT OVERVIEW**

### **ENGLISH LANGUAGE ARTS**

Through a wide variety of classroom learning experiences which are largely literature based, our goal is to teach children how to fully comprehend and respond to what they read and teach them how to use the English language most effectively in their writing and speaking. This program has three components: language arts, composition, and literature.

The English curriculum draws on the four main literary genres: fiction, nonfiction, poetry, and drama. Selected age-appropriate readings within these genres are meant to expose students to a vibrant cross-section of viewpoints, cultures, and communities from around the world, past and present, and to foster an appreciation of this diversity.

Along with gaining skills in comprehending text on a factual level, students also learn how to think critically while they read and are given the tools to respond analytically and personally. These responses include small group and whole-class discussions, written responses, and projects that tap students' strengths in visual and performing arts. Students are also encouraged to read independently outside of what is required in school by teachers who model for children a love of reading as a lifelong habit of mind.

In all three grades, emphasis is placed on using the five-step writing process (prewriting or brainstorming, drafting, revising, editing, and publishing) to meet success in conveying ideas on paper. Students will increasingly learn how to adapt the writing process to fit the demands of individual assignments and shape their writing to satisfy specific purposes and audiences.

Generally, writing assignments ask students to:

- provide information or explain what something is about (expository);
- tell a story (narrative);
- describe a place or person (descriptive);
- persuade others to understand and accept your point of view (persuasive);
- express thoughts and feelings and create fictional worlds (expressive).

In all the writing they do, students are encouraged to develop their own individual voices and styles.

### **FINE AND PERFORMING ARTS**

As a core academic subject, Needham Public Schools students engage in a rigorous standards based arts education in both the visual and performing arts. Instruction is rooted in the creative process, where students are actively engaged in performing and producing. All students will become skilled in and develop an understanding of the four components of the creative process



as outlined by the National and MA Standards for the Arts; 1. Creating, 2. Performing, Presenting, and Producing, 3. Responding, and 4. Connecting.

Instruction in the Fine and Performing Arts are inherently in alignment with the Vision of Portrait of a Needham Graduate. They encourage and teach students how to be “creative thinkers and problem solvers” and “communicators and collaborators”. The arts also are an avenue for social change and awareness, directly advancing the goal to create students who are “socially and culturally responsive contributors”. Instruction Arts further develops a child’s ability to communicate, think creatively, problem solve, and collaborate.

## **Visual Arts**

The Visual Arts are part of our nation’s Academic Core for all students. In our Visual Arts courses, students explore a variety of mediums and methods in both 2D and 3D. Our hands-on visual arts program captures the imagination, energy, and creativity of the students, while building a variety of skills. We have four distinct goals:

- To build upon and add a layer of complexity to student’s knowledge of art elements, principles, and techniques.
- To develop student’s critical and creative thinking skills through the process of making art (creating the idea, problem-solving, analyzing, evaluating, etc.).
- To develop intra and interpersonal skills through both independent and cooperative learning (including the ability to challenge themselves and explore new possibilities).
- To connect our visual arts program to the arts in life outside the classroom using art and cultural history, current events, etc.

## **Interdisciplinary Visual Arts Program**

Students at the High Rock School receive visual arts instruction throughout the year through a Visual Arts Interdisciplinary Program. The visual arts are integrated into and through the other academic subject areas. The Visual Arts Teacher co-teaches specific units and lessons in science, social studies and ELA, embedding visual art skills and concepts into other academic areas. This program greatly enriches all involved curricula areas and brings real-world elements into the schools, creating a higher level of personal connection and insight.

## **Performing Arts**

Music and theater are part of the performing arts, which are part of our Nation’s Academic Core for all students. The Theater classes offer students an opportunity for individual and group expression through dramatic presentations. The music program offers the middle school student opportunities in three distinct areas: music performance, music theory/skills, and musical self-expression. In addition to the curricular ensembles, students also have the opportunity to participate in several select co-curricular performing groups, which meet outside of the school day. Participation in these select ensembles are by audition and are fee based.



## **Co-Curricular Select Performing Groups**

These performing groups are open to sixth, seventh, and eighth grade students by audition. All ensembles rehearse in the afternoons, outside of the regular school day. Participating students must be members in good standing in the corresponding school ensembles or receive permission from the Fine and Performing Arts Director. There is an ensemble participation fee for each of the performing ensembles if admitted. Any family with financial concerns should contact the Fine and Performing Arts Director.

## **After School Theatrical Productions**

There are two Middle School Theatrical Productions held each year; a Musical in the Winter and a Play in the Spring. These productions are open to sixth, seventh, and eighth grade students. The cast is selected by audition. There are opportunities for interested students to participate in the many facets of a theatrical production including set building, costumes, and the technical theater crew.

## **HEALTH SERVICES**

The Nursing Department bridges healthcare and education and provides evidence-based, episodic care to all students. School nurses build collaborative partnerships with school staff, families, and community partners to ensure that the delivery of school health services is culturally responsive, equitable, and responsive to individual student needs. School Nurses are an integral part of each school's team and help students to optimize their health so that they can fully participate in educational programming and achieve academic success. Services include: illness and injury assessment and treatment, assessment of physical and mental health conditions, health record compliance, illness surveillance, implementation of State mandated screenings and referrals, anticipatory guidance, care coordination, development of individualized healthcare/medical 504 plans and promotion of disease prevention. During the COVID-19 pandemic, school nurses collaborate with community partners and the Public Health Department to address contact tracing, surveillance of COVID-19 cases, and case management.

## **MATHEMATICS**

The Middle School Mathematics Department aspires to equip students with the skills necessary to:

- value mathematics and recognize its importance in real-life.
- demonstrate confidence in their mathematical abilities.
- develop into enthusiastic mathematical problem solvers.
- communicate mathematically both verbally and in writing.
- reason mathematically.

The overarching goal of the Middle School Mathematics program is to provide a sequential transition between the basic arithmetic, geometric, statistical, and problem solving skills studied in the elementary grades to the advanced mathematical skills of algebra, geometry, analysis,



calculus, and statistics taught at the high school. The study of pre-algebra and algebra at the middle level prepares students for a successful transition to high school mathematics and prepares students for a continued study of mathematics and fields that require the use of mathematics.

Our mixed ability groupings in the middle grades provide high expectations for all, with support for those who need it. It is important to build a strong foundation in mathematics in middle school, where we emphasize conceptual understanding, procedural fluency, and application of the mathematics students have learned. Our curriculum enables each student to develop deep mathematical understanding and opportunities to competently apply math concepts and skills in a variety of school, home, and outside settings. Throughout the middle school experience, students will begin developing proficiency in precise mathematical communication, honing skills in both verbal and written mathematical presentation. Students will be challenged by sophisticated mathematical ideas as they move through our program and will develop perseverance, and the ability to reason, prove, and justify.

An important part of student mathematical work in the middle grades is the Massachusetts Standards of Mathematical Practice. These eight practices frame how teachers and students engage with school mathematics:

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Whenever possible, the middle school teachers attempt to integrate the mathematics curriculum with other disciplines. This integration demonstrates to the students that all subjects are connected and not separate entities. In these units, students take knowledge learned in one subject and apply it to situations in other classes. The skills of analysis, synthesis, and generalization are the expected outcomes.

**Calculators are an essential part of the middle school mathematics program.** Students will use calculators to study certain mathematical topics where tedious computation detracts from the learning of concepts and development of problem solving strategies. Calculators will not be used for all units. Mathematical competency should not be dependent upon the use of a calculator.



## **MEDIA AND DIGITAL LEARNING**

Media instruction and information literacy skills, which emphasize research, are integrated into project based learning experiences that occur in all content areas. The library media teacher collaborates with all teachers to integrate these skills into curriculum topics being studied. Students work in the Library/Media Center to gather, organize, evaluate, and use information from a broad range of print and electronic sources.

The library media teacher also collaborates with the language arts teachers to explore varied genres of literature with students, including fiction, non-fiction, poetry, and biography. The library media teacher supports the independent reading programs of the language arts teachers by providing tools and strategies to students to assist them in the selection of independent reading books.

Digital technology instruction is part of a K-12 sequence of skill development. Through direct and integrated instruction, students expand their knowledge and use of various technology tools. There is a continued focus on 21<sup>st</sup> century skills such as collaboration, communication, creativity, critical thinking, and independent problem solving. In grades 6 and 7, students take direct technology instruction through a required one-trimester course. In addition, all teachers, with the support of Technology Integration Specialists, engage students in the use of innovative applications and tools while promoting digital literacy and citizenship.

## **SCIENCE**

It is increasingly important for all students to develop a firm understanding of scientific methods, content and skills. We aim to provide students with the content and skill set for viewing their world and communicating solutions as they make informed decisions about their environment, **health**, use and production of resources, and development of systems and products that will best serve the world's changing societies. Through a variety of lab investigations and experiments, case studies, inquiry opportunities, class discussions, and presentations, students will better understand the integrated nature of STEM (science, technology, engineering and math) fields.

Earth and Space, Life, and Physical Sciences, as well as Technology and Engineering principles, are continually integrated throughout sixth, seventh, and eighth grades. An emphasis is placed on relating the various principles, practices and concepts to real life and multiregional experiences. Development of effective communication (reading, writing, speaking and listening), problem solving, laboratory techniques, and study skills are important objectives of the science program. The integrated, spiraled approach of the curriculum ensures that students develop a strong science foundation, and the regularly applied Science and Engineering Practices ensure that students develop and apply the skills for approaching new challenges and decisions with a scientific mindset and framework.



Thus, in accordance with the State standards, students in *each* grade have ample opportunity to:

- Ask questions and define problems
- Develop and use models
- Plan and carry out investigations
- Analyze and interpret data
- Use mathematical and computational thinking
- Construct explanations and define solutions
- Engage in argument from evidence
- Obtain, evaluate and communicate information.

## **SOCIAL STUDIES**

Now, more than ever, social studies is a key component of a child's education. In order to understand events in the world and to participate in a democratic society, children need to build their knowledge of public policy and the complex interactions of individuals, governments, and nations.

We aspire to equip children with a knowledge of history so that they can begin to understand the multiple reasons why events unfold as they do and that the future is a result of the past. Knowledge of governments, past and present, helps students understand how people organize themselves in different ways. Experience with the viewpoints of diverse cultures and individuals challenge students and teachers alike to examine different opinions and approaches to living. Close attention is paid to essential skills such as writing and reading in history and the social sciences, using geography to understand history and how to use these skills to conduct research. We also dedicate ourselves to providing important experiences in areas such as teamwork and public speaking as well as providing opportunities for students to discuss and analyze current events.

## **WELLNESS**

Health, Physical Education, and Experiential Education make up the middle school portion of our K through 12 comprehensive wellness program. Although each course is taught separately, they each incorporate a multidimensional approach to understanding human health and well-being. In a unique way, each course contributes to each student's ongoing development of skills, knowledge, and attitudes needed to participate in an active, healthy lifestyle. This comprehensive wellness curriculum emphasizes each student's responsibility for his or her own health and well-being based on a six-dimensional wellness model (social, emotional, physical, intellectual, spiritual, and occupational/leisure) with emphasis on personal growth. The middle school wellness program builds upon the knowledge, skills, and behaviors learned and practiced in grades K through 5, and is valuable in preparing middle school students for their high school experience.



## **WORLD LANGUAGES**

World language study in the middle schools focuses on developing students' linguistic and cultural proficiency in a modern language. Curriculum and instruction supports the development of novice range learners, consistent with the national standards for foreign language learning (ACTFL Proficiency Guidelines) and the 2021 Massachusetts Pre-K to 12 World Languages Curriculum Framework.

Students at each grade level will develop the four basic language skills of speaking, listening, reading, and writing. Teachers provide extensive comprehensible input in the target language, use authentic materials, integrate technology, create opportunities for purposeful play, design tasks with interactive exchanges, and use short stories to practice writing and speaking as well as reading comprehension. Teachers of world languages strive to nurture students' love of language learning, positive self-efficacy, and appreciation of diverse cultures.

At Needham High School, students are required to study at least two years of the same world language, though at three or four years is strongly recommended. We currently offer Spanish, French, Latin and Mandarin at NHS.

### **World Language in Grade 6 (full year)**

Students entering High Rock School will continue their study of Spanish through 6th grade. The 6th grade experience is designed to reinforce essential knowledge and skills introduced in the elementary Spanish program and further expand students' communicative capacity and cultural competence. Thematic units of study include: question words and expressions, intro to reading a short novel in Spanish, the school day, numbers, greetings and introductions, and an intro to South America (geography and various countries' practices and products).

### **World Language in Grade 7 (full year)**

Students entering Pollard in 7th grade will have the opportunity to:

- continue their study of Spanish;
- begin Spanish (select Spanish 7A);
- begin French; or
- d) begin Mandarin.

**The language selected at the start of 7th grade is a two year commitment.** It is designed to serve as the foundation for the 2 years of required language study at Needham High School.

### **World Language in Grade 8 (full year)**

Students entering eighth grade will continue to study the same language studied in seventh grade. **The Pollard world language experience is a two year commitment.**



## **STRUCTURED LEARNING SUPPORT (SLS)**

At High Rock School, students have a Structured Learning Support class one period each day. This class is designed to help students slow down, provide guided practice, and deliver support for the diverse and sometimes competing needs of our adolescents. During this class there is a mixture of independent reading, math practice, self organization and planning, and teacher-led extra support.

Students in grade 6 are required to complete 180 minutes a week in their independent reading book and 60 minutes a week in their online math practice program. While there will be some time provided during the SLS class for independent reading and math practice, students will need to spend additional time outside of the school day to complete these weekly time requirements.

## **COMMUNITY SERVICE LEARNING PROGRAM**

Students at Pollard Middle School participate in a Community Service Learning (CSL) Program. The program is implemented over the course of the 7th and 8th grade years and requires students to share their findings with their peers, faculty, and parents/guardians. The goal is to reinforce for students the importance of being active, responsible citizens who commit time and energy to “help make our world a better place.”

Research indicates that if students are involved in their learning in a hands-on way, they are likely to get more out of these learning experiences and feel that their efforts can and do make a difference. We hope that through this program, students will be inspired to become involved with human and animal rights issues in our community and the larger society, both now and in the future.

Students are exposed to service work on a local, national or international level. They consider areas of personal interest in the realm of humanitarian and social justice work, and select a specific social issue and an organization or project in which to base their community service learning. Students select community organizations in and outside of Needham as sites for their service projects. They have a wide range of choices and we encourage parents/guardians to participate in the selection process so that both the student and the parent/guardian can be informed and comfortable with the project and site selected.

The project consists of the following steps:

- Brainstorm and discuss social/societal issues of concern.
- Consider personal and academic interests related to service learning.
- Research the social issue selected for service work.
- Select an organization where a minimum of 10 hours of service is performed.
- Develop an action plan for service learning.



- Reflect on the service done, contributions made, and the learning and personal growth that occurs through the service experience.
- Share their findings with peers, staff, and parents/guardians.

#### Expectations of Student Involvement:

We expect that students will perform a minimum of ten (10) hours of service over their two years at Pollard. Students will begin their community service learning work midway through 7th grade and complete their work in the spring of 8th grade. Full participation in our end-of-year social activities is contingent on the participation in this CSL Program.

## COURSE DESCRIPTIONS

### ENGLISH LANGUAGE ARTS

#### ***GRADE 6 ENGLISH LANGUAGE ARTS (full year)***

Students are immersed in the study of literature, composition, and language arts. The goal is to help students become careful readers and thoughtful, expressive writers **and speakers**.

At the beginning of the year, students review “active reading” strategies and begin their independent reading logs. They review the rudiments of the short story while reading and analyzing classic and contemporary tales such as “The Necklace,” by Guy de Maupassant; “Charles,” by Shirley Jackson **and “All American Slurp” by Lensy Namioka**. Over the course of the year, students read **novels in whole-class and book-club formats**, choosing from a curated list of novels **that vary in style, from fantasy (like *Amari and the Night Brothers* by B.B. Alston) to realistic fiction (like *Half a World Away* by Cynthia Kadohata), to verse novels (like *Crossover* by Kwame Alexander)**. Additionally, students study a variety of short and long nonfiction texts, poems, and myths. Always the emphasis is on knowledge acquisition, interpretation of meaningful passages, and careful examination of theme or main idea. Students learn how to take notes, write analytical responses, back up interpretations with textual evidence, and identify effective craft techniques. Throughout the year, students also read numerous self-selected titles as part of the school’s Independent Reading Program.

In composition, students write in a wide range of genres that include fictional narratives, critical and persuasive essays, book reviews, reflections, journal entries, and various authentic texts such as letters or business memos. They begin by reviewing the steps in the writing process with examination of mentor texts and an emphasis on effective techniques, thoughtful revision of ideas and word choice, and careful **proofreading/editing** to ensure correct punctuation and



capitalization. Students apply their knowledge of short story elements by constructing an original plot line and writing a well-developed story scene. They learn about expository structure and organization: how to write an effective introduction, how to support a thesis statement with facts and evidence, and how to conclude with a summarizing paragraph. As part of the poetry unit, students create an anthology that includes analytical interpretations, original poems, and reflections about their growth as a poet. Throughout this exploration of language and self-expression, the emphasis is on finding one's voice as a writer, developing ideas, and learning effective organizational strategies.

In conjunction with reading and writing activities, students acquire new vocabulary, practice important grammatical constructs, and learn how to speak, argue, and listen effectively.

### ***LITERACY FOR LEARNING (semester course)***

This trimester course is designed to ensure that students gain an introduction to the range of reading skills needed for the complex literacy tasks they will encounter in various academic areas throughout middle school and beyond. In this project-based learning course, students take on the personas of inventors and entrepreneurs and then study a variety of texts in order to understand their purpose and characteristics. Then, they use both their personal lens (consumers) and adopted professional lens (inventors/ entrepreneurs) to create their own texts in service of their companies.

Students explore a selection of real-world texts in order to see how information can be presented through different types of texts across a range of subject areas (i.e. descriptive texts, origin stories, advertisements, business memos, sales pitches, etc.) The texts themselves may vary over the course of the year, depending on the needs and interests of the students. The goal of the course is to enable students to apply the powerful literacy skills and strategies learned in this course to their academic texts in school, as well as in their lifelong reading experiences.

In this course students will:

- Build their awareness of disciplinary literacy, the idea that there are unique skills and strategies used by expert readers and writers in each subject area.
- Identify their personal reading preferences, strengths, and areas for growth.
- Talk about their reading processes with peers to uncover and strengthen how they make sense of challenging texts.
- Read a wide-range of texts while considering text structures and styles, the author or source, and the various skills and approaches a reader must use to navigate different types of challenging reading.
- Learn and apply a core set of strategies that they can use flexibly as readers depending on the text, context and purpose of their reading.

Students demonstrate their learning in various ways including collaborative conversations, self-assessment, written responses, and project-based assessments.



### **GRADE 7 ENGLISH LANGUAGE ARTS (full year)**

In grade 7 ELA, students study literature, composition, vocabulary, grammar, and public speaking. The goal is to help students become careful, inferential readers, critical thinkers, and thoughtful, expressive writers and speakers.

At the beginning of the year, students review “active reading” strategies and effective note taking skills while reading and analyzing a variety of challenging short stories. Building on the work begun in grade 6, students study character development in relation to plot events (the ‘emotional journey’ of the main character), point of view, setting, and theme. Over the course of the year students read a variety of texts, including a young adult novel (*The Outsiders*, by S. E. Hinton), a complex novel (*Roll of Thunder, Hear My Cry* by Mildred Taylor), poetry, nonfiction articles and books, and a number of theme-based literature circle selections. The emphasis is on understanding the influence of history and culture on characters’ behavior and on authors’ decisions as well as appreciating the multiple themes of a complex young adult novel. In discussions and written responses, students learn to support claims and opinions with examples, reasons, and textual evidence. Students explore word choice, language, and writing, with special attention given to understanding figurative language. As students move from concrete understandings to more abstract generalizations, they are encouraged to think broadly and deeply about topical questions, the challenges of adulthood, and their own lives. They study several themes in depth, particularly *identity*, *the role of the individual in society*, and *culture as a determinant of point of view*. Throughout the year, students read numerous self-selected titles as part of the school’s Independent Reading Program.

Students in grade 7 continue to write and experiment with a variety of forms and genres. In addition to summaries and analytical responses, students learn to write short story scenes, poems, personal and persuasive essays, narratives, and informational pieces. Each student in grade 7 develops and presents a portfolio of original poems and interpretations of published poems. Building on the work begun in grade 6, students continue to learn about the elements of an essay, including a well-developed thesis statement, topic sentences, transition words, embedded quotations, and a conclusion that extends the main idea. Increasingly, attention is paid to developing and supporting persuasive arguments, employing effective word choice, and revising and polishing final drafts.

In addition, each week students acquire new vocabulary (including Latin and Greek root words and combining forms); learn about parts of speech, sentence structure, and sentence boundaries; and practice speaking, arguing, and listening effectively. A culminating event is a declamation that is carefully practiced and delivered orally to the class.

### **GRADE 8 ENGLISH LANGUAGE ARTS (full year)**

In grade 8 ELA students study literature, composition, vocabulary, grammar, and public speaking. The goal is to help students become careful, inferential readers, critical thinkers, and thoughtful, expressive writers and speakers.



Building upon previous work in grades 6 and 7, at the beginning of the year students review ‘active reading’ strategies, note taking techniques, and summarizing skills while reading a variety of challenging stories by Jackson, Poe, Connell, Bradbury, LeGuin, and a range of contemporary authors. The emphasis is on careful reading; identification of narrative techniques such as flashback, foreshadowing, and suspense; and understanding symbolism, mood, satire, irony, methods of characterization and theme. Students read, discuss, analyze, and write about short stories using examples and evidence from the text to support their interpretations. As a further assessment, students *apply* everything they have learned about short stories by choosing a story to either continue or re-imagine from another point of view.

As the year progresses, students move from shorter texts – both fiction and nonfiction – to a variety of longer texts, including complex adult novels, memoirs, plays, poetry, and nonfiction. Titles include *Fahrenheit 451* by Ray Bradbury, “*A Midsummer Night’s Dream*,”<sup>2</sup> by William Shakespeare, and *Friedrich* by Hans Peter Richter, among others. The emphasis is always on inferential thinking, identification of text structures particular to each form or genre, language and writing style, the creative choices an author makes, and a thorough evaluation of thematic content. Students learn to read deeply; that is, to reflect on themes and issues in relation to their own experiences, to generalize about larger issues that affect society as a whole, and to compare diverging points of view and the cultural and personal factors that influence an author’s – or a reader’s – perspective. Specific units of study focus on *heroic archetypes*, *moral courage*, *the role of the individual in an unjust society* and *freedom vs. independence*. With increasing sophistication, students learn to make claims about the texts they are reading and support those claims with reasons, examples and evidence rooted in the texts themselves. In the spring of grade 8, students engage in a six-week literature-based study of the Holocaust in which they examine historical roots of the Holocaust, issues of ethics and moral justice, and Holocaust-related contemporary issues such as the treatment of some cultural groups by other cultural groups. Throughout the year, students read, write about, and give oral presentations on numerous self-selected titles as part of the school’s Independent Reading Program.

Students in grade 8 increasingly take control of their own writing as they learn new forms, write longer essays and narratives, and become more sophisticated at revising and editing their pieces. In addition to autobiographical and fictitious narratives and vignettes, students write a number of expository pieces including persuasive essays, literary essays, speeches, and analytical responses to their reading. Learning how to write a sophisticated, well-structured essay is a primary goal as students grow their ability to express themselves in organized structures and with powerful prose. Over the course of the year, students learn to plan and organize their ideas, use examples and evidence to argue effectively, and choose words and phrases precisely. Students are expected to use newly acquired vocabulary - including academic words and figurative language - in their writing and to demonstrate increasing control over the grammatical structures they have studied.



## **FINE AND PERFORMING ARTS**

### **6th GRADE:**

All students are enrolled in a Visual Arts and Performing Arts Course. Students may choose which Performing Ensemble they would like to participate in.

#### ***VISUAL ART 6 (trimester offering/ All students)***

This class focuses specifically on the skills outlined in the MA State Visual Arts Frameworks and bridges the elementary and middle school art programs. Skills learned in the elementary grade are reviewed and expanded upon as students demonstrate their understanding of Visual Art structures and functions. Students will complete units incorporating the elements and principles of art, techniques in drawing, color, design, and ceramics (including observation, abstraction, and expression), craftsmanship, and the creative process. As part of this course, students complete a digital portfolio of their work. This course lasts for one trimester.

### **PERFORMING ENSEMBLE: STUDENTS CHOOSE ONE OF THESE CLASSES:**

#### ***1. CHORUS AND GENERAL MUSIC 6 (full year)***

This course is part of the sixth grade curriculum for students to sing in a chorus and continue with general music. In this class, students will study and perform music representative of a variety of musical styles and cultures through which they learn to control their rapidly changing adolescent voice in a safe and supportive environment. Public performances are important culminating experiences for this class. In addition, chorus/general music students spend substantial class time engaged in composition, drumming, notation study, and listening analysis. Students develop and use creative and critical thinking skills and cooperative learning techniques as they study all the elements of music in addition to performance. This course focuses specifically on skills outlined in the MA State Music Frameworks. This is a yearlong course.

#### ***2. BEGINNING BAND 6 (full year)***

This course is open to and designed for sixth grade students WITHOUT any prior playing experience on a brass, woodwind, or percussion instrument. Students will learn the fundamentals of their specific instruments, proper playing technique, and note reading. Students will participate in sixth grade concerts, a district-wide band performance, as well as other performance opportunities that arise. Band members are strongly encouraged to study their instrument privately, though it is not required. This course focuses specifically on skills outlined in the MA State Music Frameworks. Participation in public concert performances are a required component to this ensemble. At the end of this course, students will be ready to join Concert Band 7. This is a yearlong course.



### 3. ***CONCERT BAND 6 (full year)***

This course is open to sixth grade students with a minimum of one year playing experience on a brass, woodwind, or percussion instrument. Students continue to expand the fundamentals of musicianship and technical skill through the study of different styles of band literature. The concert band participates in sixth grade concerts, district-wide band performance, as well as other performance opportunities that arise. Band members are strongly encouraged to study their instrument privately, though it is not required. Band members may also audition for the Middle School Wind and Jazz Ensembles. This course focuses specifically on skills outlined in the MA State Music Frameworks. Participation in public concert performances are a required component to this ensemble. This is a yearlong course.

### 4. ***STRING ENSEMBLE 6 (full year)***

This course is open to sixth grade students who play violin, viola, cello, or string bass with a minimum of one year's playing experience or with permission of the instructor. String Ensemble 6 performs in all Middle School string concerts as well as the annual district-wide strings performance. Sixth grade string ensemble members may audition for the Town Orchestra. Interested students are strongly encouraged to study their instrument privately, though it is not required. This course focuses specifically on skills outlined in the MA State Music Frameworks. Participation in public concert performances are a required component to this ensemble. This is a yearlong course.

## **7th GRADE:**

### ***VISUAL ART 7 (trimester offering/ All students)***

This class is a required class for all seventh graders regardless of Fine and Performing Arts focus area selected (Performing Ensemble or Essential Rotation). Art 7 reviews and continues to develop skills learned in Art 6 and expands upon their understanding of visual art structures and functions. Students will complete units incorporating the elements and principles of art, techniques in drawing, color, and design (including observation, abstraction, and expression), craftsmanship, the creative process (brainstorming, problem-solving, analyzing, evaluating and presenting). This course lasts for one trimester.

**In addition to Art 7, students must choose the Essentials Rotation Track or a Performing Ensemble Track.**

### **7th GRADE ESSENTIALS ROTATION TRACK**

Students enrolled in the Essentials Rotation Track participate in a trimester rotation of visual and performing arts courses as listed below.



***CERAMICS/SCULPTURE 7 (trimester offering)***

This art class is part of the Fine and Performing Arts Grade 7 rotation. Students in this course will explore the 3D art process with a variety of materials, such as paper mache, clay, etc. Both functional and sculptural projects will be produced that demonstrate understanding of craftsmanship, while maintaining a workspace responsibly. This course focuses on 3D skills outlined in the MA State Visual Arts Frameworks. This course lasts for one trimester.

***MUSIC EXPLORATIONS 7 (trimester offering/ Rotation Students)***

This music trimester class is part of the Fine and Performing Arts 7 rotation. Students who are not enrolled in a performing ensemble (band, orchestra, chorus) are enrolled in the Arts Rotation. In this class, students will develop and expand their skills as composers and performers. They will listen to and analyze a variety of genres to develop their command and understanding of the fundamentals of music. Class projects will include using music technology software to compose both individual and group works. This course continues the development of skills outlined in the MA State Music Frameworks.

***MUSIC 7 (half - trimester offering)***

In this class, students will study and perform music representative of a variety of musical styles and cultures through which they learn to control their rapidly changing adolescent voice in a safe and supportive environment. In addition, Music 7 students spend class time engaged in composition, drumming, notation study, and listening analysis. Students develop and use creative and critical thinking skills and cooperative learning techniques as they study all the elements of music in addition to performance. This course focuses specifically on skills outlined in the MA State Music Frameworks. Students will perform as part of this course, but will not be required to participate in a formal public performance. This is a half-trimester course that is scheduled in tandem with Theater Arts.

***THEATER ARTS 7 (half - trimester offering)***

This is the performing arts class that is part of the Fine and Performing Arts Grade 7 Rotation. In this integrated performing arts class, students will expand upon and develop their theatrical skills by participating in a variety of roles used in professional and amateur productions. These roles include that of actor, director, and designer. Class activities may include rehearsal and performance of monologues and scenes, as well as script analysis and technical design. Students will perform as part of this course, but will not be required to participate in a formal public performance. This is a half-trimester course that is scheduled in tandem with Music 7.

**7th GRADE PERFORMING ENSEMBLES TRACK:**

Students receive one trimester of Art 7 and are enrolled in a yearlong performing ensemble (Chorus, Band, or Strings) of their choice.

**PERFORMING ENSEMBLE: STUDENTS CHOOSE ONE OF THESE CLASSES:**



### **1. CAMBIATA CHORUS 7 (full year)**

This course is appropriate for all seventh graders whose singing voice corresponds to a voice in the tenor or bass range and/or is anticipated to change into one of these voice ranges. Students in this class are able to focus on developing and fine tuning their changing adolescent singing voice in a supportive and comfortable environment. Students experience a variety of musical styles designed to give them a strong artistic choral experience, while developing healthy vocal techniques. Students also learn the important skills of ear training, sight singing, and dictation. In addition to the two major concerts each year, the chorus may also perform for functions in Needham and surrounding communities. Members of Cambiata Chorus 7 are encouraged to audition for the Middle School Select Choir. This course continues the development of skills outlined in the MA State Music Frameworks. Participation in public concert performances are a required component to this ensemble. This is a yearlong course. **Students enrolled in this course receive one Trimester of Art (Art 7).**

### **2. TREBLE CHORUS 7 (full year)**

This course is appropriate for all seventh graders whose singing voice corresponds to a voice in the soprano or alto range and is expected to sing in one of these voice ranges. Students experience a variety of musical styles designed to give chorus members a strong artistic choral experience, while developing healthy vocal techniques. Students also learn the important skills of ear training, sight singing, and dictation. In addition to the two major concerts each year, the chorus may also perform for functions in Needham and surrounding communities. Members of Treble Chorus 7 are encouraged to audition for the Middle School Select Choir. This course continues the development of skills outlined in the MA State Music Frameworks. Participation in public concert performances are a required component to this ensemble. This is a yearlong course. **Students enrolled in this course receive one Trimester of Art (Art 7).**

### **3. CONCERT BAND 7 (full year)**

This course is open to seventh grade students who enter seventh grade able to play brass, woodwind, or percussion instruments at a beginning/intermediate level. A minimum of one-year experience on the instrument, or permission of the instructor, is needed to enroll. Students learn the fundamentals of musicianship and technical skill through the study of different styles of band literature. The concert band participates in a variety of school and district-wide bands performances, as well as other performance opportunities that arise. Band members may audition for the Middle School Wind and Jazz Ensembles. Interested students are strongly encouraged to study their instrument privately, though it is not required. This course continues the development of skills outlined in the MA State Music Frameworks. Participation in public concert performances are a required component to this ensemble. This is a yearlong course. **Students enrolled in this course receive one Trimester of Art (Art 7).**

### **4. STRING ENSEMBLE 7 (full year)**

This course is open to seventh grade students who play violin, viola, cello, or string bass with a minimum of two year's experience on their instrument, or with permission of the instructor. String Ensemble 7 performs in all Middle School String concerts as well as the annual district-wide strings performance. Seventh grade String Ensemble members may audition for the



select Town Orchestra. Interested students are strongly encouraged to study their instrument privately, though it is not required. This course continues the development of skills outlined in the MA State Music Frameworks. Participation in public concert performances are a required component to this ensemble. This is a yearlong course. **Students enrolled in this course receive one Trimester of Art (Art 7)**

## **8th GRADE:**

### ***THE VISUAL ART 8 (trimester offering/ All students)***

This class is the required art class for all eighth graders regardless of **the Fine and Performing Arts focus area (Performing Ensemble or Essentials Rotation)**. Art 8 reviews and develops skills learned in the earlier grades and further expands students' understanding of visual art structures and functions. Students will complete units incorporating the elements and principles of art, techniques in drawing (including observation, abstraction, and expression), craftsmanship, and the creative process.

**In addition, students must choose the Essentials Rotation Track or a Performing Ensemble Track.**

### **8th ESSENTIALS ROTATION TRACK**

**Students enrolled in the Essential Rotation Track participate in a trimester rotation of visual and performing arts courses as listed below.**

#### ***CERAMICS/SCULPTURE 8 (half-trimester offering)***

This art class is part of the Fine and Performing Arts Grade 8 rotation. Students in this course will continue the exploration of the 3D art processes and materials (paper mache, clay, etc) used in Ceramics/Sculpture 7. Emphasis will be on producing 3D artwork that shows understanding of craftsmanship while maintaining a workspace responsibly. This course focuses on 3D skills outlined in the MA State Visual Arts Frameworks. This course lasts for half of one trimester.

#### ***2D DESIGN 8 (half-trimester offering)***

This art class is part of the Fine and Performing Arts Grade 8 rotation. 2D Design 8 expands on the visual art skills developed during Art 7 with an emphasis on using color and design to develop expressive **2D Design composition skills**. Students will also use color and craftsmanship to enhance the impact of their compositions. Some of the mediums used will be paint, pastels, colored pencils and markers. This course lasts for half of one trimester.

#### ***GLOBAL ARTS 8 (half-trimester offering)***

This art class is part of the Fine and Performing Arts Grade 8 rotation. Global Arts enable students to produce individual works in a variety of media. Students study how artists around the globe express their culture through art, and then interpret the culture's style and symbolism in their own works. In addition to reinforcing the skills of creating and producing expressive art



works; this course specifically brings focus to the standards relating to artistic meaning, critical response, and connection to different cultures. This course lasts for half of one trimester.

### ***THEATER ARTS 8 (half-trimester offering)***

This is the performing arts class that is part of the Fine and Performing Arts Grade 8 Rotation. In this integrated performing arts class, students will expand upon and develop their theatrical skills by participating in a variety of roles used in professional and amateur productions. These roles include that of actor, director, and designer. Class activities may include rehearsal and performance of monologues and scenes, as well as script analysis and technical design. This is a half-trimester course. Students will perform as part of this course, but will not be required to participate in a formal public performance.

### **8th GRADE PERFORMING ENSEMBLES TRACK:**

Students receive one trimester of Art 8 and are enrolled in a yearlong performing ensemble (Chorus, Band, or Strings) of their choice.

### **PERFORMING ENSEMBLE: STUDENTS CHOOSE ONE OF THESE CLASSES:**

#### ***1. CAMBIATA CHORUS 8 (full year)***

This is appropriate for all eighth graders whose singing voice corresponds to a voice in the tenor or bass range and/or is anticipated to change into one of these voice ranges. Students in this class continue to develop and fine-tune their changing adolescent singing voice in a supportive and comfortable environment. Students experience a variety of musical styles designed to give them a strong artistic choral experience, while developing healthy vocal techniques. Students also learn the important skills of ear training, sight singing, and dictation. In addition to at least one major concert each year, Cambiata Chorus 8 also spends time exploring techniques and concepts used in musical theater. Members of Cambiata Chorus 8 are encouraged to audition for Middle School Select Choir. This course continues the development of skills outlined in the MA State Music Frameworks. Participation in public concert performances are a required component to this ensemble. This is a yearlong course. Students enrolled in this course receive one Trimester of Art (Art 8).

#### ***2. TREBLE CHORUS 8 (full year)***

This course is appropriate for all eighth graders whose singing voice corresponds to a voice in the soprano or alto range and is expected to sing in one of these voice ranges. Students experience a variety of musical styles designed to give them a strong artistic choral experience, while developing healthy vocal techniques. Students also learn the important skills of ear training, sight singing, and dictation. In addition to the two major concerts each year, the chorus may also perform for functions in Needham and surrounding communities. Members of Treble Chorus 8 are encouraged to audition for the Middle School Select Choir. This course continues the development of skills outlined in the MA State Music Frameworks. Participation in public concert performances are a required component to this ensemble. This is a yearlong course. Students enrolled in this course receive one Trimester of Art (Art 8).



### **3. *CONCERT BAND 8 (full year)***

This course is open to eighth grade students who enter eighth grade able to play brass, woodwind, or percussion instruments at a beginning/intermediate level. A minimum of one-year experience on the instrument, or permission of the instructor, is needed to enroll. Students learn the fundamentals of musicianship and technical skill through the study of different styles of band literature. The concert band participates in a variety of school and district-wide bands performances, as well as other performance opportunities that arise. Band members may audition for the Middle School Wind and Jazz Ensembles. Interested students are strongly encouraged to study their instrument privately, though it is not required. This course continues the development of skills outlined in the MA State Music Frameworks. Participation in public concert performances are a required component to this ensemble. This is a yearlong course. **Students enrolled in this course receive one Trimester of Art (Art 8).**

### **4. *STRING ENSEMBLE 8 (full year)***

This course is open to eighth grade students who play violin, viola, cello, or string bass with a minimum of two year's experience on their instrument, or with permission of the instructor. String Ensemble 8 performs in all Middle School String concerts as well as the annual district-wide strings performance. Eighth grade String Ensemble members may audition for the select Town Orchestra. Interested students are strongly encouraged to study their instrument privately, though it is not required. This course continues the development of skills outlined in the MA State Music Frameworks. Participation in public concert performances are a required component to this ensemble. This is a yearlong course. **Students enrolled in this course receive one Trimester of Art (Art 8).**

## **CO-CURRICULAR FEE BASED SELECT PERFORMING GROUPS**

### ***MIDDLE SCHOOL SELECT CHOIR***

This performing group is composed of students selected by audition. Accepted students must be members of the sixth, seventh, or eighth grade curricular performing ensembles. Select Choir rehearses two afternoons per week at Pollard and members need to commit to attend both rehearsals to be admitted into the group with a successful audition. All Select Choir members need to commit to a minimum of two afternoons to be in the group. Some additional rehearsals may be added as the concerts approach. The Select Choir performs for professional and community organizations, and regional festivals. Interested students are strongly encouraged to consider studying voice privately, though it is not required. This is a fee based ensemble.

### ***JAZZ ENSEMBLE***

This performing group consists of students selected by audition from the sixth, seventh and eighth grade bands. Students study and perform multiple styles of jazz and popular music. The Jazz Ensemble performs at school events, and a variety of community and state events. Instrumentation includes saxophones, trumpets, trombones, drum set, guitar, bass, piano, and



other instruments at the discretion of the director. The Jazz Ensemble meets two afternoons a week at Pollard. All accepted students must be in Concert Band preferably, or one of the other daytime performing groups, if the student is skilled and dedicated enough to manage both ensembles. Interested students are strongly encouraged to be studying their instrument privately, though it is not required. This is a fee based ensemble.

### ***TOWN ORCHESTRA***

This performing group consists of string players from grades six through nine who are selected by audition. Accepted students must be members of the sixth, seventh or eighth grade string ensembles, or one of the daytime performing ensembles, if the student is skilled and dedicated enough to manage both ensembles. The Town Orchestra performs in numerous school concerts, in addition to community and regional events. Town Orchestra meets one afternoon per week at Pollard. Interested students are strongly encouraged to be studying their instrument privately, though it is not required. This is a fee based ensemble.

### ***WIND ENSEMBLE***

This performing group consists of wind and percussion players from grades six through eight who are selected by audition. Accepted students must be members of the sixth, seventh or eighth grade concert bands, or one of the other daytime performing ensembles, if the student is skilled and dedicated enough to manage both ensembles. The Wind Ensemble rehearses one afternoon per week at Pollard and performs at a variety of concerts each year, including participation in the state concert band festival (MICCA). Interested students are strongly encouraged to be studying their instrument privately, though it is not required. This is a fee based ensemble.

### ***MIDDLE SCHOOL MUSICALS***

This co-curricular experience involves students from the sixth, seventh, and eighth grades in producing a classic fully staged musical production. Students with acting/singing roles on stage are selected by audition. Other students have the opportunity to join the technical theater crew, working backstage on set, costumes, lighting, props, and more. The majority of rehearsals take place 3-5 days a week after school, with some weekend and evening dates as the performance dates get closer. The production process usually runs from early November through early February. All students grades six through eight are welcome to audition.

### ***MIDDLE SCHOOL PLAY***

This co-curricular theater experience involves students from the sixth, seventh, and eighth grades in producing a traditional play. Students with speaking roles will be selected and cast based on auditions. Other students have the opportunity to join the technical theater crew, working backstage on set, costumes, lighting, props, and more. The majority of rehearsals take place 3-5 days a week after school, with some weekend and evening dates as the performance dates get closer. The production process usually runs from late March through early June. All students grades six through eight are welcome to audition.



## **MATHEMATICS**

### ***MATH SUPPORT 6, 7, 8 (trimester offering)***

High Rock and Pollard offer small group math support to general education students who would benefit from additional mathematics instruction. Math Support Class provides students an opportunity for repeated practice, pre-teaching, re-teaching and/or explicit teaching of essential math concepts and skills. This additional math course allows students to address any areas of need and gain critical support on topics students are learning in their grade level math course. Groups are small, and instruction is targeted toward the unique individual needs of the student. Students are identified for Math Support using MCAS, in-class assessment data, and teacher recommendation.

### ***MATH 6 (full year)***

The Massachusetts Mathematics Curriculum Frameworks Incorporating the Common Core State Standards frame the major mathematical work in this course. It is aligned with the recommended pathway for grade 6 students as outlined in these mathematics standards.

The purpose of the MATH 6 course is to ensure that all students have been introduced to and have mastered the necessary prerequisite skills and essential knowledge to begin the transition to algebraic reasoning. This course will review and extend the students' mathematical knowledge and skill development. Students study the following topics: number theory, fractions, decimals, ratio and proportion, percents, geometry, integers, statistics, probability, and an introduction to variables and equations.

The Standards for Mathematical Practice complement the content standards so students increasingly engage with the subject matter as they grow in mathematical maturity and expertise throughout middle school. In addition, preparation for the Grade 6 MCAS will be provided. Calculators, iPads, and units integrated across the curriculum are used, when appropriate, to meet instructional goals.

### ***MATH 7 (full year)***

The Massachusetts Mathematics Curriculum Frameworks Incorporating the Common Core State Standards frame the major mathematical work in this course. It is aligned with the recommended pathway for grade 7 students as outlined in these mathematics standards.

The MATH 7 course is designed to develop basic arithmetic and pre-algebraic skills and concepts. Students will apply arithmetic and pre-algebraic skills to real-world situations involving ratios, proportions and percents; understanding and application of proportional reasoning is emphasized. Variables are used in working with patterns, formulas and graphing. Integer and rational number operations are introduced. Students simplify numerical expressions and evaluate variable expressions. Geometric relationships and spatial sense are developed by drawing, measuring and classifying geometric figures; real-world applications such as scale



drawings, area, surface area and volume frame the focus. Experiments and simulations help students determine probabilities, make predictions and inferences based on experimental and theoretical probabilities.

The Standards for Mathematical Practice complement the content standards so students increasingly engage with the subject matter as they grow in mathematical maturity and expertise throughout middle school. In addition, preparation for the Grade 7 MCAS will be provided. Calculators, iPads, and units integrated across the curriculum are used, when appropriate, to meet instructional goals.

### ***MATH 8 (full year)***

The Massachusetts Mathematics Curriculum Frameworks Incorporating the Common Core State Standards frame the major mathematical work in this course. It is aligned with the recommended pathway for grade 8 students as outlined in these mathematics standards.

This course focuses on formulating and reasoning about expressions and equations, using functions to describe quantitative relationships, analyzing two and three dimensional space and figures and understanding and applying the Pythagorean theorem. Students use linear equations and systems of linear equations to represent, analyze and solve a variety of problems. Understanding of distance and angles, translations, rotations, reflections and dilations, and ideas about congruence and similarity are used to describe and analyze two-dimensional figures and to solve problems. Students apply the Pythagorean theorem and complete their work on volume by solving problems involving cones, cylinders and spheres. Students will derive formulas, explain the advantages of different forms of equations, and apply these algebraic skills to a variety of real world applications and mathematical problems. Problem solving, communicating mathematical ideas, technological connections, and reading a textbook for understanding are stressed throughout the course.

The Standards for Mathematical Practice complement the content standards so students increasingly engage with the subject matter as they grow in mathematical maturity and expertise throughout middle school. In addition, preparation for the Grade 8 MCAS will be provided. Calculators, iPads, and units integrated across the curriculum are used, when appropriate, to meet instructional goals.

### ***DATA SCIENCE I (trimester offering)***

This course builds upon the mathematical and problem-solving skills taught in grade level classes, while encouraging students to reason with, interact with, and think critically about data in many forms. Students will actively engage in the exploration of the intersection of math with the real world and other school subjects while studying data sets that require organization and analysis. Throughout this course, students will be encouraged to develop rich questions, be curious, determine patterns through an exploratory approach, use evidence, and demonstrate strong reasoning. In addition, students will work with spreadsheets, studying measures of central tendency and manipulating data to “tell a story” using a data set. In the final weeks of the trimester, students will be required to complete a capstone project through which they will



explore personal meaning and relevance, conducting a data inquiry and exploring questions that are interesting to them and potentially supportive of the Needham community.

### ***DATA SCIENCE II (trimester offering for grade 8 only)***

This course builds upon mathematical and problem-solving skills taught in grade level classes and the Data Science I course. Students will continue and enhance their study of data by incorporating the statistical content and skills learned in their Math 7 courses and deepen their understanding of big data, spreadsheets, and “telling a story” using data sets. Students will extend their work with data sets requiring organization and analysis to linear regression and exploring confounding variables and their effects on data results. Throughout the trimester, students will develop their capstone project, including choosing a topic of their own, researching a statistical question, and conducting a data inquiry.

## **MEDIA & TECHNOLOGY**

### ***DIGITAL TECHNOLOGY 6 (trimester offering)***

In this class, using a variety of applications and platforms, students develop technology skills that they will be able to transfer to other academic areas. Students learn to access, use, and organize files and applications on multiple devices. Students will practice and apply skills in multimedia presentations, video editing, interactive games, and coding. Focusing on effective communications, they will author creative works in a variety of media, including video, animation, and podcasts. Students will build upon their knowledge of coding and will develop a simple interactive program. Students will expand their knowledge and understanding of digital citizenship and anti-cyberbullying, and will learn that what they do online can be permanent and can impact themselves and others, now and in the future.

### ***DIGITAL TECHNOLOGY 7 (trimester offering)***

In this class, students will improve their use of digital tools to collaborate, communicate, and create. Students will explore new technologies through project-based learning with an emphasis on developing independent problem solving skills and practicing concepts of the design process. Internet safety and anti-cyberbullying instruction continue to be a focus of the digital citizenship curriculum in this course. Students will develop 21<sup>st</sup> century skills transferable to other applications, devices, and a variety of academic areas.

## **SCIENCE**

The newly revised state science, technology and engineering (STE) standards, adopted in January 2016, provide guidance and flexibility during a district's development of new methods, content and skills. We have redesigned our curriculum accordingly, and are in the process of implementing the new standards with our students.



***SCIENCE 6 (full year)***

This is a general science course focusing on topics in the physical, life, and earth sciences. It includes the study of matter and its interactions, waves and communication, force interactions and motion in our universe, cellular and body systems, fossils as evidence of past events, and aspects of engineering design.

Laboratory activities are an integral part of the course. Emphasis is placed on the development of laboratory, writing, and study skills through an integrated learning approach. The Science & Engineering Practices (skills) and Crosscutting Concepts (themes) are emphasized throughout the course.

***SCIENCE 7 (full year)***

This is a general science course focusing on topics in the physical, life, and earth sciences. It includes the study of energy and heat concepts, ecology, electromagnetism, human impacts and interactions with the environment, and Earth's changing surface. These units of study are united through an overarching theme of systems and cycles.

Concepts are reinforced by multiple teaching strategies including teacher led instruction, hands-on activities, inquiry and student presentations. Considerable emphasis is placed on the development of problem solving, and science thinking skills, as well as student decision making based on specified and diverse case studies. The Science & Engineering Practices (skills) and Crosscutting Concepts (themes) are emphasized throughout the course, and students are often asked to consider the role that humans play in shaping and being impacted by their environment.

***SCIENCE 8 (full year)***

This course is an integrated program relating the important physical science, earth science, and engineering and technology concepts of our world. The principles of forces, motion, density, forms of energy, and chemistry are studied and related to concepts that describe the features and processes of the earth and its resources. The principles and processes of technology and engineering are also woven into the above scientific concepts. Teacher led instruction, hands-on activities, and inquiry based learning are an integral part of the course. Emphasis is placed on the development of communication, reading, writing, problem solving, inquiry, and laboratory skills. The Science & Engineering Practices (skills) and Crosscutting Concepts (themes) are emphasized throughout the course.

***ENGINEERING DESIGN 7 & 8 (trimester offering)***

This course is a hands-on (prototype based) course that applies engineering and technology principles to challenges based on systems and materials. The investigated technologies are in the fields of manufacturing, construction, transportation, communication, and environmental engineering. The course integrates science, engineering, and technology concepts and relates them to improving the environment and people's lives.

Problem solving and critical thinking skills are developed as students examine real-world applications of science and math. Classroom studies take place in a shop and laboratory



environment where practical safety procedures are emphasized during the learning. In **grade 7**, students apply the Engineering Design Process as they develop products, design or improve systems, and reflect on the interactions of products and systems. In **grade 8**, students look at materials and manufacturing. Within this framework, they develop an understanding of how we can sustainably support the wants and needs of a growing and evolving population.

## **SOCIAL STUDIES**

### ***SOCIAL STUDIES 6 (full year)***

This course begins with a study of archaeology and traces human development from prehistoric times through the ancient Middle East, ancient Egypt, the Greeks, and the Romans.

Grade 6 Social Studies introduces students to the cultural achievements of ancient and classical civilizations worldwide. The course begins with a study of archaeology and traces human development from prehistoric times through the ancient time period in the Near East, Eastern Africa, and Southern Europe. Students learn about civilizations in each region including Sumer, Babylonia, Assyria, Phoenicia, Israel, and Palestine in the Near East; Egypt and Nubia in Eastern Africa; and Greece and Rome in Southern Europe. The regional approach provides students with the opportunity to extend their knowledge of the physical world and expand their capacity for geographic reasoning.

Developing students' critical thinking skills around how we study history using primary and secondary sources to understand the past is a key component of the course. Special attention is paid to exposing students to a wide variety of sources, especially traditionally underrepresented voices, as students learn about each region. Additionally, through a variety of research projects, the course strengthens students' ability to develop research questions and conduct historical inquiries.

### ***SOCIAL STUDIES 7 (full year)***

Grade 7 Social Studies builds on the foundation set by Grade 6 Social Studies. Similar emphasis is placed on introducing students to the cultural achievements of ancient and classical civilizations worldwide. The course is also organized by geographic region as students continue to extend their knowledge of physical geography and expand their capacity for geographical reasoning. The regional approach challenges students to understand the movement of peoples and ideas across time and place. Students learn about the ancient history, indigenous peoples and cultural traditions of Australia and Oceania, South Asia, East Asia, the Middle East, and Central America, the Caribbean Islands, and South America.

This course broadens students' understanding and appreciation of diverse and indigenous people around the world while empowering students to be critical thinkers. It helps students to recognize the universal human conditions while providing opportunities to learn about the unique contributions of each region to world history. Special attention is paid to exposing students to a wide variety of sources, especially traditionally underrepresented voices, as students learn about each region.



Fostering students' religious literacy skills is a major component of the course. Students learn about the origins of various belief systems, and make connections between geography, theology, and culture. Additionally, through a variety of research projects, the course strengthens students' ability to develop research questions and conduct historical inquiries.

### ***SOCIAL STUDIES 8 (full year)***

Grade 8 Social Studies focuses on civics and early American history. The course introduces students to key ideas contained within the Declaration of Independence and the Constitution, their history, and their impact today. By focusing on the time period before, during, and after the American Revolution, students gain knowledge about how our government developed and its contemporary legacy.

The course provides opportunities for students to practice skills needed as citizens, such as how to express their ideas and respectfully participate in conversations with those of differing opinions. Special attention is paid to exposing students to a wide variety of sources, especially traditionally underrepresented voices, as they learn about American history. Other important civics concepts include how to get involved with one's community or government and the rights and responsibilities of citizenship.

Developing students' critical thinking and media literacy skills are major components of the course. The course challenges students to use evidence to develop persuasive arguments orally and in writing. Conducting inquiries through a variety of short and long-term research assignments helps students solidify skills taught in prior years and prepare for subsequent courses.

## **WELLNESS**

The Middle School wellness program is designed to influence healthy behaviors and provide students with the knowledge and skills necessary to make lifestyle decisions that will promote optimal health and well being throughout their entire lives. The program comprises Health Education, Physical Education, and Experiential Education. The curriculum in each of these disciplines emphasizes students' responsibility for their own health and well being and fosters the development of skills and knowledge that will help them to nurture and care for themselves in the social, emotional, physical, and intellectual areas of their lives.

### ***Notice to Parents about sex and sexuality education in grades 6, 7, and 8:***

A unit focusing on sex and sexuality education is included in the **grade 6** and in the **grade 8** health education programs as part of our comprehensive sexuality education program. Detailed information about the content of these courses can be viewed on the Needham Public Schools website:

[http://www.needham.k12.ma.us/departments/curriculum\\_and\\_academics/wellness/sexuality](http://www.needham.k12.ma.us/departments/curriculum_and_academics/wellness/sexuality)



In 7<sup>th</sup> grade, there will be **no formal sex education presented**. Issues of sexuality related themes will be included, however, within other health units. There is mention of how the use of alcohol can influence your decisions around sexual behavior, and how peers can pressure you to do things you really don't want to do. The issue of sexual harassment will be discussed during a presentation by Needham Youth Services. HIV/AIDS is discussed briefly within the context of a unit on diseases.

**Parent Engagement:** We believe that parents/guardians are their children's primary educators and that each family has its own values and beliefs about sex and sexuality. The units with sexuality related topics/themes are designed to include homework assignments that promote discussion between students and a parent/guardian or other trusted adult about topics that are being covered in class.

**Parent Notification:** Parents/guardians will receive a letter in the fall from the Superintendent's Office that will inform them that topics related to sex and sexuality will be included in their sons/daughters 6<sup>th</sup> grade and 8<sup>th</sup> grade health classes. Prior to the start of these curriculum units, an additional communication will be sent home by the school. Detailed information about our curriculum can be viewed online at

[http://www.needham.k12.ma.us/departments/curriculum\\_and\\_academics/wellness/sexuality](http://www.needham.k12.ma.us/departments/curriculum_and_academics/wellness/sexuality)

Under Massachusetts law, parents/guardians have the right to decide whether their child will participate in any single lesson or unit that includes information about human sexuality. If you want your child to be exempted from any lesson(s) that contain information about human sexuality, a note or letter to the building principal requesting that your child not participate in the sexuality portion of the health education curriculum is all that is needed. An appropriate alternative activity will be provided for students whose parent(s)/guardian(s) chooses to have them not participate.

### ***WELLNESS GRADE 6 (trimester offering)***

In Grade 6, health education and physical education are combined to make up our wellness program. Students are assigned to a wellness class and spend part of that time in physical activity and part of that time in the classroom devoted to the study of health education. Both disciplines contribute to each student's ongoing development of the skills, knowledge, and attitudes needed to participate in an active healthy lifestyle.

The ***physical education*** portion of the wellness course provides a natural opportunity for students from five different elementary schools to develop physical skills, get to know one another, make friends, and develop lasting relationships. Physical education provides students with an opportunity to interact with one another through their physical involvement in games, sports, dance, and other movement activities. A special emphasis is placed on improving physical fitness and creating positive social experiences. In sixth grade physical education classes, teachers modify traditional games to increase students' opportunities to apply skills learned in elementary school, practice new skills, and develop a better understanding of movement concepts and game strategies. In addition, students learn the fitness benefits of daily



physical activity and begin to understand how goal setting can help to improve personal fitness. Specific units for students in the sixth grade physical education classes include activities such as basic sports skill practice, basketball, creative games, fitness, invasion games, self-exploration, team handball, and volleyball. Students are expected to change into appropriate clothing for physical activity. This includes loose fitting shorts or sweatpants, T-shirts or sweatshirts, socks and sneakers.

The ***health education*** portion of the wellness course begins with an introduction to our wellness model and includes activities that help students make new friends and understand the qualities of healthy friendships. Conversely, students are taught how to identify characteristics of harmful friendships and resolve conflicts in their relationships. Students also study diet, food marketing, and nutrition fads as they relate to issues of healthy and unhealthy eating behaviors. They learn practical skills, such as how to choose healthy snacks and how to read food labels. They compare food products to learn how to make the best choice out of three different brands of the same food (e.g., name brand, store brand, organic brand).

A unit called Healthy Relationships is taught within health education and contains issues of sex and sexuality. This unit defines sex, sexuality and intimacy and teaches communication and decision-making skills to help support the healthy relationships and the new social expectations these students will encounter in middle school and beyond. Students will be given a homework assignment that promotes communication with a parent/guardian or other trusted adult about the topics and experiences covered in this unit. The specifics of this unit can be viewed on the Needham Public Schools website:  
[http://www.needham.k12.ma.us/departments/curriculum\\_and\\_academics/wellness/sexuality](http://www.needham.k12.ma.us/departments/curriculum_and_academics/wellness/sexuality)

### ***PHYSICAL EDUCATION 7 (trimester offering)***

The seventh grade physical education program recognizes the uniqueness of the middle school child and is designed to support students' healthy social development by emphasizing the qualities of cooperation, competition, and good sportsmanship. Through their active participation in games, sports, adventure activities, fitness, and dance, students develop physical skills and improve their individual fitness levels. Specific units for students in the seventh grade include basketball, circuit training, creative games, invasion games, paddle tennis, survivor challenge, team handball, volleyball, and weight training.

### ***HEALTH EDUCATION 7 (trimester offering)***

In seventh grade health classes, students are expected to be more reflective by exploring how their behaviors, and the behaviors of others, influence health and well-being. Students revisit the wellness hexagon, identify areas where their habits contribute positively to their overall well-being and target a few behavior changes for improvement (physically, socially, emotionally, spiritually, and intellectually). They explore the website *MyPlate.gov* to learn about the five major food groups and how to incorporate them into their meal planning. They learn to read food labels and carefully analyze some of their favorite foods. Students study the causes, signs and symptoms of communicable diseases and non-communicable diseases with a focus on



strategies for keeping the immune system healthy. They examine the spread of communicable diseases including direct contact (sexual contact, close touching, etc.), indirect contact (airborne, foodborne, waterborne, animal/vector – e.g. rabies transmitted by an animal bite or malaria transmitted by a mosquito bite) and explore prevention strategies.

Students learn ways to prevent and manage non-communicable diseases with emphasis on prevention. For example, they learn how to check their skin for melanoma and are given a homework assignment that requires them to teach a parent/guardian to do this life-saving skin check. Students study the physical, social, emotional and spiritual consequences of substance use (tobacco, electronic cigarettes (vaping), hookah, marijuana, and alcohol). They learn about the effects of smoking on the different systems of the body and the connection between tobacco and cancer. Students learn about the consequences of addiction and the dangers of other forms of smoking (electronic cigarettes, hookahs, marijuana). Students learn about the short and long-term effects of marijuana and discuss social and emotional consequences. They use a decision-making model and refusal skills to practice getting out of a situation in which they are being pressured to use marijuana.

Students learn about the dangers of using alcohol at an early age, calculate blood alcohol levels for different types of alcoholic drinks (beer, wine, hard liquor) and study the short and long-term effects of using alcohol (including the effects on the teenage brain). Students research current events to find a real-life consequence of binge drinking or heavy drinking. They share their article with the class and are asked to take the article home to discuss with a parent/guardian. Students also study mental health illnesses such as anxiety, depression and suicide prevention. They are taught how to recognize warning signs of a mental illness, ask for help, or respond as a bystander (S.O.S. training – Acknowledge, Care, Tell (ACT)). A unit called “risky behaviors” has been established to deal with current student issues, which fall into the categories of peer pressure, friendship/gossip, and social media safety. Although the skills taught in this unit remain consistent, the specific examples used within these units are fluid and designed to respond directly to current health and social issues within the Pollard community.

### ***PHYSICAL EDUCATION 8 (trimester offering)***

The eighth grade physical education program recognizes the unique role that eighth grade students play as leaders in the middle school community. Through the use of games, sports, adventure activities, fitness, and dance, students are encouraged to be active, improve their fitness levels, and model good sportsmanship. Health fitness assessments are conducted to help students assess their own cardiovascular health, abdominal strength and endurance, upper body strength and flexibility. Students are given the results of their individual tests and are encouraged to develop exercise practices that will help them to improve their scores. Specific units for students in the eighth grade include basketball, circuit training, creative games, invasion games, paddle tennis, survivor challenge, team handball, volleyball and weight training.

### ***HEALTH EDUCATION 8 (trimester offering)***

In eighth grade health classes students examine the causes and potential influence of body image, and eating disorders. Students explore gender stereotypes to see how culture can influence our



feelings about our bodies and the bodies of others. They are encouraged to identify the positive qualities and characteristics of themselves in an effort to improve self-esteem.

Students also explore mental health to better understand anxiety and depression. Students learn that it is just as important to seek help for a mental health concern as it is for a physical health concern. Students will continue to study the effects of alcohol and marijuana as well as other drugs (e.g. cocaine, heroin, prescription drugs) as a progression to the substance abuse prevention units.

They study the vocabulary of important drug terms (illicit drug, prescription drug, over the counter drug, synthetic drug, ingestion, inhalation, absorption, etc.). Students gain an understanding of how drugs affect the teenage brain and how repeat use can cause addiction. They explore marijuana, cocaine, heroin, (what does it look like, what type of drug is it, how is it used, how does it affect the body, and practice ways to say no to drugs (refusal skills). Members of the Students Advocating Life without Substance Abuse (SALSA) group at the high school speak to the advantages of living substance free and reiterate and practice the use of refusal skills. Lesbian, Gay, Bisexual, Transgender, and Questioning (LGBTQ) Identities as well as other terms relevant to sexuality are reviewed at the start of the sexuality education unit.

Students learn the structure and function of the male and female reproductive systems and examine the advantages (physically, socially, emotionally) of delaying sexual activity. Students examine the characteristics of healthy and unhealthy relationships. They learn about the pressures involved in being in a relationship and focus on skills to deal with the pressures that some may feel to make choices in order to please another person (this will include the pressure to participate in sexual behaviors). Students will discuss personal boundaries, practice assertive communication skills, and practice strategies for making good decisions that reflect their values and goals. They will also learn skills for resolving conflict in their relationships. Needham Youth Services will present a workshop about sex in the media called “Picture Perfect”.

### ***EXPERIENTIAL EDUCATION 7 (trimester offering)***

This course uses the Needham Public Schools social and emotional learning standards as guidelines for student outcomes. In this course, the teacher purposefully engages students in a variety of indoor and outdoor challenge activities to facilitate a process of participation, reflection, and growth. Participation in these activities provides an opportunity for students to practice skills for decision-making, communication, cooperation, conflict resolution, problem solving and developing a healthy relationship with self and others. Students will be given problems to solve that will require them to practice these skills and then participate in a process of reflection and discussions to encourage them to think about ways to apply these skills to their daily lives now, and in the future. At the core of this program, is the student’s need for a safe, risk-taking environment, which fosters appreciation of others and promotes individual contribution, commitment, and follow-through. Specific activities stress creating community, developing healthy interpersonal relationships, group problem solving, and building trust and empathy.



### ***EXPERIENTIAL EDUCATION 8 (trimester offering)***

This course uses the Needham Public Schools social and emotional learning standards as guidelines for student outcomes. The eighth grade experiential education course was developed, specifically, to address the high levels of stress students have reported in the MetroWest Adolescent Health Survey (MWAHS). Survey data suggests that stress has become a significant health factor in the lives of adolescents in Needham and beyond. According to the 2016 MWAHS, 38% of Needham High School students report life being “very stressful in the past 30 days.” Data shows that students report that stress steadily increases as they progress through high school (19.8% in the 9th grade - rising to 61.9% in 12th grade). Pollard Middle School students are also reporting that school issues, social issues, appearance issues, and family issues represent four areas of significant stress in their daily lives. Given that students will encounter life situations that are stressful, and that these encounters will become more frequent as they grow older, this course will teach eighth grade students a variety of different skills and strategies that they can use to help them cope with stress. This course will also teach strategies to recognize the difference between healthy stress and unhealthy stress and help students discover ways to monitor their own capacity for stress.

## **WORLD LANGUAGES**

### ***SPANISH 7A (full year)***

Spanish 7A is an introductory, novice level course designed for students who have not previously studied Spanish. Like Mandarin 7 and French 7, Spanish 7A is a two-year language commitment. Students who enroll in Spanish 7A continue to Spanish 8A. Thematic units of study include: greetings & cultural courtesies, likes & dislikes (sports, arts, extracurricular activities), weather, the calendar, family and pets, the house, food and ordering at a restaurant, and places around town. This course also introduces students to elements of Spanish culture (products, practices and perspectives).

### ***SPANISH 7 (full year)***

Spanish 7 is a continuation of Spanish 6 and is conducted primarily in Spanish. In Spanish 7, students' capacity to understand and be understood continues to grow, as does their knowledge of Spanish-speaking countries. Throughout the school year teachers intentionally review previously learned content to reinforce knowledge and skills acquired in Spanish 6. Thematic units of study include: describing oneself, family and pets, friends, and one's home.

### ***SPANISH 8 (full year)***

Spanish 8 is a continuation of Spanish 7 and is conducted primarily in Spanish. In Spanish 8, students broaden their use of previously learned vocabulary and continue to develop their communicative capacity in the novice range. In this course, students transition from the



production of short phrases (speaking and writing) to the creation of complete sentences and short paragraphs. Students' comprehension of conversations and short passages in the target language expands as does their capacity to ask and answer basic questions. Throughout the year, there is intentional spiraling of previously studied vocabulary and expressions to reinforce essential knowledge and skills. Thematic units of study include: community, clothes and shopping, food, and ordering at a restaurant.

Students who choose to continue with their Spanish studies at Needham High School will move on to "Spanish 2" in 9th grade and then "Spanish 3" in 10th grade.

### ***FRENCH 7 (full year)***

French 7 is designed for students who wish to learn French and who have not previously studied French. Like Mandarin 7 and Spanish 7, French 7 begins a two-year language commitment. Students who enroll in French 7 continue to French 8. French 7 offers an introduction to French language and culture at the novice level. Thematic units of study include: greetings & cultural courtesies, likes & dislikes (sports, arts, extracurricular activities), weather, the calendar, family and pets, the house, food and ordering at a restaurant, and places around town. This course also introduces students to elements of French culture (products, practices and perspectives).

### ***FRENCH 8 (full year)***

This course is a continuation of French 7. It is conducted primarily in French. In French 8, students broaden their use of previously learned vocabulary and continue to develop their communicative capacity in the novice range. In this course, students' capacity to ask and answer basic questions expands as does their comprehension of conversations and short passages in the target language. Students transition from the spoken and written production of short phrases in the target language to the creation of complete sentences and short paragraphs. Throughout the year, there is intentional spiraling of previously studied vocabulary and expressions to reinforce essential knowledge and skills. Thematic units of study include: community, shopping (for food and clothing), film study (*les Choristes*), study of literature (*Fama va en Californie*), descriptive language (people, places, things), and leisure activities.

Students who choose to continue with their French studies at Needham High School will move on to "French 2" in 9th grade and "French 3" in 10th grade.

### ***MANDARIN 7 (full year)***

Mandarin 7 is designed for students who wish to learn Mandarin and who have not previously studied Mandarin. Like French 7 and Spanish 7, Mandarin 7 begins a two year language commitment. Students who enroll in Mandarin 7 continue to Mandarin 8.

Mandarin 7 offers an introduction to the pronunciation and intonation of Mandarin as well as the development of novice level speaking, listening, reading and writing skills. Thematic units of study include: Greetings, numbers, the calendar, age, polite expressions, and classroom objects. This course also introduces students to elements of Chinese culture (products, practices and perspectives).



***MANDARIN 8 (full year)***

Mandarin 8 is a continuation of Mandarin 7. In Mandarin 8, students broaden their use of previously learned vocabulary and continue to develop their communicative capacity in the novice range. Thematic units of study include: Family, animals, sports and leisure activities, physical descriptions, and food. This course also introduces students to elements of Chinese culture (products, practices and perspectives). Students who choose to continue with their Mandarin studies at Needham High School will move on to “Mandarin 2” in 9th grade and “Mandarin 3” in 10th grade.

***INTRODUCTION TO CHINESE LANGUAGE & CULTURE 8 (trimester offering)***

This trimester course is part of the Performing Arts rotation in grade 8. It is an option provided to students who do not select band, strings, or chorus. This course is designed to enable students to gain some exposure to the extensive and profound Chinese civilization. It will introduce students to various Chinese cultural forms, including fine arts, language, festivals, and cuisine, as well as give students a glimpse of both ancient and modern Chinese life. The course will include hands-on projects, arts and crafts, a taste of Chinese food, and simple conversations in Mandarin.





# 2022 - 2023 | Program of Studies



A Caring Community Striving for Personal Growth and Academic Excellence  
Needham High School • Needham, Massachusetts



# NOTICE OF NON-DISCRIMINATION

Every person shall have a right to attend the public schools of the town where s/he actually resides. No person shall be excluded from or discriminated against in admission to the Needham Public Schools or in obtaining the advantages, privileges and courses of study of the Needham Public School on account of race, color, sex, gender identity, religion, national origin, sexual orientation, disability, homelessness, or limited English-speaking ability.

The following person has been designated to handle inquiries regarding the school district's non-discrimination policy:

**Name and Title:** Tom Denton, Director of Guidance

Address: 609 Webster Street, Needham, MA 02492

Telephone No: 781-455-0800 x 22130

TTY: 781-455-0434

FAX: 781-449-5111

## SCHOOL COMMITTEE

Connie Barr, Chair

Matthew Spengler, Vice Chair

Andrea Longo Carter

Michael Greis

Elizabeth Lee

Micheal E. O'Brien

Aaron Pressman

## ADMINISTRATIVE STAFF

Dr. Daniel Gutekanst, Superintendent

Dr. Alexandra McNeil, Assistant Superintendent for Human Resources

Ms. Mary Lammi, Assistant Superintendent Student Support Services

Dr. Terry Duggan, Assistant Superintendent for Student Learning

Ms. Anne Gulati, Assistant Superintendent for Finance and Operations



# Table of Contents

<a href="#">Introduction</a> .....	3
<a href="#">Core Values, Beliefs, and Learning Expectations</a> .....	4
<a href="#">Diploma Requirements</a> .....	6
<a href="#">Course Level Descriptions</a> .....	6
<a href="#">Course Change Procedures and Add/Drop Policy</a> .....	8
<a href="#">Summer School</a> .....	9
<a href="#">Remedial and Make-up Courses</a> .....	9
<a href="#">Enrichment Programs</a> .....	10
<a href="#">Course Offerings</a> .....	11
<a href="#">English</a> .....	12
<a href="#">English Language Learners</a> .....	17
<a href="#">Fine and Performing Arts</a> .....	19
• <a href="#">Visual Art Courses</a> .....	19
• <a href="#">Performing Art Courses</a> .....	29
<a href="#">Mathematics</a> .....	38
<a href="#">Media</a> .....	50
<a href="#">Science</a> .....	54
<a href="#">History and Social Sciences</a> .....	62
<a href="#">Wellness (Health / Physical Education)</a> .....	68
<a href="#">World Languages</a> .....	75
<a href="#">Other Elective Offerings</a> .....	83
<a href="#">Student Support Services</a> .....	85
<a href="#">Guidance Department Services</a> .....	87



# INTRODUCTION

The Needham High School Program of Studies is a reflection of our Core Value that Needham High School is a Caring Community Striving for Personal Growth and Academic Excellence. The Program of Studies provides essential information including course offerings, descriptions, and diploma requirements for all Needham High students. The program is designed to guide the course selection process and should be consulted whenever academic information is needed.

There are three time periods in a student's day that are not reflected in the Program of Studies since they are not credit bearing and do not appear on transcripts, yet are important parts of the NHS experience. Our **X-block** is a designated time in our schedule for academic support from teachers. Students are highly encouraged to meet with teachers for additional help, especially in any classes where they may be struggling in any way. Our **9th Grade Seminar** is a class that our first-year students take part in during their first semester and provides a chance for some foundational skills and supports to be provided as they transition into the high school setting, without interfering with academic classes. Students have the opportunity to complete academic work when not engaged in any of the activities or modules. Finally, our **Directed Study** is an opportunity for 10th - 12th grade students to complete independent work, assignments, and requirements in a self-directed manner in the library or other study spaces throughout the building and campus. Directed study time is also an opportunity for students to meet with their counselor, check in with an available teacher or staff member, and provides time for school-related programs and activities.

The leaders of each of the departments and the school counselors are available to answer any questions regarding the Program of Studies. Students and parents need to select courses carefully. The staffing at Needham High School is based on the courses students select in February/March of the preceding year. It is important to note that it is highly unlikely that course change requests will be honored once the school year has begun. Therefore, parents and students should seek the advice of teachers, department directors/chairs, and counselors in preparing an academic program for next year. Students and parents new to Needham will meet with a counselor before selecting courses. Final responsibility for course selection decisions rests with students and their parents. Students should elect the equivalent of seven full periods of instruction each semester including monitored study time. Final course offerings will be based on enrollment, budgetary considerations, and the impact on the required curriculum. Thank you for your attention to this very important process. I wish you all the best for a successful 2022- 2023 school year.

Aaron Sicotte  
Principal



# CORE VALUES, BELIEFS, & LEARNING EXPECTATIONS

Needham High School is a caring Community Striving for Personal Growth and Academic Excellence.

Needham High School draws from the strengths of the community to create partnerships between faculty, parents, and students, both on an individual level and in groups, in order to provide a high quality education. Teaching and learning are central to our mission, as is integrity.

The school offers students a variety of opportunities to excel and a diversity of perspectives from which to learn in an environment that is both nurturing and challenging.

The balanced student is able to participate actively in school and society, be creative, and self-advocate while determining their unique path to fulfillment.

At Needham High School, we believe meaningful critical inquiry empowers all students to collaboratively navigate challenging ideas and topics, embrace a variety of experiences, identities and viewpoints, and connect authentically with the world they inhabit and for which they share responsibility. We are dedicated to establishing and maintaining communities throughout the school that are safe, inclusive and supportive academic and interpersonal spaces, where students can explore nuanced curricula, safely pilot their ideas and perceive disagreement as an opportunity to learn.

## TEACHING & LEARNING FRAMEWORKS

In conjunction with our school-wide learning expectations (e.g., Communication; Research; Analysis; Personal Responsibility; Civic Responsibility) and our Portrait of a Needham Graduate Core Competencies (e.g., “Preparing all Needham Public School Students to be...Creative Thinkers and Problem Solvers; Communicators and Collaborators; Knowledgeable; Responsible and Resilient; Socially and Culturally Competent”), student achievement and growth will be measured in the following domains:

**Skill Enrichment** -We embrace a growth mindset in our work to empower all Needham High School students to write effectively; research effectively; read critically for comprehension; solve complex problems; think critically; demonstrate non-written communication skills; demonstrate effective organizational skills; and monitor and direct their learning using various feedback sources. We believe that academic skills and social-emotional wellness are the foundation for students’ social and civic inquiry and outreach.

**Positive & Proactive Digital Citizenship** – We believe in a thorough source analysis, through which students consider the reliability, bias, and transparency of materials that supplement their exploration of core course texts, resources, and artifacts. Teaching students to be discerning consumers of online information is an essential skill, and our instruction empowers the discovery of trustworthy content, responsible online sharing practices, and negotiation of online communication.

**Equitable Inquiry** – We believe in engaging students in challenging critical inquiry as a means to achieve more equitable classroom, local, and national communities. This is most effectively accomplished through rigorous



discourse exploring the role of history, power and privilege through lenses (i.e., race, ethnicity, faith, class, power, culture, gender, gender identity, sexual orientation, ability) that inform students' understanding of core content as well as their own evolving views, values, and identity.

**Civic Expectations & Student Voice** – Through student-centered, collaborative and personally relevant inquiry, students will develop individual and collective voice, heightened self-confidence, agency and purpose. We aspire to increase students' capacity to participate in dialogue across differences and - through authentic engagement and reflection - consider the perspectives of those whose experience and position in the world differ from their own. As students increasingly understand and define their own civic disposition, they will also expand their awareness of others' fundamental needs and rights. Lastly, students will be encouraged and empowered to take thoughtful action, make informed choices and work together on projects that promote a public good beyond the classroom, forging reciprocal connection with the large communities of which they are a part.



## DIPLOMA REQUIREMENTS

A. To be eligible for a diploma from Needham High School, a person must complete these standards prescribed by the Needham School Committee:

1. Successfully complete courses in this Program of Studies described as follows:
  - a. Four full years of English
  - b. Three full years of Mathematics
  - c. Three full years of History and Social Sciences including one year of United States History
  - d. Three full years of Science
  - e. Two full years of the same World Language
  - f. Two full years of Fine & Performing Arts; a maximum of one semester of Media/Technology may be substituted
  - g. One semester of Health/Physical Education for each year enrolled at Needham High School
  - h. Two credits in Community Service Learning
2. Successfully complete the equivalent of an additional five full year courses or its equivalent as described in the Program of Studies.
3. Earn a minimum total of ninety-two credits in the course of study outlined above or in credits earned with the prior written approval of the Principal.
4. Complete all state-mandated requirements.

B. The Principal may suitably recognize students who have completed all Needham High School requirements but not the state mandated diploma requirements.

C. Students may complete these requirements in less than four years upon prior written application and the approval of the High School Principal.

D. The Principal may make changes in requirements when, in his/her opinion, the best interest of the student will be served.

**All 9th grade students must take a minimum of 24 credits and a maximum of 26 (\*\* the 26 credit max may only be exceeded if a student requests Skills Center, PLC, or an after school class); Grade 10 and 11 students must take at least 24 credits with a maximum of 28; and seniors must have a minimum of 22 credits and a maximum of 28 (\*\* For grades 10, 11, and 12, the 28 credit maximum may be exceeded if a student selects an after school course in addition to the full schedule).**

## COURSE LEVEL DESCRIPTIONS

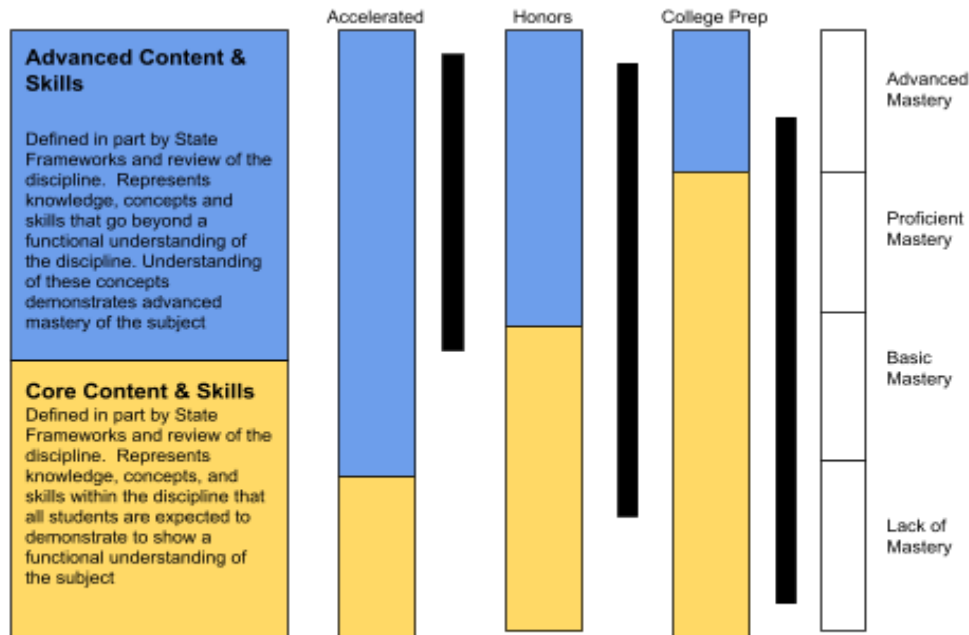
Needham High School offers courses at the College Prep, Honors, and Accelerated levels. Prior to course selection each year, teachers will recommend students for courses at these levels based upon the descriptions provided below. All courses are rigorous, address the Massachusetts State Frameworks, and are designed to appropriately challenge all students. Students and families are encouraged to consider balancing their academic interests, co curricular activities, and other commitments when reviewing teacher course recommendations for the upcoming year.



**College Prep** - Students who are recommended for courses at this level will develop and build on a strong foundation of content and skills. Courses are rigorous, and require consistent effort and work for students to achieve at the highest level. Class time will be spent on mastery of core content and skills with some exposure to advanced content and skills. Students are expected to synthesize and analyze content with active teacher-directed support. Outside coursework is designed to reinforce the content and skills learned in class. Students will develop the organization needed to balance both short-term and long-term assignments throughout these courses.

**Honors** - Students who are recommended for courses at this level will further their strong foundation of content and skills. These courses are fast paced, rigorous, and require consistent effort and work for students to achieve at the highest level. In addition to developing core content and skills, class time will be spent working on advanced content and skills. Students are expected to synthesize and analyze content with teacher-directed support. Outside coursework is designed to advance the curriculum and provide skill development. Students should possess the strong organizational skills needed to balance both short-term and long-term assignments throughout the course.

**Accelerated** - Students who are recommended for courses at this level will build upon a strong foundation of content and skills. These classes will spend a significant amount of time working with advanced concepts and skills at an accelerated pace. Students are expected to synthesize and analyze content independently with limited teacher-directed support. Outside coursework is designed to advance the curriculum and provide skill development. Students will need to balance both short-term and long-term assignments throughout the course.



The black bars represent areas where teacher-directed support is provided. For example, in the Accelerated level, students are expected to develop understanding of the core content largely independently, with little active teacher-directed support and monitoring. In the Honors level, active teachers-directed support and monitoring is provided for all but the basic components of the core content (many of which will have been learned previously by the student). In the College Preparatory level, active teacher-directed support and monitoring will be provided for all aspects of the core and advanced curriculum.



# **COURSE CHANGE PROCEDURES & ADD/DROP POLICY**

## **PHILOSOPHY BEHIND THE ADD/DROP POLICY**

At Needham High School we encourage all students to make thoughtful decisions in selecting courses, to challenge themselves appropriately, to persevere and develop resilience when presented with growth opportunities, and to balance their academic responsibilities with their extra-curricular activities and life outside of school.

The partnership between students, families and teachers begins with the course selection process. Students and families are expected to very carefully choose courses for the following year. The high school follows a specific procedure at course selection time that requires input from teachers and students and encourages input from families. Students and families with questions at that time should consult teachers, counselors and other staff to assist in making appropriate choices regarding courses. Student course selection is the first step in crafting the high school master schedule, a process that takes months, and creating course sections based on student enrollment.

## **COURSE CHANGE PROCEDURE**

There can be times when, despite everyone's best efforts, a particular course placement may not meet the student's needs. In those cases a student's options are:

- drop the course;
- drop the course and replace it with a different course;
- or change the level (College Prep, honors or accelerated) of the course.

These course changes can be characterized as either 'add/drop' or 'level change'. In both cases there is a specific process and timeline to be followed. Students should see their school counselor to initiate a course change request. All course changes require the approval of the appropriate Department Chair/Director, who must balance the needs of an individual student with the needs of all students impacted by the proposed change.

## **ADD/DROP**

A student may request to drop a course at any time during the school year. If a student drops a course after one complete quarter, the course will be represented on the permanent high school transcript with a grade of 'W'. There is no guarantee that if a student drops a course there will be room for the student in another course. Most often the only option for a student's schedule is a study hall. A student should be cautious when dropping a course that they are still carrying the required minimum number of credits for the school year and that they are still on track to fulfill all the graduation requirements.

A student who wishes to add a course must make that request by the end of the first two instructional cycles of the class. No student will be allowed to enter a new course after that time unless there are extenuating circumstances.

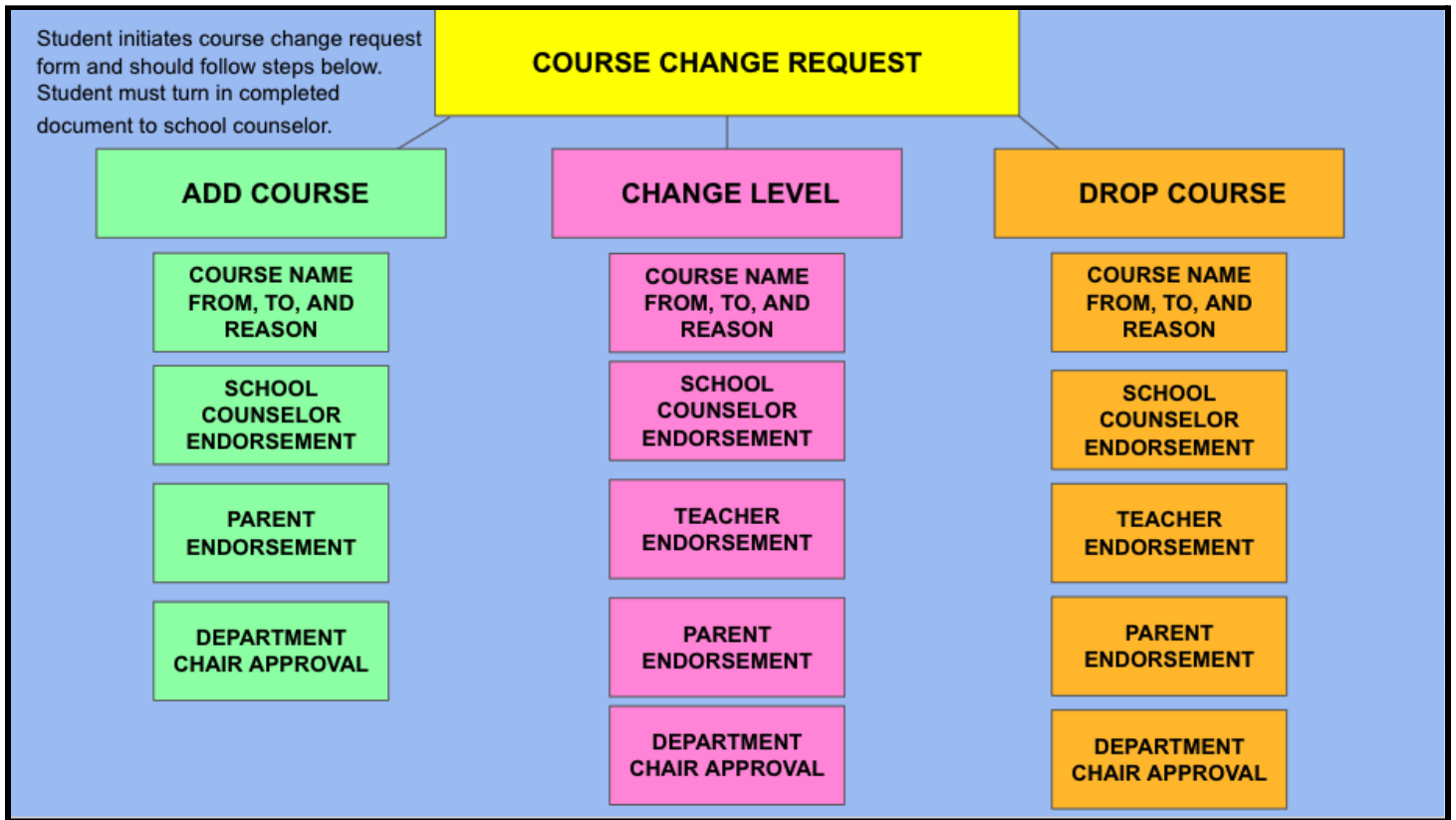
## **LEVEL CHANGES**

A student may request to change the level of a course up until the end of Term 1. Level changes after that time will be considered only under extenuating circumstances.

Transfer of grade: If a level change takes place before the final two weeks of Term 1, the teachers of the two courses will consult with each other in conjunction with the department chair regarding the student's term grade. If a student requests a level change within the final two weeks of the end of Term 1, the student's grade for Term 1 will stand and the student will begin the new class on the first day of term 2.



## COURSE CHANGE FLOW CHART



## SUMMER SCHOOL

All summer school work must be approved IN ADVANCE by the principal or director/chairperson of the department. A form for this purpose is available in all department offices.

Credit received in summer school does not automatically entitle the student to elect the next higher course in a sequence. No more than three courses repeated in summer school and/or by tutoring will be allowed for credit toward a diploma. Only one course in a sequential subject may be made up in summer school or by tutoring. Additional credits will not be granted for a repeated course. The director must approve remedial courses prior to registration.

In any case, the original grade recorded by a Needham High School teacher is not to be changed as a result of summer study. The grade received from summer school will be recorded on the permanent record card in addition to the original grade.

## REMEDIAL AND MAKE-UP COURSES

1. The student who does not complete a course satisfactorily and receives an F grade (of at least a 50) may:
  - A. Receive credit for the subject by repeating the course successfully in an accredited summer school.
  - B. Repeat the subject as an additional course and attain a satisfactory grade.
  - C. A student who fails English must make up the course in an approved summer school or repeat the course the following year. Two years of English cannot be taken simultaneously in grades 9 and 10.
2. The student who does not attain a necessary prerequisite grade for continuation in a sequential course may:
  - A. Repeat the course in an accredited summer school.
  - B. If no accredited summer school is available, have tutoring approved by the appropriate



director/chairperson. Tutoring must be taken at the rate of one hour a day for a minimum of thirty days. The student must then pass a qualifying examination if appropriate.

C. Repeat the course and obtain a qualifying grade.

## **ENRICHMENT PROGRAMS**

Needham High School encourages students to participate in enrichment programs. There are programs offered in the Needham Summer School, through the TEC collaborative, and in various public and private schools. Participation in such programs may be recorded on your official transcript, may be awarded credit, and may fulfill core requirements. Students must receive prior approval from the Principal for enrichment courses to be recorded on the transcript and to receive credit.



## COURSE OFFERINGS

The Program of Studies booklet is divided by departments.

<a href="#">English</a>	<a href="#">Media</a>	<a href="#">Wellness</a>
<a href="#">English Language Learner</a>	<a href="#">Mathematics</a>	<a href="#">World Languages</a>
<a href="#">Fine and Performing Arts</a>	<a href="#">Science</a>	<a href="#">Other Elective Offerings</a>
<a href="#">Performing Arts</a>	<a href="#">History and Social Sciences</a>	

Course descriptions are written by department chairs and directors and are approved by the Needham School Committee.

### COURSE NUMBERS

The first digit defines the department.

The second and third digits are for scheduling purposes.

The fourth digit of the course number indicates the level of difficulty.

1=AP or Acc; 2=Honors; 3=College Preparatory

0, 5, 6, 7, 8, 9 are unlevleled or independent study.

### LENGTH/CREDIT

F/4 = A full year course meeting every scheduled block earning four credits

F/2 = A full year course meeting only half the scheduled blocks earning two credits

S/2 = A one semester course meeting every scheduled block earning two credits

/4 or /2 = Course not regularly scheduled earning four or two credits



A yellow star indicates a new course offering for 2022-2023.



## ENGLISH

Num	Length	Credit	Course	Num	Length	Credit	Course
0101	F	4	English 9 Acc	0548	S	2	Journalism 1 - <i>The Hilltopper</i> 2 credit
0102	F	4	English 9 Hon	0632	F	4	Braver Newer World Hon
0112	F	4	English 9IP	0301	F	4	English 11 Acc
0103	F	4	English 9 CP	0302	F	4	English 11 Hon
0201	F	4	English 10 Acc	0303	F	4	English 11 CP
0202	F	4	English 10 Hon	0421	F	4	AP Literature & Composition
0203	F	4	English 10 CP	0431	F	4	English 12 Acc
0212	F	4	★ English 10IP	0432	F	4	English 12 Hon
0311	F	4	AP Language & Composition	0433	F	4	English 12 CP
0631	F	4	Braver Newer World Acc	0491	F	4	Greater Boston Project Acc
0510	S	2	Public Speaking	0520	S	2	Experimental Writing
0530	S	2	Film Studies	0547	F	4	Journalism 1 - <i>The Hilltopper</i>

The goal of the English curriculum is to strengthen critical communication skills and to encourage an appreciation of literature. Accelerated and Advanced Placement courses are designed for students who demand especially challenging academic experiences and who are comfortable working independently with advanced materials. Although the course essentials at each grade are consistent, the pace and depth are different at each level. Nightly reading and writing assignments are progressively defined according to grade level and depend upon the complexity of a given text and corresponding class assignments.

### ENGLISH 9

0101; 0102; 0103

(4 credits)

Full Year

Grade 9

Ninth grade English includes the study of literary forms in conjunction with the development of foundational language arts skills. Students examine characteristics and critical elements of Fiction, Poetry, Nonfiction, Memoir, and Drama. Students will develop and refine organization and clarity of expression in critical writing and personal essays, practice effective speaking and listening skills and study vocabulary, usage and writing mechanics. All ninth grade students will complete a comprehensive research assignment, the Grade 9 Research Paper.



Representative texts include Harper Lee’s *To Kill a Mockingbird*, Marjane Satrapi’s *Persepolis*, John Steinbeck’s *Of Mice and Men*, James McBride’s *The Color of Water*, George Orwell’s *Animal Farm*, Lorraine Hansberry’s *A Raisin in the Sun*, William Shakespeare’s *Romeo and Juliet*, Sue Monk Kidd’s *The Secret Life of Bees*, Elie Wiesel’s *Night*, Mark Haddon’s *The Curious Incident of the Dog in the Night-Time*, Wes Moore’s *The Other Wes Moore*, and a collection of core poems.

Students enrolling in 9 Accelerated should be prepared for nightly reading assignments of approximately 30-35 pages; in 9 Honors 20-25 pages; in 9 College Prep 10-15 pages. Similarly, writing amounts vary by level.

---

## ENGLISH 9IP

0122 (4 credits)

Full Year

Grade 9

---

**Students who choose this course must also sign up for Math 9IP, Biology 9IP, and World History 9IP.**

Ninth grade English includes the study of literary forms in conjunction with the development of foundational language arts skills. Students examine characteristics and critical elements of Fiction, Poetry, Nonfiction, and Drama. This course draws explicit connections to the other 9IP subjects using a project-based learning approach to the interdisciplinary themes of Observations and Patterns, Systems, Power and Influence, Disease; and Revolutions. Students will develop and refine organization and clarity of expression in critical writing and personal essays, practice effective speaking and listening skills and study vocabulary, usage and writing mechanics. Students will also complete a comprehensive research assignment, the Grade 9 Research Paper, which will be connected to at least one other 9IP subject. Representative texts include Mark Haddon’s *The Curious Incident of the Dog in the Night-Time*, Harper Lee’s *To Kill a Mockingbird*, George Orwell’s *Animal Farm*, Marjane Satrapi’s *Persepolis*, Elie Wiesel’s *Night* and a collection of core poems. Students enrolling in English 9IP should be prepared for nightly reading assignments of 20-25 pages, which is the established amount for the honors level.

---

## ENGLISH 10

0201; 0202; 0203 (4 credits)

Full Year

Grade 10

---

Tenth grade English offers a detailed examination of archetypes within the literary genres of Romance, Tragedy, Comedy and Satire & Irony. Students continue to explore a variety of literary forms and develop and refine their understanding of critical writing, with particular focus on conventions, organization, analysis, interpretation and style. Additionally, students learn and practice skills emphasized in the Massachusetts State Frameworks and the Common Core Curriculum, particularly those assessed by standardized tests. All tenth grade students will complete a comprehensive research project, the Sophomore Oral Presentation. Representative Texts include J.D. Salinger’s *The Catcher in the Rye*, Sherman Alexie’s *The Absolutely True Diary of a Part-Time Indian*, William Shakespeare’s *Macbeth*, Laurie Halse Anderson’s *Speak*, Maya Angelou’s *I Know Why the Caged Bird Sings*, Benh Zeitlin’s *Beasts of the Southern Wild* (film), Jesmyn Ward’s *Sing, Unburied, Sing*, Ken Kesey’s *One Flew Over the Cuckoo’s Nest*, Barbara Kingsolver’s *The Bean Trees*, George Orwell’s *1984* and Sophocles’ *Oedipus the King*. Students enrolling in 10 Accelerated should be prepared for nightly reading assignments of approximately 35-40 pages; in 10 Honors 25-30 pages; in 9 College Prep 15-20 pages. Similarly, writing amounts vary by level.



Students who choose this course must also sign up for Math 10IP, Physics 10IP, and World and America 10IP. Tenth grade English offers a detailed examination of archetypes within the literary genres of Romance, Tragedy, Comedy and Satire & Irony. Students continue to explore a variety of literary forms and develop and refine their understanding of critical writing, with particular focus on conventions, organization, analysis, interpretation and style. This course draws explicit connections to the other 10IP subjects using a project-based learning approach to the interdisciplinary themes including Making an Argument, Relationships & Change, and Force, with a focus on skills around presentations and communication. Students will develop and refine organization and clarity of expression in critical writing and personal essays, practice effective speaking and listening skills and study vocabulary, usage and writing mechanics. Students will also complete a comprehensive research project, the Sophomore Oral Presentation which will be connected to at least one other 10IP subject. Representative texts include William Shakespeare's *Macbeth*, *Boxers* by Gene Luen Yang, *The Girl Who Smiled Beads* by Clemantine Wamariya and Elizabeth Weil, *1984* by George Orwell, and other common grade 10 texts. Students enrolling in English 10IP should be prepared for nightly reading assignments of 20-25 pages, which is the established amount for the honors level.

---

**AP LANGUAGE & COMPOSITION**

0311 (4 credits)

Full Year

Grade 11

---

AP Language and Composition focuses on techniques of persuasion and formal rhetoric. The bulk of the curriculum is American non-fiction. The four main units are as follows: Unit 1: Introduction to Rhetoric; Unit 2: Freedom (The Democratic Ideal); Unit 3: Equity (Social Justice); Unit 4: Opportunity (The American Dream). AP Language explores these ideas through a variety of texts and media and prepares students to enter into historical and contemporary conversations about matters of great importance to America. Texts include fiction, historical and contemporary essays, speeches, advertisements, biographies, studies, reports, films, cartoons, TED talks, poetry, etc.. Students write for a variety of purposes, audiences, and occasions, and write in a variety of forms including personal narrative, rhetorical analysis, online discussion, and persuasive argument. All students will complete a comprehensive, issue-based research paper that explores a self-selected topic from multiple points of view and synthesizes a range of sources. Students conduct a comprehensive review of usage, grammar and compositional mechanics. The course prepares students to take the AP Language exam offered by the CEEB.

---

**ENGLISH 11**

0301; 0302; 0303

(4 credits)

Full Year

Grade 11

---

Eleventh grade English offers a detailed examination of American literature and thought, focusing on the ways in which the various literary movements have shaped the idea of America. Students will think critically about how American Literature constructs and reflects shifting beliefs about religion, government, race, gender, morality, beauty and truth itself. In addition to developing critical insight into the works of major American writers and an awareness of the historical context of these writings, students identify and analyze how literary elements enhance meaning and review/refine usage, grammar and mechanics. All eleventh grade students must complete



a comprehensive research project, the Junior Research Paper. Representative texts include Arthur Miller’s *The Crucible*, Nathaniel Hawthorne’s *The Scarlet Letter*, essays by Henry David Thoreau and Ralph Waldo Emerson, Charlotte Perkins Gilman’s “The Yellow Wallpaper,” *The Narrative Life of Frederick Douglass*, Zora Neale Hurston’s *Their Eyes Were Watching God*, Mark Twain’s *The Adventures of Huckleberry Finn*, August Wilson’s *Fences*, F. Scott Fitzgerald’s *The Great Gatsby*, Arthur Miller’s *Death of a Salesman*, Gene Luen Yang’s *American Born Chinese*, and Kurt Vonnegut’s *Slaughterhouse-5*.

Students enrolling in 11 Accelerated should be prepared for nightly reading assignments of approximately 40-45 pages; in 11 Honors 30-35 pages; in 11 College Prep 20-25 pages. Similarly, writing amounts vary by level.

---

## AP LITERATURE & COMPOSITION

0421 (4 credits)

Full Year

Grade 12

---

Advanced Placement Literature and Composition is designed to enable advanced students to gain first year college mastery of writing and literature. Units on nonfiction, drama, fiction and poetry review the elements and terms of each genre and require students to demonstrate their analytical and expository skills in writing and discussion. Students practice for the AP Literature and Composition exam, assume major responsibility for small group presentations and conduct research and analysis using critical sources. Continuous outside reading is assigned. Upon completion of the course, students may take the AP Exam in Composition and Literature offered by the CEEB if they so choose.

---

## ENGLISH 12

0431; 0432; 0433 (4 credits)

Full Year

Grade 12

---

Twelfth grade English offers students an intricate examination of critical literary lenses through diverse, dynamic and didactic artifacts. Students will explore the purpose, assumptions, strategies and critical vocabulary that define Formalist Criticism, Biographical Criticism, Historical Criticism, Psychoanalytical Criticism, Postcolonial Criticism (Honors & Accelerated only) Feminist Criticism (Honors & Accelerated only) and Marxist Criticism (Accelerated only). In addition to demonstrating an understanding of critical lenses and applying their strategies to analyze and interpret literature, students will demonstrate through close textual analysis and interpretation of fiction, poetry, nonfiction and drama an understanding of the relationship between the form of a literary work and its meaning. The course offers students regular opportunities to refine creative, personal and critical essay writing skills, employing various strategies to generate and organize their ideas, draft and revise clear, focused, and coherent compositions and evaluate their own writing.

All twelfth grade students must complete a comprehensive research project, the Senior Paper. Representative texts include William Shakespeare’s *Hamlet*, Toni Morrison’s *Song of Solomon*, Jhumpa Lahiri’s *Interpreter of Maladies*, William Golding’s *Lord of the Flies*, Albert Camus’ *The Stranger*, Margaret Atwood’s *The Handmaid’s Tale*, Ta Nehisi Coates’ *Between the World and Me*, Ryan Coogler’s *Fruitvale Station*, David Mamet’s *Oleanna*. **Students enrolling in 12 Accelerated should expect to read 40-45 pages per night; in 12 Honors 40 pages; in 12 College Prep 25 pages. Similarly, writing amounts vary by level.**

---

## BRAVER NEWER WORLD

0631, 0632 (4 credits)

Full Year

Grade 12

---



Offered for both Accelerated and Honors credit: In this full-year, 12th grade English course, students will explore contemporary identity paradigms through exclusively 21st century literature and media in order to understand the influence of diverse forms of literacy on modern character and voice. Navigating a range of texts and expressive forms—novel, play, podcast, film, music, digital news platform, social media, television, wikis/blogs—students will examine the influence of power, culture, race, gender, sexual orientation, class, and age on popular culture and present-day narrative structures. In the second semester, students will collaboratively design, manage, and deliver a capstone project in which they articulate a contemporary question or problem of their choice, research its nuanced history, and participate in a series of class-designed events during which groups may deliver presentations, facilitate community discussions, organize speakers, and engage in meaningful student activism. Students enrolling in Braver Newer World should expect to read 40+ pages per night. This is a single block, four credit course that fulfills the senior year English requirement.

---

#### INTEGRATED SENIOR STUDIES: THE GREATER BOSTON PROJECT

0491	(4 credits)	Full Year	Grade	9:
------	-------------	-----------	-------	----

---

This course explores how individuals and groups have worked throughout history to effect change in Greater Boston. Students will look at various historical moments through a variety of different lenses - population, government, economy, education, and arts and leisure - and consider how these have molded what Greater Boston has become today. The course of study is expressly interdisciplinary, as skills from the disciplines of English, history, and mathematics are brought together to explore Greater Boston's past and present and it is project-based, so group projects make up the majority of the course assessments. The course culminates in the Community Action Project, which entails collaborative exploration into and analysis of at least one area of study from the course; the project allows students to become agents of change as they work to develop, propose, present, and possibly implement their resolutions to existing real-world problems. **This is a double block, eight credit course that fulfills the senior year English requirement.**

## ENGLISH ELECTIVES

---

#### EXPERIMENTAL WRITING

0520	(2 credits)	Semester	Grades 9, 10, 11, 12
------	-------------	----------	----------------------

---

Experimental writing is an elective course designed to enable students to approach writing with a sense of freedom. Students have experiences in a variety of forms such as letters, personal narratives, journals, short stories, dramatic monologues, dialogues and one-act plays. They write poetry and experiment with different voices and styles. They have opportunities to discuss ideas and to share their writing with other students. Students are expected to complete reading and writing exercises for classroom discussion and evaluation. They are required to respond to both teacher and peer evaluation of their work and to complete the process of writing by editing their work carefully and precisely. Class time is given for individual conferences and evaluations of



students' progress.

---

### **PUBLIC SPEAKING (0510):**

*0510 (2 credits)*

*Semester*

*Grades 9, 10, 11, 12*

---

Public speaking is designed to enhance students' oral communication skills and to help students develop poise and confidence in public speaking situations. The course provides an opportunity to explore personal attitudes toward public speaking, the verbal and nonverbal dynamics of communication, listening skills, the speech-making process, various delivery styles and techniques and speech evaluation.

---

### **FILM STUDIES**

*0530 (2 credits)*

*Semester*

*Grades 9, 10, 11, 12*

---

In this course, students consider the medium of film both as audience and creator. Extensive film viewing and analysis are essential course components as students assess films both in and outside of class to develop their own aesthetic values. Students need to be able to think and write critically about film. Students study the history of film and film theory, learn to analyze their experience as an audience and place themselves within the position of director, cinematographer, editor and screenwriter by creating all elements of a film.

---

### **JOURNALISM 1 -- THE HILLTOPPER**

*0547 (4 credits)*

*Full Year*

*Grades 9, 10, 11, 12*

*0548 (2 credits)*

*Semester*

*Grades 9, 10, 11, 12*

---

This semester and full year course will focus on writing for publication and critical consumption and analysis of news media. Students will interact with a variety of article types, including news articles, features, columns, editorials and reviews. The primary emphasis of the course will be the development of all phases of our school-based newspaper, *The Hilltopper*. Students will research and write pieces, edit and layout the paper. Students who have taken the previously titled Journalism and Media class are eligible to enroll in this new offering, though it is not a prerequisite.

## **ENGLISH LANGUAGE LEARNERS**

The English Learner (EL) Program provides ELs with systematic, explicit, and sustained English language development and meaningful participation in the Needham's general educational program. English Language Development (ELD) happens in SEI classrooms as ELs learn grade-level content along with their proficient English-speaking peers.

English language development also happens in ESL classes, when ELs are grouped together and licensed ESL teachers guide students in a systematic, dedicated, and sustained study time to develop various aspects of the English Language that proficient English-speakers already know. The goal of ESL instruction is to advance English language development and to promote academic achievement. ESL instruction includes social and academic language in all four domains including listening, speaking, reading, and writing.

Effective ESL instruction supports student success in school, including improvement of ACCESS scores and acceleration of academic achievement. Effective ESL instruction also supports long term goals such as college and



career readiness.



## **FINE AND PERFORMING ARTS**

All Visual Arts and Performing Arts courses offered may be used to meet the NHS arts requirement of 8 credits for graduation.

### **Visual Art Courses**

Num	Length	Credit	Course	Num	Length	Credit	Course
7010	F	4	Art 1	7158	S	2	Introduction to Sculpture
7022	F	4	Art 2 Hon	7159	S	2	Digital Art and Animation
7041	F	4	Art 3 Acc	7176	S	2	Intro to Photography 1 (grades 10, 11, 12)
7031	F	4	AP Art 3 Portfolio	7177	S	2	Intermediate Photography 2
7141	F	4	Art 4 Senior Studios Acc	7178	S	2	Advanced Photography 3
7116	S	2	Introduction to Ceramics 1	7185	S	2	Advanced Digital Portfolio
7118	S	2	Intermediate Ceramics 2	7193	S	2	Drafting and Linear Perspective 1
7109	S	2	Advanced Ceramics 3	7196	S	2	Drafting and Linear Perspective 2
7119	S	2	★ Advanced Ceramics Portfolio	7245	S	2	Design & Production 1
7120	S	2	Crafts 1	7235	S	2	Design & Production 2
7128	S	2	Drawing & Painting 1	7237	S	2	Advanced Design & Production 3
7136	S	2	Drawing & Painting 2	7246	S	2	Motion Design
7258	S	2	Product Design & Development	7255	S	2	A Glimpse Through Time: Visual Language and Culture
7238	S	2	Comics				

The Art curriculum consists of tracks: Full Year Art 1 through Art 4 sequence and semester long art courses ranging in focus and discipline. Critiques, which are class discussions of student artwork aimed at providing feedback as part of the design process, are an integral part of all Art courses. Homework is assigned on a



continuing basis for all courses, and students will experience a variety of strategies dealing with personal artistic assessment. Courses are designed to enable students to meet the National Standards, the Massachusetts Frameworks in Arts Education, and the Fine and Performing Arts Processes: Creating, Responding and Presenting, and Performing. Students will also further develop Social-Emotional and 21st Century Skills in all of the Visual Art Courses.

## FULL YEAR ART COURSES

Designed as a sequential curriculum and increasingly challenging curriculum, students enrolled in Art 1 through Art 4 explore the Fine Arts and create a portfolio of work which can be used to enhance the college application process, apply for College Board AP Credit (in Art 4), or to pursue careers in art and design. These courses develop a student's ability to communicate visually, an understanding of the arts historically, development of design vocabulary, creativity and problem solving skills. Homework is assigned regularly, and students become familiar with various art media, techniques, tools, and concepts to gain a broad awareness of the visual arts. Each full year art course earns four credits.

---

### ART 1

7010 (4 credits)

Full Year

Grades 9, 10, 11, 12

---

This full year course is open to anyone, and is perfect for those who have an interest in visual art. It is also the foundation course for many of the upper level art courses. Students experiment with a variety of two dimensional and three dimensional materials and processes. They will learn basic visual art concepts in design and technique, creative development, critical analysis and reflection, and create a variety of artworks throughout the year. Students will use sketchbooks to develop their personal voices, sketch and brainstorm, and touch upon cultural and historical contexts in art. Minimal homework is assigned on a continuing basis. Students who pass this course may sign up for Art 2, and Drawing and Painting 2.

---

### ART 2

7022 (4 credits)

Full Year

Grades 10, 11, 12

---

**Prerequisite:** Art 1 or both Drawing & Painting 1 and 2, or permission of the department with a portfolio review.

Art 2 Honors is offered for Honors credit and builds upon the fundamentals developed in Art 1 at a more complex, meaningful level. As the bridge that connects Art 1 to Art 3 Advanced Placement and Accelerated courses, a greater time commitment and level of investment is required. Activities, homework assignments, and in class pieces will continue improving technical and conceptual skills. Students will be required to make artistic decisions independently as they begin to develop a personal voice and style. Assignments include both two- and three dimensional media, such as drawing, painting, printmaking, design, and sculpture. In-class critiques, reviews, and self-assessments take place on a regular basis. Weekly homework completion, sketchbook assignments, and the development of a second year portfolio are basic expectations of Art 2 Honors. Successful completion of Art 2 Honors will result in a portfolio of works that may be included as a portion of a student's "breadth section" portfolio in Art 3 Advanced Placement or Accelerated.

[Return to Table of Contents](#)



---

**ART 3***7041 (4 credits)**Full Year**Grades 11, 12*

---

**Prerequisite:** Art 2

Offered for Accelerated credit, this course expands upon skills developed in Art 1 and 2. Art 3 students work towards mastery of technical skills in a range of two and three-dimensional media. Students focus on their personal growth and strive to develop a personal voice in their work. A high level of competence will be expected with project development and problem solving, as these skills enable students to push the boundaries of visual concepts and thematic focus. Students must have a strong grasp of the Elements of Art, the Principles of Design, and participate in critical analysis of their work. There will be a heavy homework obligation. A portfolio will be assembled for students to use during college interviews.

---

**AP ART 3 PORTFOLIO***7031 (4 credits)**Full Year**Grades 11, 12*

---

**Prerequisite:** Art 2 and teacher recommendation.

This course will enable students to produce a large portfolio of artwork to apply for AP college credit and/or college/art school admission. Work must show evidence of a high level of competence in project development, visual problem solving, technical skill, personal expression and understanding of the elements and principles of design. This advanced placement course carries a heavy homework obligation. It challenges students to experiment with many materials, techniques and ideas. Critical analysis and assessment are important components of the course. This analysis will aid students in creating quality works demonstrating both breadth and thematic concentration.

---

**ART 4 SENIOR STUDIO***7141 (4 credits)**Full Year**Grade 12*

---

**Prerequisite:** Art 3 Accelerated or AP Art 3 Portfolio, or departmental permission

This is a challenging, Accelerated course that is intended for students who are working toward a sense of mastery and personal growth in their work. This course is for students who are willing to take risks to develop personal ideas and to refine them into skillfully and finely crafted statements. Students will continue preparing and assembling a portfolio that may be used for college admissions and/or scholarships, whether or not they are art-school bound. Part of the class time is devoted to critical analysis of student work and individual assessments. Throughout the year, students participate in curating exhibits at various locations.

## SEMESTER ART COURSES



The Fine Arts program includes a variety of semester length two credit courses. These courses are open to all students. Please note the sequential nature of courses, and be sure to register for the proper level. All students should register for the first level as the entry into a specific course sequence, unless they have Department permission to do otherwise. Homework is assigned on a regular basis.

---

### **INTRODUCTION TO CERAMICS 1**

*7116 (2 credits)*

*Semester*

*Grades 9, 10, 11, 12*

---

This semester course introduces students to the use of clay as a medium for art expression. Students will have the opportunity to explore the properties of clay, the history of clay, and create functional and sculptural pieces. Each student will experience the three basic hand building methods (pinch, coil, slab), the basics of the wheel, various surface decoration techniques, and the glazing and firing of all completed pieces.

---

### **INTERMEDIATE CERAMICS 2 (7118):**

*7118 (2 credits)*

*Semester*

*Grades 10, 11, 12*

---

**Prerequisite:** Introduction to Ceramics

Intermediate Ceramics will engage students in more sophisticated techniques using clay and glazes. Students will learn more complex hand building and wheel throwing techniques, with emphasis on researching and developing personal styles of expression and design concepts. Students will learn and participate in the complete cycle of processing a ceramic work from the recycling of clay to the firing process.

---

### **ADVANCED CERAMICS 3 (7109):**

*7109 (2 credits)*

*Semester*

*Grades 11, 12*

---

**Prerequisite:** Intermediate Ceramics

This advanced course is designed for students who want to challenge themselves and work independently to master the medium of clay. Building on the skills and techniques developed in Introduction and Intermediate Ceramics, students will be presented with complex visual challenges that will require them to develop, design, and create solutions through hand building and the potter's wheel. A main focus of the course will be for students to design their own unit to explore individual interest and style in depth.



### **ADVANCED CERAMICS PORTFOLIO (CERAMICS 4)**

*7119 (2 credits)*

*Semester*

*Grades 11, 12*

---

**Prerequisite:** Advanced Ceramics 3 and/or permission of the Department

This is a semester course designed for advanced ceramic students who have successfully completed Advanced Ceramics (ceramics 3). There will be some challenging techniques introduced to push students into experimenting



with more difficult ceramic concepts. A main focus will be to continue exploring their individual interest and style to accumulate works to create a portfolio of expressive works suitable for submission to college, and/or possibly for AP submission. Interested students should consult their art teacher and/ or the Director of Fine & Performing Arts to ensure they are qualified for this course.

---

**DESIGN & PRODUCTION 1**

7245 (2 credits)

Semester

Grades 9, 10, 11, 12

---

This semester course presents a broad range of assignments based on the principles of design and typography. Students learn by progressing through a series of hands-on projects using Adobe Illustrator and Adobe InDesign.

---

**DESIGN & PRODUCTION 2 (7235):**

7235 (2 credits)

Semester

Grades 10, 11, 12

---

**Prerequisite:** Commercial Design & Production 1 or permission of the department.

This is an advanced course that provides students with computer based graphic design and production experience through layout and design assignments. It builds upon the skills developed in Design & Production 1, with an increased focus on real world applications of these skills.

---

**Advanced Design & Production 3 (7237):**

7237 (2 credits)

Semester

Grades 10, 11, 12

---

**Prerequisite:** Design & Production 2 or permission of the department.

This semester course, which utilizes the Graphics Production Lab, is for students who wish to gain skills in graphics production. Students interface with customers and are involved in all aspects of job production, including interviewing clients, designing, estimating cost, planning, purchasing materials, and the production of the final product. Examples of projects include concert programs, posters and event T-Shirts which are used by the school and community. Successful students may have the opportunity to become paid interns in the summer Graphics Production program.

---

**CRAFTS 1**

7120 (2 credits)

Semester

Grades 9, 10, 11, 12

---

Students design and create utilitarian and non-functional works using a variety of techniques and materials. A wide variety of crafts, media, forms and techniques from diverse cultures are explored. Assignments emphasize the fundamentals of good design, visual creativity, technical skill, and craftsmanship.) Students compare and contrast 'Crafts' with other forms of visual art.



**DIGITAL ART & ANIMATION**

7159 (2 credits)

Semester

Grades 9, 10, 11, 12

---

This course, open to all students, engages students with the world of computer generated art including digital painting and animation. This course takes place in the Fine and Performing Arts Computer lab. Students learn Photoshop, Flash, and other appropriate software to create works of art. Upon successful completion of this course, students will be ready for more advanced creative work in the areas of Photography, Graphic Design, and other arts media that utilize the potential of 21st Century digital tools.

---

**MOTION DESIGN**

7246 (2 credits)

Semester

Grades 10, 11, 12

---

**Prerequisite:** Digital Art and Animation.

This semester course is for students wishing to take the skills they have obtained through Digital Art, Design and Animation, and expand and utilize them in the study and creation of 3D renderings and more complex animation. A variety of digital creating tools will be used, such as Maya, as well as non-digital animation techniques, such as stop motion.

---

**DRAFTING & LINEAR PERSPECTIVE 1**

7193 (2 credits)

Semester

Grades 9, 10, 11, 12

---

This semester course, open to all students, is ideal for those who enjoy a more mathematical and technical approach to drawing. Students will be introduced to the fundamentals of drafting, and the representation of three dimensions on a two dimensional plane by using 1 and 2 point perspective. Students will design and draw from observation and imagination, applying the elements and principles of design. A 3D construction unit will give students the opportunity to articulate design decisions in real space, as determined by a specific challenge and set of criteria. Students will be expected to participate in mini-lectures, coursework critiques and reflections.

---

**DRAFTING & LINEAR PERSPECTIVE 1**

7196 (2 credits)

Semester

Grades 10, 11, 12

---

**Prerequisite:** Drafting & Linear Perspective 1, or permission of the department.

This semester course develops and builds upon the content explored in Drafting and Linear Perspective 1. During this class, students will work from observation and imagination, finding new applications for rendering in 2 point perspective and will also undertake a drawing that uses three vanishing points. As with Drafting and Linear Perspective 1, there will be at least one 3D challenge. Reference will be made to specific historical architectural styles and developments, to enrich and inform the student's aesthetic and design decisions.



---

**DRAWING & PAINTING 1***7128 (2 credits)**Semester**Grades 9, 10, 11, 12*

---

This semester course is open to anyone who is interested in learning how to paint and draw. It provides a solid foundation in the fundamentals of drawing and painting skills as a vehicle for thinking, seeing and communicating. Using a wide variety of tools and techniques, students learn to develop thoughtful and well-crafted pieces which pull from a broad range of subjects and techniques. Students will practice creative brainstorming and process development as a way to make their work personally meaningful. There is a light homework component.

**\*\*** This course is NOT open to students who have completed Art 1 with a C- or higher. Note: Upon completion of D/P 1 and 2, students may present their portfolio to the FPA staff to determine eligibility for Art 2 Honors.

---

**DRAWING & PAINTING 2***7136 (2 credits)**Semester**Grades 10, 11, 12*

---

**Prerequisite:** Drawing & Painting 1 or permission of the Department.

This course is a continuation of Drawing & Painting 1. Students will expand and refine their drawing and painting skills and utilize a wide variety of tools and techniques to communicate visually. Journals, self-analysis, and daily critiques are an important part of the course. Upon successful completion of both Drawing & Painting 1 and Drawing & Painting 2, students may present their portfolio to the department to determine eligibility for Art 2 Honors.

---

**INTRODUCTION TO SCULPTURE (7158)***7168 (2 credits)**Semester**Grades 9, 10, 11, 12*

---

This semester art course is suitable for ALL LEVELS who are interested in diving into the world of three dimensional art. Students discover and explore sculpture through hands-on exploration of a variety of 3D media. They will be introduced to physical, cultural and social contexts in which traditional and modern sculptures are created. A wide range of sculptural disciplines will be touched upon, which may include realistic, figurative, abstract, kinetic and site specific/ public works. Learning the essentials of principles and elements of design, critical reflection and analysis, and creative development are part of this course. There is a minimal homework requirement. (Please note: Interdisciplinary collaboration may take place when schedules allow)

---

**INTRODUCTION TO PHOTOGRAPHY 1 (7176):***7176 (2 credits)**Semester**Grades 10, 11, 12*

---

This course gives students an introduction to shooting, processing, printing black and white photographs in the



darkroom, as well as digital photography and computer enhancing/manipulation techniques with photoshop. Students learn the fundamentals, including how manual cameras work and understanding exposure. When not shooting, processing, or in the darkroom, in class assignments strengthen students' design and conceptual skills. The work of several photographers will be introduced throughout the course. When not shooting, processing, or in the darkroom, in class assignments strengthen students' design and conceptual skills. The work of several photographers will be introduced throughout the course. Students will borrow and sign-out materials, such as cameras from the school, and would benefit from access to a digital single lens reflex (DSLR) camera for personal use outside of school. There is a minimal homework component to this course. It can be applied to the fields of Photography, Design, Advertising, Marketing, and many more! This course is only open to students entering grades 10, 11 or 12.

---

**INTERMEDIATE PHOTOGRAPHY 2 (7177):**

7177 (2 credits)

Semester

Grades 10, 11, 12

---

**Prerequisite:** Introduction to Photography 1

This course is a continuation of Photography 1 and provides the student with increased experiences in producing high quality photographs. Students progress through a series of incrementally challenging assignments using traditional photography techniques. Advanced techniques are designed to help students develop the skills necessary to translate creative ideas into more personal and compelling images. Since this course requires outside of class photo shooting, students would benefit from having access to a digital single lens reflex (DSLR) camera for their personal use. There is a light homework component to this course. It can be applied to the fields of Photography, Design, Advertising, Marketing, and many more!

---

**ADVANCED PHOTOGRAPHY 3**

7178 (2 credits)

Semester

Grades 10, 11, 12

---

**Prerequisite:** Intermediate Photography 2

This course is designed for the student who has successfully completed Photography 1 and 2. Students will intensify their use of photography, both traditional and digital, as a means of self-discovery and personal expression while expanding and refining technical control of the medium. Students will learn to identify and articulate a personal response to the environment. The course emphasizes visual problem solving through in-depth photo essays. Since this is an advanced course and requires outside of class photo shooting, students must have access to a digital single lens reflex (DSLR) camera for their personal use. Students who would like to continue to develop their skills after the completion of Advanced Photography are encouraged to enroll in Advanced Digital Portfolio.

There is a medium amount of homework expected to complete in this course, as students will be asked to regularly make imagery outside of the classroom setting. This course can be applied to the fields of Photography, Design, Advertising, Marketing, and many more!



---

**ADVANCED DIGITAL PORTFOLIO***7185 (2 credits)**Semester**Grades 11, 12*

---

**Prerequisite:** Advanced Photo 3, Commercial Production, or permission of the Department.

This semester course is designed to allow advanced art students who have successfully completed Advanced Photo 3, or Commercial Production 2, to use their digital art skills and accumulated works to create a portfolio of expressive works suitable for submission to college, and/or possibly for AP submission. Interested students should consult their Art teacher and/ or the Director of Fine & Performing Arts to ensure they are qualified for this course. Currently offered during Fall Semester.

---

**PRODUCT DESIGN & DEVELOPMENT***7258 (2 credits)**Semester**Grades 10, 11, 12*

---

**Prerequisites:** Digital Art & Animation; Commercial Design & Production 1; or Engineering Design 101 courses offered at NHS.

In this two credit semester course students will develop and design products, focusing on toys, board games, and musical instruments. They will use the Design Thinking process while creating, testing, and refining the product. Students will explore the design development process in the fields of Product and Toy Design from conceptualizing/ problem solving, drawing, creating presentation boards, models, prototyping etc. The course will cover the importance of functionality, ergonomics, preserved value, play patterns, and demographic needs. The history of product, toy and instrument design will be incorporated to inform student design decisions. They will use simulations and statistics to predict game flow/outcomes; study the physics behind the instruments/sound to inform their design. Instruction includes lectures, literature, design critiques and hands on modeling & utilizing the tools in Studio 605 and The DaVinci Workshop.

---

**COMICS***7236 (2 credits)**Semester**Grades 10, 11, 12*

---

**Prerequisite:** Drawing and Painting 1, Art 1, or permission of the Department.

Whether a Mayan codex or a Superman comic, humans have been expressing ideas and telling stories using images in sequence for hundreds of years. In this class, students will explore the history and uses of 'sequential art', and develop skills to create their own comics and graphic novels. Comic books and graphic novels have become an incredibly powerful, varied, and popular form of visual storytelling. Marvel and DC superheroes reach a vast audience, as does Manga, the Japanese form of comic books. Comics are used to express a range of themes, from comedy, to adventure and fantasy, as well as memoir, and social and political commentary. In this class, students will mostly use traditional art tools - pencil, pen, ink, and brush - to develop their work and vision. We will build upon our drawing skills while also exploring concepts unique to the world of comics, such as



lettering, panel structure, panel transitions, and cinematic shots. Character Design and Narrative Structure will also be explored.

---

**A GLIMPSE THROUGH TIME: VISUAL LANGUAGE & CULTURE**

7255 (2 credits)

Semester

Grades 9, 10, 11, 12

---

This process based course will travel through time to unleash the visual voices that are commonly left out of the conversation. Students will learn what it means to be a visual communicator through a multicultural lens. Regions such as Northwest Africa, the Middle East, pre and post Columbian Latin America, East and Southeast Asia will be the primary focus in this hands-on studio course. Students will get an opportunity to develop work using traditional materials and techniques such as; Calligraphy on Maobianzhi paper, Batiks with wax reduction, and much more. In this course, students will spend approximately thirty percent of time investigating cultural art practices and stories and seventy percent of the time designing, developing and creating pieces influenced by these stories. Together we will study how that language has changed over time, what voices stood out and what voices were left out of the conversation. Students will work together to redirect the conversation to build a more equitable future of visual communicators.



## Performing Art Courses

Num	Length	Credit	Course	Num	Length	Credit	Course
8020, 8029	F	4	Concert/Symphonic Band	8165	S	2	Theatrical Construction & Design
8011	F	4	Symphonic Band Acc	8166	S	2	★ Acting & Improvisation
8036	F	4	Jazz Ensemble (after school)	8167	S	2	★ Introduction to Theatre
8040	S	2	Jazz Improvisation	8118	S	2	Music Technology 1: Song Writing
8060	F	4	String Orchestra	8119	S	2	Music Technology 2: Film Scoring
8061	F	4	String Orchestra Acc	8075	S	2	AP Music Theory 2
8068	F	2	Performance Seminar	8070	S	2	Music Theory 1
8080, 8077	S	2	Chorus/Bella Você Chorus	8067	F	2	Modern Music Laboratory
8081, 8041	F	4	Chorus Acc/ Bella Voce Chorus Acc	8125	S	2	Guitar Class 1
8074	F	4	Concert Chorale	8126	S	2	Guitar Class 2
8051	F	4	Concert Choral Acc	8135	S	2	Piano Lab 1
8056	F	4	Chamber Orchestra	8136	S	2	Piano Lab 2
8151	F	4	Chamber Orchestra Acc				

All Performing Arts courses are designed to meet the National Standards and Massachusetts Frameworks in Music or Theater Education and the Fine and Performing Arts Domains: Creating, Responding and Performing. Performing Arts courses are divided into two categories: Performance Courses and Semester Classroom Courses. Performance Courses require students to continually refine their performance skills and to participate in public performances outside of the regular school day. Semester classroom courses do not require public performance.

## PERFORMANCE COURSES

### CONCERT/SYMPHONIC BAND

[Return to Table of Contents](#)



---

**Prerequisite:** Previous experience playing a traditional band instrument in an ensemble. Membership in Concert or Symphonic Band is required to audition for Jazz Ensemble, District and All-State Festivals.

The High School Band is open to students in grades 9 through 12 who have previously or are currently studying a band instrument (e.g., Woodwind, Brass, or Percussion) at an intermediate to advanced level. The band program is divided into two groups, the Concert Band and the Symphonic Band, based upon playing ability (auditions), teacher recommendation, and balanced instrumentation between the bands. In both ensembles students will study music of a variety of styles and time periods in preparation for concert performance. Rehearsals will include section and/or small ensemble development in addition to the large ensemble playing. The Concert and Symphonic Bands perform in high school concerts, evaluation festivals, and community events throughout the year. Band is a four-credit course. Public concerts are part of each band's formal curricula and attendance at them is mandatory.

---

#### **SYMPHONIC BAND ACC**

8011 (4 credits)

Full Year

Grades 9, 10, 11, 12

---

**Prerequisite:** a minimum of one year's previous experience in high school band or department permission.

Students enrolled in Symphonic Band may elect to take Symphonic Band Accelerated to receive academic credit for advanced study and performance on their chosen instrument. Students enrolled in this course must meet all of the Symphonic Band requirements, study their instrument with an approved private instructor, audition for District/Honors groups, perform in an additional ensemble beyond the regular school day, and present a formal solo for their instrument in a recital once each semester. In addition, Symphonic Band Accelerated students are expected to attend one non-Needham formal concert each marking period and complete a written review of the event.

---

#### **JAZZ ENSEMBLE**

8036 (4 credits)

Full Year

Grades 9, 10, 11, 12

---

**Prerequisite:** Students must be members of Concert Band, Symphonic Band, or Marching Band to be eligible for Jazz Ensemble.

This class is open to students by audition only. Instrumentation is for standard Big Band (i.e. saxophones, trumpets, trombones, piano, guitar, bass and drums). The Jazz Ensemble studies and performs a wide range of music, including Swing, Latin, Funk, and contemporary Jazz. Rehearsals emphasize understanding and playing the various styles, as well as balancing and blending within sections and the entire ensemble. Students also work on improvisation, scales, modes and chord construction. Auditions are held in the spring and the ensemble meets after school throughout the school year. The Jazz Ensemble performs at school concerts, an evaluation festival, and various school and community functions; these public concerts are part of the formal curricula and



attendance at them is mandatory.

---

**JAZZ IMPROVISATION**

8040

(2 credits)

Semester

Grades 9, 10, 11, 12

---

**Prerequisite:** At least two years of successful performance in a middle or high school performing ensemble, or permission of the instructor.

The purpose of this course is for students to develop confidence in independent playing and in the art of spontaneous composition in a jazz style. Students start by learning blues progressions, followed by other typical chord changes and progressions. Additionally, students engage in considerable study of scales, chords, and combo playing. Students are placed in groups according to their ability.

---

**STRING ORCHESTRA**

8060

(4 credits)

Full Year

Grades 9, 10, 11, 12

---

**Prerequisite:** Previous playing experience in an orchestral style ensemble or department permission. Membership is required to audition for District and All-State Festival Orchestras.

The String Orchestra is open to students in grades 9 through 12 who play an orchestral string instrument. Students pursue the development of instrumental technique and musicianship through the study of orchestral works from various stylistic periods. Students receive coaching in sight-reading, ear training, and theory. There is opportunity for interested students to explore the art of conducting. Solo literature and chamber music are explored as well. The Orchestra performs at school concerts and at various evaluation festivals and community events throughout the year. Public concerts are a formal part of the orchestra's formal curricula and attendance at them is mandatory.

---

**STRING ORCHESTRA ACC**

8061

(4 credits)

Full Year

Grades 9, 10, 11, 12

---

**Prerequisite:** a minimum of one year previous experience in high school String Orchestra or department permission.

Students enrolled in String Orchestra may elect to take String Orchestra Accelerated to receive academic credit for advanced study and performance on their chosen instrument. Students enrolled in this course must meet all the classroom and performance requirements of the String Orchestra, along with studying their instrument with an approved private instructor, auditioning for District/Honors groups, performing in an additional ensemble beyond the regular school day, and presenting a formal solo for their instrument in recital once each semester. In addition, Accelerated students are expected to attend one non-Needham formal concert each marking period and complete a written review of the event.



**CHAMBER ORCHESTRA***8056**(4 credits)**Full Year**Grades 9, 10, 11, 12*

---

**Prerequisite:** Enrollment is open by audition.

The Chamber Strings Ensemble is open by audition to students in grades 9 through 12 who have previously or are currently studying an orchestral string instrument. Auditions are held in the Spring. Students pursue the development of instrumental technique and musicianship through the study of orchestral works from various stylistic periods. Students receive coaching in sight-reading, ear training, and theory. There is opportunity for interested students to explore the art of conducting. Solo literature and chamber music are explored as well. The Orchestra performs at school concerts and at various evaluation festivals and community events throughout the year. Public concerts are a formal part of the orchestra's formal curricula and attendance at them is mandatory. Membership is required to audition for District and All- State Festival Orchestras.

---

**CHAMBER ORCHESTRA ACC***8151**(4 credits)**Full Year**Grades 9, 10, 11, 12*

---

**Prerequisite:** a minimum of one year previous experience in high school Orchestra or department permission.

Students enrolled in Chamber Orchestra may elect to take Chamber Orchestra Accelerated to receive academic credit for advanced study and performance on their chosen instrument. Students enrolled in this course must meet all the classroom and performance requirements of the String Orchestra, along with studying their instrument with an approved private instructor, auditioning for District/Honors groups, performing in an additional ensemble beyond the regular school day, and presenting a recital on their instrument once each semester. In addition, Accelerated students are expected to attend one non-Needham formal concert each marking period and complete a written review of the event.

---

**PERFORMANCE SEMINAR***8068**(2 credits)**Full Year**Grades 9, 10, 11, 12*

---

This course is open to both Instrumentalists and vocalists. This is a two credit year long course which meets after school on Tuesdays and Thursdays from 2:45-3:45 PM. Students enrolled in this course will primarily work on solo literature that is appropriate for their instrument and skill level, although there may be additional opportunities for collaborative literature based upon the enrollment in the course. Students will receive coaching, participate in mock recitals during class for student feedback, and give formal recitals throughout the school year.

---

**CHORUS/BELLA VOCE***8080/8077 (4 credits)**Full Year**Grades 9, 10, 11, 12*

---

The High School Chorus is a performance course open to all students. No previous formal vocal experience is needed. Students sing a wide variety of choral literature representative of different styles by contemporary and historical composers. When there is a large number of soprano/alto voices, a separate treble voice chorus will be scheduled. In addition to selections performed by the entire group, students are provided with opportunities to



form smaller groups within the chorus. Student conductors and accompanists have opportunities to develop their skills when appropriate. Students develop musicianship, vocal technique, listening, and critical thinking skills. The chorus performs for high school concerts and community programs throughout the year. Public concerts are a formal part of each chorus' curricula and attendance is mandatory. The student must be a member of the chorus in order to audition for District and All-State Festivals.

---

**CHORUS/BELLA VOCE ACC**

8081/8041 (4 credits)

Full Year

Grades 9, 10, 11, 12

---

**Prerequisite:** a minimum of one year of previous experience in high school chorus or department permission.

Students enrolled in Chorus or Bella Voce may elect to take the Accelerated option to receive academic credit for advanced formal vocal study and performance. In addition to meeting all of the classroom and performance requirements of the Chorus, students enrolled in this course must study privately with an approved vocal instructor, audition for District/ Honors groups, perform in an additional vocal ensemble outside of Chorus on a regular basis, and present a formal vocal solo in a recital once a semester. Chorus Accelerated students are expected to attend one non-Needham formal concert each marking period and complete a written review of the event.

---

**CONCERT CHORALE**

8074 (4 credits)

Full Year

Grades 9, 10, 11, 12

---

**Prerequisite:** Successful completion of the audition.

Concert Chorale is open to students in grades 9-12 by audition. It is an advanced mixed vocal ensemble usually numbering between 16-20 students. Auditions for the group take place in the spring. Music studied/performed ranges from the Renaissance period through contemporary genres and is meant to challenge the most serious, advanced student singers. Chorale students may audition for District and All-State Festivals. The Chorale performs several times each year, as well as at a variety of community events and regional festivals. Public concerts are a formal part of the chorale's formal curricula and attendance at them is mandatory.

---

**CONCERT CHORALE ACC**

8051 (4 credits)

Full Year

Grades 9, 10, 11, 12

---

**Prerequisite:** a minimum of one year of previous experience in high school chorus or department permission.

Students enrolled in Concert Chorale may elect to take the Accelerated option to receive academic credit for advanced formal vocal study and performance. In addition to meeting all of the classroom and performance requirements of the Chorus, students enrolled in this course must study privately with an approved vocal instructor, audition for District/Honors groups, perform in an additional vocal ensemble outside of Chorus on a regular basis, and present a formal vocal solo in a recital once a semester. Chorus Accelerated students are expected to attend one non-Needham formal concert each marking period and complete a written review of the event. Public concerts are a part of the chorale's formal curricula and attendance is mandatory.



---

**MODERN MUSIC LABORATORY**

8067

(2 credits)

Full Year

Grades 9, 10, 11, 12

---

**Prerequisite:** An informal meeting with the instructor is required for enrollment.

A full year, 2 credit performance seminar focused on music of the past 50 years, including rock, rap, R&B, folk, funk, pop, and more, with a strong leaning towards current music. Students will develop collaborative skills in arranging, recording, instrumental technique, performance, and project management. This course meets twice a week for the entire school year outside of normal school hours (typically Tuesday and Thursday mornings prior to the start of the school day). Students will be required to participate in some after school events. Students who are interested in enrolling in Contemporary Music Ensemble should enroll in this course.

---

**GUITAR ENSEMBLE**

8127

(4 credits)

Full Year

Grades 9, 10, 11, 12

---

Guitar Ensemble is a full year, 4 credit class that gives students the opportunity to play guitar repertoire in a performing ensemble. This course emphasizes skill-based knowledge learned in Guitar 1 and Guitar 2 such as reading music notation, playing position, technique, strummed and plucked chords, music symbols, and playing two, three, and four-part arrangements in an ensemble. Students will play on classical nylon string guitars and have a foot stand (both provided by the school). Students will participate in school concerts as well as other school and community events.

## SEMESTER CLASSROOM COURSES

---

**MUSIC TECHNOLOGY 1: PRODUCTION & SONGWRITING**

8118

(2 credits)

Semester

Grades 9, 10, 11, 12

---

This course teaches students the skills and concepts needed for songwriting. They will compose original music using computers, software, and cloud based applications. Students will learn the same processes and tools that today's composers and recording artists use. Students will learn the basics of music technology, computer usage, music notation, composition, arranging, and theory to help them as they go through this process. This course has no prerequisite and is designed for students to be successful without having any previous formal musical training.

---

**MUSIC TECHNOLOGY 2: FILM SCORING**

8119

(2 credits)

Semester

Grades 9, 10, 11, 12

---

**Prerequisite:** Music Technology 1 or permission of the instructor.

This course builds upon the skills and concepts taught in Music Technology 1. Students will expand their use of

[Return to Table of Contents](#)



technology and software to explore music production, including film scoring, in greater detail. By the end of this course, students will feel comfortable creating original music and bringing it to a level suitable for recording and public performance. When possible students may have the opportunity to create musical scores for visual art animations and film clips.

---

### **MUSIC THEORY 1**

8070

(2 credits)

Semester

Grades 9, 10, 11, 12

---

**Prerequisite:** the ability to read traditional music notation

This course covers the basics of music theory and ear training, including scales and modes, intervals, triads and seventh chords, harmony, non-harmonic tones, part-writing, and form and analysis. Students will use the music technology lab for ear training, music writing assignments, and drill and practice programs. Any student interested in pursuing formal music instruction at the college level should enroll in this course, in addition to their performing ensemble course.

---

### **AP MUSIC THEORY 2**

8075

(2 credits)

Semester

Grades 9, 10, 11, 12

---

**Prerequisite:** Music Theory I or permission of the instructor.

In this course, students build aural and written music skills through intensive study in ear training, sight singing, melodic and harmonic dictation, part writing, form and analysis, and score reading. Further harmonic study will focus on seventh chords, non-chord tones, secondary dominant and leading tone chords, and modulation. The emphasis in the class is on developing written and listening skills; there is much drill and practice on scales, intervals, and chords, as well as utilizing harmonic, melodic, and rhythmic dictation. Students use the music computer lab throughout the class. This course is designed to enhance preparation for the College Board's Advanced Placement Music Theory Exam given in the Spring.

---

### **GUITAR CLASS 1**

8125

(2 credits)

Semester

Grades 9, 10, 11, 12

---

This course is designed for students new to the instrument and teaches the basics of guitar playing. Students will learn to play the guitar through tuning the guitar, playing daily warm ups, technique, reading notes, learning music symbols, playing chord progressions, and establishing a steady beat. Beginning guitar students as well as students with previous experience will find the course essential to establishing a strong foundation in the instrument. Students will participate in classroom performances. School concert performance opportunities available but not required.

---

### **GUITAR CLASS 2**

8126

(2 credits)

Semester

Grades 9, 10, 11, 12

---



**Prerequisite:** Guitar Class 1 or permission of the department.

This course builds upon skills learned in Guitar Class 1. Continuation of daily warm ups, technique, reading notes, learning music symbols, playing chord progressions, and establishing a steady beat. Students will learn more complex material and develop new skills as your guitar playing is brought to the next level. Class activities will culminate in at least one formal performance in front of an audience.

---

**PIANO LAB 1 (8135):**

8135	(2 credits)	Semester	Grades 9, 10, 11, 12
------	-------------	----------	----------------------

---

Piano Lab 1 is designed for students new to the instrument and teaches the basics of piano playing. Students will learn about technique, melody, accompaniment, music reading, and music symbols. Students will read exercises, partner songs, solo repertoire, playing by ear, and be introduced to improvisation. Students will play on electric keyboards. Students will participate in classroom performances. School concert performance opportunities available but not required.

---

**PIANO LAB 2**

8136	(2 credits)	Semester	Grades 9, 10, 11, 12
------	-------------	----------	----------------------

---

**Prerequisite:** Piano Lab 1 or permission of the Department.

Piano Lab 2 builds upon skills learned in Piano Lab 1. Students will learn about more complex technique, melody, accompaniment, music reading, and music symbols. Students will read exercises, partner songs, solo repertoire, playing by ear, and be introduced to improvisation. Students will have the opportunity to learn well-known, established repertoire on the piano from classical to contemporary. Students will play on electric keyboards. Students will participate in classroom performances. School concert performance opportunities available but not required.

---

★ **ACTING & IMPROVISATION**

8166	(2 credits)	Semester	Grades 9, 10, 11, 12
------	-------------	----------	----------------------

---

Renamed and rebranded course that combines Theater Arts 1 and 2

This courses, open to all students, provides practice for actors in voice, movement and performance using scenes from a variety of plays, as well as improvisation and mime. Students learn skills of projection and characterization by performing and critiquing scenes from plays and by developing original characters in specific settings. Emphasis in this course is on acting technique, scene analysis, and directing principles. Students will refine their skills by studying, analyzing and performing a wide variety of scenes representing multiple genres of theatrical style and craft. Class activities will culminate in one formal production or presentation in front of an audience.

---

★ **INTRODUCTION TO THEATRE**

8167	(2 credits)	Semester	Grades 9, 10, 11, 12
------	-------------	----------	----------------------

---

New course proposal with no formal performances requirement for an audience.

[Return to Table of Contents](#)



This course is for students interested in a broad overview of theater. This course introduces students to a variety of elements and principles used in the process of theater production and provides opportunities for students to experience performance aspects in class. The class will also provide a technical overview of producing a play, including business management. This course will help students interested in pursuing theater after high school by allowing students to learn about the many facets of theater. There is no formal performance requirement for an audience for this course.

---

**THEATRICAL CONSTRUCTION & DESIGN**

8165	(2 credits)	Semester	Grades 9, 10, 11, 12
------	-------------	----------	----------------------

---

Theatrical Construction & Design is a class which provides an opportunity for students to explore and create the design for a theatrical set. Students will engage in the processes of both designing and building a set, lighting and sound design and all other aspects of theatrical production often using one the high school theatrical productions as the working example. This class will run only in the Spring Semester.



## MATHEMATICS

Num	Length	Credit	Course	Num	Length	Credit	Course
2023	F	4	Integrated Math 9	2332	F	4	Statistics Hon
2033	F	4	Math 9 CP	2333	F	4	Fundamentals of Calculus and Statistics
2022	F	4	Math 9 Hon	2475	S	2	Critical Thinking in Math
2042	F	4	Math 9IP	2613	S	2	Principles of Accounting
2021	F	4	Math 9 Acc	2615	S	2	Personal Finance
2113	F	4	Algebra 2 CP	2489	S	2	Robotics
2122	F	4	Algebra 2 Hon	2466	S	2	Engineering Design 101
2013	F	4	Geometry CP	2467	S	2	Computer Aided Design and Manufacturing
2082	F	4	Geometry Hon	2482	S	2	Introduction to computer Science
2091	F	4	Geometry Acc	2476	S	2	Computer Programming Fundamentals
2043	F	4	Integrated Math 10	2488	S	2	AP Computer Science Principles
2052	F	4	★ Math 10IP	2490 2496	F/S	2	Junior/Senior STEM Capstone 2cr
2134	F	4	Contemporary Applied Mathematics	2311	F	4	AP Calculus AB
2203	F	4	Pre-calculus CP	2321	F	4	AP Calculus BC
2212	F	4	Pre-calculus Hon	2331	F	4	AP Statistics
2221	F	4	Pre-calculus Acc AB	2481	F	4	AP Computer Science
2231	F	4	Pre-calculus Acc BC	0491	F	8	The Greater Boston Proj Acc
2302	F	4	Calculus Hon	2478	S	2	★ Data Science
2234	F	4	Multivariable Calculus				

The mathematics program at Needham High School provides a comprehensive curriculum offering all students a rich and engaging experience. The main focus of the program is on teaching important and essential mathematics skills necessary for problem solving. The program's aim is to allow all students to reach their fullest potential as a

[Return to Table of Contents](#)



critical and logical thinker. The program's balanced approach works on developing skills necessary for success in today's society. Accelerated and Advanced Placement courses are designed for students who demand especially challenging academic experiences and who are comfortable working with advanced materials. Although the course content at each grade are consistent, the pace and depth are different at each level.

Students will learn and practice skills emphasized in the Massachusetts State Frameworks and the Common Core Curriculum. Additionally, throughout our curriculum, emphasis will be given to these eight Mathematical Practices identified in the Massachusetts State Frameworks and Common Core curriculum:

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Graphing calculators are an essential everyday tool for learning mathematics, so students in every mathematics course will need to have a graphing calculator. The NHS Mathematics Department requires that all of our students acquire a graphing calculator on their own. The Needham High School Mathematics department uses the TI-84, TI-84 silver edition and the TI-84 color edition.

A calculator purchased at the start of a student's high school career will be useful for class work, homework, and assessments in math and science classes through all four years of high school. Additionally, students will be allowed to use a graphing calculator on MCAS, SAT, ACT, and AP exams. The Mathematics Department has a limited supply of graphing calculators that we are able to loan out to students who request one (in person) at the start of the year.

Mathematics courses at NHS also make use of a variety of web-based and software applications where relevant to the curriculum. We aim to use these applications as tools for exploration as well as a means to assess students formally and informally.

---

### **MCAS Math Review:**

---

MCAS Math Review is for students who score within the Not Meeting Expectations or Partially Meeting Expectations range on the grade 8 MCAS exam. Students will be invited to enroll in this small group instructional program. The intent of the course is to help students bring their math up to an appropriate level. This course is taken in addition to a regular math course. The course relies on grant funds and will run provided adequate funding is received. The school will assign students to this course.

## **MATH COURSES**



---

**INTEGRATED MATH 9***2023**(4 credits)**Full Year**Grade 9*

---

Integrated Math 9 will take an integrated approach to the study of Algebra and Geometry, with an emphasis on Algebra. This course is aligned to the Massachusetts Curriculum Frameworks and will prepare students for the Grade 10 MCAS Mathematics Exam. This course supports all students as they develop and strengthen computational fluency and develop conceptual understanding of the connections between algebra and geometry. Students will learn through discovery and application, developing and reinforcing the skills and strategies needed to break down complex problems. Topics in this course include, yet are not limited to: number sense and operations, graphing linear functions, linear equations and their application, and coordinate geometry. Graphing calculators will be used throughout the course.

---

**MATH 9***2033, 2022, 2021**(4 credits)**Full Year**Grade 9*

---

**Prerequisite:** Math 8 or a course in Algebra 1.

Math 9 will formalize and extend the mathematics that students learned in Math 8. Students will study and contrast different types of functions including absolute value functions, piecewise-defined functions, quadratic functions, polynomial functions, exponential functions, logarithmic functions, and rational functions. In each unit, students will graph, analyze, solve problems, and apply these functions in a variety of settings. Beyond functions, students will further their understanding of laws of exponents, explore circles and other conic sections from algebraic and geometric perspectives. Students will also use descriptive statistics to summarize, represent, and interpret one-variable and two- variable data involving categorical or quantitative variables, with an emphasis on linear modeling and regression. Graphing calculators will be used throughout the course.

---

**MATHEMATICS 9IP***2042**(4 credits)**Full Year**Grade 9*

---

**Prerequisite:** Math 8 or a course in Algebra 1.

Students who choose this course must also sign up for Biology 9IP, English 9IP, and World History 9IP. The approach to interdisciplinary mathematics will deepen and extend the concepts from Mathematics 8 while encouraging collaboration and project-based learning. The scope of the course will mirror the Math 9 honors curriculum which centers around graphical, numerical, and algebraic representations of a variety of functions (linear, quadratic, polynomial, exponential, radical, and rational). This course draws explicit connections to the other 9IP subjects using a project-based learning approach to the interdisciplinary themes of Observations and Patterns, Systems, Power and Influence, Disease; and Revolutions. This course will also prepare students with the mathematical foundations for Geometry and Precalculus. Graphing calculators will be used throughout the course.

---



## ALGEBRA 2

2122, 2113 (4 credits)

Full Year

Grade 11

---

**Prerequisite:** Integrated Math 10 or a course in Algebra 1

Algebra 2 takes a graphing, algebraic and numerical approach to the study of functions. Students will study and contrast different types of functions including absolute value functions, piecewise-defined functions, quadratic functions, polynomial functions, exponential functions, logarithmic functions, and rational functions. In each unit, students will graph, analyze, solve problems, and apply these functions in a variety of settings. Beyond functions, students will further their understanding of laws of exponents to square and cube roots. Other concepts in the course may also include sequences and series and selected topics in probability and statistics. Graphing calculators will be used throughout the course.

---

## INTEGRATED MATH 10

2043 (4 credits)

Full Year

Grade 10

---

Integrated Math 10 will take an integrated approach to the study of Algebra and Geometry with an emphasis on Geometry. Math 10 Integrated blends the study of Algebra and Geometry and is a continuation of Math 9 Integrated. This course is aligned to the Massachusetts Curriculum Frameworks and will prepare students for the Grade 10 MCAS Mathematics Exam. Students will learn the skills they need to break down multistep problems and demonstrate their knowledge in various algebraic and geometric situations. Throughout the course, connections between algebra and geometry will be emphasized. Course topics include extending the number system; further study of linear relationships, descriptive statistics, area, volume, congruence, similarity, quadrilaterals, coordinate geometry and circles.

---

## GEOMETRY

2091, 2082, 2013 (4 credits)

Full Year

Grade 10

---

**Recommended Prerequisites:** Accelerated: A in Math 9 Accelerated. Honors: B to A in Math 9 Honors

Geometry uses both an investigative and a deductive reasoning approach to the study of plane, solid, and coordinate geometry. Students at all levels will study straight-line figures, circles, transformations, right triangle trigonometry, area, volume, similarity, and proof. The emphasis on proof will vary by level. Geometry software and web-based applications are used throughout the year to allow students to investigate geometric principles.

---

## ★ MATHEMATICS 10IP

2052 (4 credits)

Full Year

Grade 10

---

**Prerequisite:** Math 9IP, Math 9, or a course in Algebra II.

Students who choose this course must also sign up for Physics 10IP, English 10IP, and World and America 10IP. The approach to interdisciplinary mathematics will deepen and extend the concepts from Mathematics 9 while encouraging collaboration, presentation skills, and project-based learning. The scope of the course will mirror the



Geometry honors curriculum which centers around both an investigative and a deductive reasoning approach to the study of plane, solid, and coordinate geometry. Students will study straight-line figures, circles, transformations, right triangle trigonometry, area, volume, and similarity while making connections to the other 10IP courses using a project-based learning approach to the interdisciplinary themes including Making an Argument, Relationships & Change, and Force. The emphasis on proof will connect directly to the communication skills and terminology to the other 10 IP subjects This course will prepare students with the mathematical foundations for Precalculus. Graphing calculators will be used throughout the course.

---

**CONTEMPORARY APPLIED MATHEMATICS**

2134	(4 credits)	Full Year	Grades 10, 11, 12
------	-------------	-----------	-------------------

---

**Prerequisite:** Math 9 or Algebra II

Contemporary Applied Mathematics will allow students the opportunity to reinforce learning of core high-school-level mathematics for college and career readiness. Students will learn the application of mathematics to the social sciences in today’s world along with exploring topics in discrete mathematics. Throughout the course, all students will have the opportunity to strengthen their proficiency and fluency in all aspects of algebra. Students are required to have a graphing calculator as they will be used throughout the course

---

**PRECALCULUS**

2203, 2212	(4 credits)	Full Year	Grade 11
------------	-------------	-----------	----------

---

**Recommended Prerequisite:** B- to A in Math 9 or Algebra II and Geometry

Precalculus is an extension of topics introduced in Math 9 or Algebra II. The course is designed to strengthen and broaden students’ mathematical skills in order to prepare them for a course in calculus. Units of study in this course will allow students to develop their understanding of general concepts regarding functions. Students will also expand their knowledge of Trigonometry and be introduced to beginning topics of calculus such as limits. Students are required to have a graphing calculator as they will be used throughout the course.

---

**PRECALCULUS ACC--AB**

2221	(4 credits)	Full Year	Grade 11
------	-------------	-----------	----------

---

**Recommended Prerequisite:** B- to A Math 9 Accelerated and a B+ to A in Accelerated Geometry

Precalculus--AB is an accelerated course and includes units of study required to prepare students to take AP Calculus AB. Units of study in this course include analysis of various functions, discrete mathematics, conic sections, and an extensive study of trigonometry. Beginning topics in calculus are also covered including limits and an introduction to the derivative. Students are required to have a graphing calculator as they will be used throughout the course.

---

**PRECALCULUS ACC--BC**

2231	(4 credits)	Full Year	Grade 11
------	-------------	-----------	----------

---



---

**Recommended Prerequisite:** A in Math 9 Accelerated and an A in Geometry Accelerated and teacher recommendation.

Precalculus-BC is an accelerated course and includes units of study required to prepare students to take AP Calculus BC. Units of study in this course include analysis of functions, discrete mathematics, operations with complex numbers, analytic geometry, and an extensive study of trigonometry. Beginning topics in calculus are also covered including limits and techniques of differentiation. Students are required to have a graphing calculator as they will be used throughout the course.

---

#### **FUNDAMENTALS OF CALCULUS & STATISTICS**

2333

(4 credits)

Full Year

Grade 12

---

**Recommended Prerequisite:** B- to A in Precalculus CP or completion of Precalculus Honors.

Fundamentals of Calculus and Statistics focuses on introducing students to essential concepts of Calculus and introducing students to central topics in Statistics. Units of study in this course include limits, derivatives, anti-derivatives and their applications. This course will also serve as an introductory course to statistics, which provides students the opportunity to learn statistical concepts, explore statistical properties, and apply statistical techniques in a real-world setting. Students are required to have a graphing calculator as they will be used throughout the course.

---

#### **CALCULUS HON**

2302

(4 credits)

Full Year

Grade 12

---

**Recommended Prerequisite:** B- to A in Honors Precalculus, C- to A in Precalculus Accelerated AB or teacher recommendation.

Calculus is an honors course which focuses on the understanding of Calculus using numeric, algebraic and graphical approaches. Units from differential and integral calculus provide the main themes, however some time will be taken to master topics not adequately studied in precalculus. Included are topics of differentiation techniques, integration techniques and differential equations. Along with the theoretical aspects of Calculus, practical applications such as business, the behavioral sciences, the social sciences, Biology, Chemistry and Physics will be emphasized. Students are required to have a graphing calculator as they will be used throughout the course.

---

#### **AP CALCULUS AB**

2311

(4 credits)

Full Year

Grades 11, 12

---

**Prerequisite:** B- to A in Precalculus Accelerated AB, completion of Precalculus Accelerated BC or A in Precalculus Honors with teacher recommendation.\*Additional summer work may be required for students who have not taken Accelerated Pre- Calculus.



AP Calculus AB includes differential and integral calculus. The course closely follows the curriculum set by the College Board. Students are expected to take the AP-AB exam and may place out of or receive college credit for one semester of Calculus. Students are required to have a graphing calculator as they will be used throughout the course.

---

### AP CALCULUS BC

2321

(4 credits)

Full Year

Grades 11, 12

---

**Recommended Prerequisite:** B- to A in Precalculus Accelerated BC or A in Precalculus AB\* with teacher recommendation.

\*Additional summer work may be required for students who have not taken Accelerated Precalculus BC.

AP Calculus BC includes a rigorous and extensive treatment of Calculus and Analytic geometry. The course closely follows the curriculum set by the College Board and the content of the course parallels the year's course now given in many colleges and universities. Students are expected to take the AP-Calculus exam and may be able to place out of or receive college credit for a year of Calculus. Students are required to have a graphing calculator as they will be used throughout the course.

---

### STATISTICS HON

2332

(4 credits)

Full Year

Grade 12

---

**Recommended Prerequisite:** C- to A in Math 9 Accelerated, C+ to A in Algebra II Honors or Math 9 Honors or C+ to A in Precalculus.

Statistics is an honors course that serves as an introduction to data collection and data analysis. The course will expose students to statistical applications that they will likely see in other classes in high school and in future college courses. Specific topics include data collection and display, regression, probability, statistical inference, and an introduction to the most common distributions and statistical tests. Students are required to have a graphing calculator as they will be used throughout the course.

---

### AP STATISTICS

2331

(4 credits)

Full Year

Grade 12

---

**Recommended Prerequisite:** B+ to A in Math 9 Accelerated, A in Math 9 or Algebra II Honors, B+ to A in Precalculus Honors, B- to A in Precalculus Accelerated AB, C- to A in Precalculus Accelerated BC or teacher recommendation.

AP Statistics serves as an introduction to the major concepts and tools for collecting, analyzing and drawing conclusions from data. Students will be exposed to four broad conceptual themes: 1) Exploring Data: Observing patterns and departures from patterns; 2) Planning a Study: Deciding what and how to study; 3) Anticipating Patterns: Producing models using probability and simulation and 4) Statistical Inference: Confirming models. Students who successfully complete the course and the advanced placement examination may receive credit and/or advanced placement for a one-semester introductory college statistics course. Students completing this



course are expected to take the Advanced Placement examination. Students are required to have a graphing calculator as they will be used throughout the course.

---

### CRITICAL THINKING IN MATH

2475

(4 credits)

Full Year

Grade 12

---

**Prerequisite:** 3 years of high school math.

Critical Thinking in Math is an open-ended one-semester math course. It is designed to explore a wide variety of topics in mathematics with students who have completed three years of mathematics. This is a “hands-on” course, incorporating group projects using manipulatives, the calculator, and the computer.

---

### INTRODUCTION TO COMPUTER SCIENCE

2482

(4 credits)

Full Year

Grades 9, 10, 11, 12

---

**Recommended Prerequisite:** B- to A in Math 8.

Introduction to Computer Science uses the nationally recognized Exploring Computer Science (ECS) Curriculum. This semester course is designed to introduce students to the breadth of the computer science field through an exploration of engaging and accessible topics. Rather than focusing the entire course on learning particular software tools or programming languages, the course is designed to focus on the conceptual ideas of computing and help students understand why certain tools or languages might be utilized to solve particular problems. The goal of Exploring Computer Science is to develop in students computational practices of algorithm development, problem solving and programming within the context of problems that are relevant to the lives of today’s students. The course covers the first four units of the ECS curriculum: Unit 1 Human Interaction, Unit 2 Problem Solving, Unit 3 Web Design, and Unit 4 Introduction to Programming and requires the students to complete a capstone project.

---

### AP COMPUTER SCIENCE

2481

(4 credits)

Full Year

Grades 10, 11, 12

---

**Prerequisites:** Priority for enrollment will be given to students who have earned a B- to A in Introduction to Computer Science, Fundamentals of Computer Science or AP CS Principles. Students who have earned a B to A in Precalculus and receive Department Chair, or concurrent enrollment in Pre-calculus and Department Chair approval, will also be considered for enrollment.

AP Computer Science is comparable to a first year college course in computer science, and is designed to prepare the student for the AP Computer Science exam. The Java programming language will be used. The course will focus on algorithm development, using concepts such as classes, linked lists, stacks, recursion, queues, trees, searching, hashing, and inheritance. It is recommended that students have access to a computer (not ChromeBook) at home when taking this course. Priority for enrollment will be given to students in their junior and senior year and for students who have taken a Computer Science course at Needham High School.



## AP COMPUTER SCIENCE PRINCIPLES

2488

(4 credits)

Full Year

Grades 10, 11, 12

---

**Prerequisite:** Completion of Math 9. Additionally, having had the Introduction to Computer Science course is recommended or a comparable experience.

AP Computer Science Principles provides an introduction to programming and the basic principles that underlie the field of computer science. The programming portion of the course focuses on algorithms, abstraction, and the logic behind programming languages. The principles portion of the course focuses on how computers and the internet work and how technological advances are affecting society, culture, and the economy. The AP test consists of a multiple choice exam as well as a portfolio component. For the portfolio tasks, students design their own program and research and report on the benefits and potential drawbacks of a new technological advance. Priority for enrollment will be given to students in their junior and senior year and for students who have taken a Computer Science course at Needham High School. The course closely follows the curriculum set by the College Board.

---

## ROBOTICS I

2489

(2 credits)

Semester

Grades 10, 11, 12

---

**Recommended Prerequisite:** B to A in Math 9 or departmental permission. Introduction to Computer Science (2482) or equivalent.

Robotics I is a one-semester hands-on course that will introduce students to the engineering design process through robotics. Students will be assigned challenges that will be solved by building robots to perform given tasks. Students will learn about mechanical design, software design, and electrical components. Students will also learn about actuators and sensors, and how to effectively use them when building a robot. The equipment used for the course will remain in the classroom and as such students may need to complete some of their work after school. No programming or engineering background is required. When the schedule allows, students in Robotics 1 will collaborate with students in Introduction to Sculpture for an interdisciplinary Kinetic Sculpture Unit.

---

## PERSONAL FINANCE

2615

(2 credits)

Semester

Grades 9, 10, 11, 12

---

Personal Finance is designed to provide students with the confidence and knowledge to successfully navigate the financial decisions they will face as young adults after high school graduation. Topics include budgeting, banking, credit and loans, taxes, insurance, and investing. Assignments aim to prepare students to identify and evaluate trade offs in financial decisions such as choosing a college, car, or apartment. Students will also visit local businesses to enhance their learning through meetings with professionals. **Priority for enrollment will be given to students entering their junior or senior year.**

---

## PRINCIPLES OF ACCOUNTING

2613

(2 credits)

Semester

Grades 9, 10, 11, 12

---



**Recommended Prerequisite:** C to A in prior mathematics courses.

Principles of Accounting presents the principles of financial accounting and gives students insight into the language of business. Students will learn how businesses fund their operations and how business decisions impact the bottom line. Students will learn how to create journal entries and then how to build and interpret balance sheets, income statements, and statements of cash flows. Students will learn to evaluate and analyze critical ratios to better understand the health of businesses.

---

**INTEGRATED SENIOR STUDIES ACC: THE GREATER BOSTON PROJECT**

0491

(4 credits)

Full Year

Grade 12

---

This course explores how individuals and groups have worked throughout history to effect change in Greater Boston. Students will look at various historical moments through a variety of different lenses - population, government, economy, education, and arts & leisure - and consider how these have molded what Greater Boston has become today. The course of study is expressly interdisciplinary, as skills from the disciplines of English, history, and mathematics are brought together to explore Greater Boston's past and present. The course culminates in the Community Action Project, which entails collaborative exploration into and analysis of at least one area of study from the course; the project allows students to become agents of change as they work to develop, propose, present, and possibly implement their resolutions to existing real-world problems. This is a double block, eight credit course that fulfills the senior year English requirement.

---

**JUNIOR/SENIOR STEM CAPSTONE**

2490

(4 credits)

Full Year

Grades 11, 12

2496

(2 credits)

Semester

Grades 11, 12

---

Junior/Senior STEM Capstone is an independent Study course and is designed to give the self-motivated student or a small group of students the opportunity to work on a significant project of their design during school hours. Students will utilize the Da Vinci Workshop and will be expected to perform work beyond the school day. Options for learning range from scientific research and engineering projects, to work as part of scientific competitions and service learning community action projects, to other approved projects. In this course, students will write a proposal for their work, produce their results and present their work publicly in a manner agreed upon with the instructor. Prerequisites: Two teacher references that support the student's ability to work independently. Please Note: It is recommended/strongly encouraged that students do group projects. Any junior or senior is encouraged to take this course even if you are undecided about a project. Students can meet with the instructor to generate some project ideas.

---

**COMPUTER AIDED DESIGN AND MANUFACTURING**

2467

(2 credits)

Semester

Grades 11, 12

---

**Recommended Prerequisite:** B to A in Math 9 or Algebra 2 and a B to A in Physics.

Computer Aided Design and Manufacturing is a semester course in which students will learn the basics of Computer Aided Design using modern design software packages. Students will learn how to model ideas for parts



and assemblies on the computer similar to the way this is done in industry. Students will learn about additive and subtractive manufacturing processes, and practice creating their designs using equipment in the Da Vinci Workshop, such as a 3D printer, laser cutter, or milling machine. Students will be expected to create a culminating project. This course may require a materials fee.

---

**ENGINEERING DESIGN 101***2466**(2 credits)**Semester**Grade 10*

---

**Prerequisite:** Successful completion of Math 9 and current enrollment in Physics.

Engineering Design 101 is a semester course. This course is for students interested in learning more about engineering or are thinking about pursuing a career in Engineering or related areas. Students will learn about the tools, methods, materials, and processes used by engineers. This class will simulate the university engineering experience by giving students exposure with various aspects of the engineering profession. This course will proceed as a project based learning class involving several different engineering disciplines including: electrical, mechanical and structural. As students advance through the different units they will learn problem solving, critical thinking, design skills, 3D modeling as well as other skills that are vital to becoming a successful engineer.

---

**COMPUTER PROGRAMMING FUNDAMENTALS***2476**(2 credits)**Semester**Grades 10, 11, 12*

---

**Prerequisite:** Intro to Computer Science (2482) or Mathematics Department Chair approval.

Computer Programming Fundamentals is a semester course. Students will expand the computer science knowledge acquired in Introduction to Computer Science (course 2482) as well as develop or expand their computer programming skills. The course will use a contemporary programming language for students to grow their computer programming skills.

---

**MULTIVARIABLE CALCULUS***2234**(4 credits)**Full Year**Grade 12*

---

**Prerequisite:** Successful completion of AP Calculus (AB or BC). Students who have completed a course in AP Calculus AB wishing to take multivariable calculus will be required to complete assignments after the AP exam to prepare for the course.

Multivariable Calculus is a post-AP Calculus elective course that is designed for students who are interested in furthering their understanding of calculus topics and their applications. The course extends the concepts of calculus to the study of real-valued functions of more than one variable and to vector-valued functions of one or more variables. Topics include partial derivatives, gradients, optimization, multiple integrals, and vector fields. How do we maximize a function of many variables subject to a number of constraints? What does it mean to integrate a function of many variables, or a function with vector outputs, over a region of space? How does a local point-measure like density “add up” to give a function of a solid region of space, like mass? How do we find the volume of a k-dimensional prism in n-dimensional space? Learn the answers to all these questions and many



others in our full-year elective, Multivariable Mathematics.

---

 <b>DATA SCIENCE</b>			
2478	(2 credits)	Semester	Grades 9, 10, 11, 12

---

Exploring data and data science is increasingly becoming an important component in many fields of study including, mathematics and science along with business, humanities and the social sciences. Data Science is a semester elective course for all students who would like to explore our world through data. Students will work collaboratively and be introduced to the main ideas in data science through the use of such tools as Google Sheets, Python, Data Commons, and Tableau. Students will learn to be data explorers in project-based units, through which they will develop their understanding of data analysis, sampling, correlation/causation, bias and uncertainty, probability, modeling with data, making and evaluating data-based arguments, the power of society and more. As part of their work students will create a portfolio of their data science work.



## **MEDIA**

Num	Length	Credit	Course	Num	Length	Credit	Course
8456	S	2	Internship with Technology Help Desk	8498	S	2	Digital Game History & Design
8490	S	2	Television Communications 1	8411	F	4	AP Capstone Seminar
8495	S	2	Television Communications 2	8411	F	4	AP Capstone Research
8486	S	2	Television Production	8597	S	2	★ Social Media for Social Change
8596	S	2	★ Digital Media in Reporting				

---

### ★ **INTERNSHIP WITH TECHNOLOGY HELP DESK**

8456

(2 credits)

Semester

Grades 9, 10, 11, 12

---

Prerequisite: interview with a technology specialist.

This help desk model course will give students a background in technical support at Needham High School. Students will be introduced to common tech problems and develop solutions in the following areas: computer software, hardware, television production, audiovisual hardware and software, and web design. Technology Leaders will assist staff and students with troubleshooting and other supports as needed. When not assisting students and staff, tech leaders will work on their independent learning project of their choosing. They will also be actively contributing to an educational technology blog. Because of the nature of the experience it will be limited to 2 students per period. This opportunity is available for the full year or a semester.

---

### **TELEVISION COMMUNICATIONS 1**

8490

(2 credits)

Semester

Grades 9, 10, 11, 12

---

This course is designed to enable students to learn television production skills in a hands-on team environment. Students will learn to use video as an effective form of communication and look critically at television productions to critique the medium. This includes learning to operate equipment in the television studio, working as a member of a team and serving as a crew member for productions. Students will write scripts and direct individual and team projects. The course will provide an opportunity for you to create a variety of video productions (newscasts, public service announcements, advertisements, etc.), while developing the ability to form story ideas and effectively translate these ideas into videos using Final Cut. This course may also be used for two of the FPA graduation credits, provided the student's body of work in the course shows evidence of meeting at a satisfactory level the Creating, Responding and Performing Standards of the FPA Department.



## TELEVISION COMMUNICATIONS 2

8495

(2 credits)

Semester

Grades 9, 10, 11, 12

---

**Prerequisite:** Television Communication I

This course is designed to enhance television production skills. Students should have a background in how to use studio/field equipment, and will be focusing on increasing skills and creativity to design a more involved production. In addition to using Final Cut as an editing tool, you will learn to create graphics using Motion. The course will also focus on students creating a mini-documentary that adheres to television industry standard guidelines of digital citizenship and fair use. This course may also be used for two of the FPA graduation credits, provided the student's body of work in the course shows evidence of meeting at a satisfactory level the Creating, Responding and Performing Standards of the FPA Department.

---



### DIGITAL MEDIA IN REPORTING

8596

(2 credits)

Semester

Grades 9, 10, 11, 12

---

This course is designed for students who wish to examine and apply the ways in which news is reported. Students will learn journalistic techniques, how to critically examine news sources, further their own understanding of how to gather information, and tell stories through written words, podcasts, video, infographics, and social media. Students will also examine their ethical role as a creator throughout this course. This course may also be used for two of the FPA graduation credits, provided the student's body of work in the course shows evidence of meeting a satisfactory level of the Creating, Responding, and Performing Standards of the FPA Department.

---



### SOCIAL MEDIA FOR SOCIAL CHANGE

8597

(2 credits)

Semester

Grades 9, 10, 11, 12

---

This course is designed for students to explore and understand how to utilize social media platforms to promote social change. During this course we will discover how social media platforms develop and how they are maintained as technology changes. We will also be learning how to best communicate digitally using social media platforms. This is a hands-on class where students will be thinking critically and be creating a social media campaign for a topic of interest.

---

### DIGITAL GAME HISTORY & DESIGN

8498

(2 credits)

Semester

Grades 9, 10, 11, 12

---

This course is designed to give students an overview of digital games and game development. Students will learn about gaming history, game design, storytelling, and the psychological and sociological aspects of games and gaming. The technology behind consoles, computers, arcades, and mobile gaming platforms will be covered as well. Students will use this knowledge to examine trends to provide their own answer to the question, "What is the future of digital games and how do emerging technologies fit in?" The culminating project of this class will be

[Return to Table of Contents](#)



creating a choose your own adventure computer game using Twine and components of HTML, CSS, and Javascript. Prior videogame experience and coding is recommended but not required. Topics covered include, history of video game creation, basic video game design process, storytelling and world building, gaming technology, sociology, and trends, student created games.

---

**TELEVISION PRODUCTION***8486**(2 credits)**Semester**Grades 9, 10, 11, 12*

---

**Prerequisite:** Television Communication I

This course is designed to enhance television production skills in a real world setting. Students should have a background in how to use studio equipment, and will be focusing on increasing skills and creativity to design a more involved production. Students will act as a high school television production house, creating television episodes to air on The Needham Channel. Students will investigate series television and create their own ideas for an ongoing series. Students will pitch their concepts to the rest of the class and a show will be selected for production. After pitching a show idea to the teacher and to a representative from the Needham Channel, students will work to produce a total of six 30-minute episodes. The class will operate under professional procedures to get their shows ready for air at The Needham Channel.

---

**AP CAPSTONE SEMINAR***8411**(4 credits)**Full Year**Grades 10, 11*

---

**Prerequisites:** teacher recommendation, preference given to sophomores and juniors.

AP Seminar is a foundational course that engages students in cross-curricular conversations that explore the complexities of academic and real-world issues. Using an inquiry framework, students practice analyzing and interpreting articles, research studies, literary and philosophical texts, speeches, broadcasts, personal accounts, and artistic works. Students learn to synthesize information from multiple sources, develop their own perspectives in research-based written essays, and design and deliver oral and visual presentations, both individually and as part of a team. Ultimately, the course aims to equip students with the power to analyze and evaluate information with accuracy and precision in order to craft and communicate evidence-based arguments. This course is year one of the two-year AP Capstone Diploma Program and students are encouraged to enroll in AP Research at the completion of this course.

---

**AP CAPSTONE RESEARCH***8412**(4 credits)**Full Year**Grades 11, 12*

---

**Prerequisites:** successful completion of AP Seminar.

AP Research allows students to deeply explore an academic topic, problem, or issue of individual interest. Through this exploration, students design, plan, and conduct a year-long, research-based investigation to address a research question. In the AP Research course, students further refine their skills acquired in the AP Seminar including research methodology, ethical research practices, and accessing, analyzing, and synthesizing information



as they address a research question. Students document their processes and curate the artifacts of the development of their scholarly work in a portfolio. The course culminates in an academic paper of 4000–5000 words, accompanied by a performance or exhibition of product where applicable, and a presentation with an oral defense. This course is year two of the two-year AP Capstone Diploma Program.

## **MEDIA FACILITIES**

Students and staff have many resources available, both physical and virtual. Teachers schedule their classes to work on projects in the Library, Multimedia Lab (409), Television Studio, or two computer labs. Students may work independently in the Library before and after school or during study periods. The NHS Library web page offers many tools for research, including the web catalog, databases, citation help, and pathfinders for class projects. NHS has a wireless network, available to students who have signed the Responsible Use Policy. Please refer to the Student Handbook for more information.



## SCIENCE

Num	Length	Credit	Course	Num	Length	Credit	Course
3001	F	4	Biology Acc	3502	F	4	Modern Physics Hon
3012	F	4	Biology Hon	3542	F	4	Experiencing Chemistry Hon
3022	F	4	Biology 9IP	3531	F	4	Environmental Science Acc
3023	F	4	Biology	3532	F	4	Environmental Science Hon
3101	F	4	Physics Acc	3533	F	4	Environmental Science CP
3112	F	4	Physics Hon	3642	F	4	Marine Science Hon
3032	F	4	★ Physics 10IP	3701	F	8	AP Biology
3123	F	4	Physics	3801	F	8	AP Physics
3201	F	4	Chemistry Acc	3901	F	8	AP Chemistry
3212	F	4	Chemistry Hon	2490	F	4	Junior/Senior STEM Capstone
3223	F	4	Chemistry	2496	S	2	Junior/Senior STEM Capstone
3401	F	4	Physiology Acc	3610	S	2	Introduction to Astronomy
3412	F	4	Physiology Hon	3608	S	2	★ BioTech Promoters
3665	F	4	★ Geology	3609	S	2	★ Combating Digital Misinformation

The aim of the Science program is to ensure students develop a scientific perspective with which to observe, analyze, and make decisions about the world around them. In order to realize this goal, the department offers a carefully sequenced curriculum that focuses on mastery of disciplinary core ideas and the application of science practices. Science offerings in grades 9, 10, and 11 provide foundational knowledge in Biology, Physics, and Chemistry, while elective offerings provide a wide range of opportunities for students to integrate and deepen their understanding of concepts within and across the major disciplines. A range of levels allow teachers to offer consistent course content with differentiated pace, depth, and levels of support. The essential role of collaboration within the STEM fields is reflected in both the teaching approach and student learning expectations within courses throughout the department. Concepts and skills in each course align with the [Massachusetts Science and Technology/Engineering Standards \(https://www.doe.mass.edu/frameworks/scitech/2016-04.pdf\)](https://www.doe.mass.edu/frameworks/scitech/2016-04.pdf). Additionally throughout our curriculum, the eight Science Practices identified in the Massachusetts State Frameworks are emphasized:



1. Asking questions and defining problems
2. Developing and using models
3. Planning and carrying out investigations
4. Analyzing and interpreting data
5. Using mathematics and computational thinking
6. Constructing explanations and designing solutions
7. Engaging in an argument from evidence
8. Obtaining, evaluating, and communicating information

Twelve credits, 3 years, of science are required for graduation.

**Notice to Parents of Students Taking Biology or Physiology:** Biology and Physiology courses include issues of human sexuality.

*Under Massachusetts law and Needham School Committee policy, you may exempt your child from any portion of the curriculum that involves human sexual education or human sexuality issues. To receive an exemption, simply send a letter addressed to your building principal requesting an exemption for your child. Any student who is exempted will be excused from those lessons that cover topics on human sexuality and will be provided with an alternative assignment. A student who is exempted from this portion of the curriculum will not be penalized in any way.*

---

**BIOLOGY: ACCELERATED, HONORS, COLLEGE PREP**

3001, 3012, 3023	(4 credits)	Full Year	Grade 9
------------------	-------------	-----------	---------

---

The Biology curriculum focuses on topics related to living organisms including structures and processes from a molecular level to the level of a complete organism, ecosystem dynamics and interactions, inheritance and variation of traits, and unity and diversity of biological evolution. The curriculum is aligned with the Massachusetts High School Life standards and practices. Detailed descriptions of the learning standards can be found at <http://www.doe.mass.edu/stem/standards/StandardsDraft.pdf>.

Thematic links are used to introduce and weave the concepts of Biology together. These themes include: Homeostasis, Organization, Unity and Diversity, Structure meets Function, and Transfer of Energy and Matter. The curriculum incorporates a significant emphasis on the practices of science including an introduction to laboratory equipment, procedures, and science writing skills. All levels of the ninth grade curriculum serve to prep our students for the MCAS exam in June while incorporating real world applications of Biological concepts.

---

**BIOLOGY 9IP**

3022	(4 credits)	Full Year	Grade 9
------	-------------	-----------	---------

[Return to Table of Contents](#)



---

Students who choose this course must also sign up for English 9IP, Math 9IP, and World History 9IP. The biology curriculum focuses on topics related to living organisms, including structures and processes from a molecular level to the level of a complete organism, ecosystem dynamics and interactions, inheritance and variation of traits, and unity and diversity of biological evolution. Biology 9IP will align with the content taught in an honors biology course and will prepare students for the MCAS exam in June. The real world applications and science practices will be taught by making explicit connections to the other 9IP subjects using a project-based learning approach to the interdisciplinary themes of Observations and Patterns, Systems, Power and Influence, Disease; and Revolutions. Students will be analyzing data from various sources and will learn to develop their communication and collaboration skills that cross disciplines. The curriculum will also emphasize the practices of science, including an introduction to laboratory equipment, procedures, and science writing skills.

---

#### **PHYSICS: ACCELERATED, HONORS, COLLEGE PREP**

*3101, 3112, 3123*

*(4 credits)*

*Full Year*

*Grade 10*

---

Physics is the study of the behavior of matter and energy. The physics program uses “hands on” science practices to introduce and support the physical laws of nature including motion, forces, energy, momentum, sound, light, electricity, magnetism, and atomic structure. Understanding of concepts is reinforced through modelling of physical and natural phenomenon, investigations and problem solving. Using 21st century technology and equipment, students will gather and analyze data related to real world situations including sports, technology, and the environment. While mathematical skills are the foundation of application within the physics program, students work to utilize, discuss, and explain physical concepts and problems with scientific fluency . The accelerated level uses algebra and trigonometry in multi-step problem solving, the honors level uses algebra to develop problem solving skills, and the college prep level will utilize a problem-based curriculum focussed on developing 21st century skills.

---

#### **PHYSICS 10IP:**

*3032*

*(4 credits)*

*Full Year*

*Grade 10*

---

Students who choose this course must also sign up for English 10IP, Math 10IP, and World and America 10IP. Physics is the study of the behavior of matter and energy, the physical laws of nature including motion, forces, energy, momentum, sound, light, electricity, magnetism, and atomic structure. In the 10IP program, understanding of concepts is reinforced through hands-on and project-based activities focused on modelling, investigations and problem solving while making explicit connections to the content and skills of the other 10IP courses and real world situations. Students work to utilize, discuss, and explain physical concepts and problems with scientific fluency through the interdisciplinary themes of Making an Argument, Relationships & Change, and Force, with a focus on skills around analyzing data, collaboration, presentations, and communication.

---

#### **CHEMISTRY: ACCELERATED, HONORS, COLLEGE PREP**

*3201, 3212, 3223*

*(4 credits)*

*Full Year*

*Grade 11*

---

[Return to Table of Contents](#)



---

**Suggested Math Prerequisites:**

- **Chemistry Accelerated (3201)** - Students should be simultaneously enrolled in either Accelerated or Honors Pre-Calculus and have earned either an A in Honors Algebra II or a C or higher in Accelerated Algebra II.
- **Chemistry Honors (3212)** - Students should be simultaneously enrolled in Honors Pre-Calculus and have earned a C or higher in Hon Algebra II.
- **Chemistry College Prep (3223)** - Students should be simultaneously enrolled in Algebra II or higher.

Chemistry examines the structure of matter, its properties, and the changes it undergoes. The major topics of chemistry include atomic structure, reactivity and bonding, energy in chemical processes, as well as the physical characteristics of chemicals. These topics are related to the essential themes of conservation, structure and function, stability and change, equilibrium, and the scientific method. Through quantitative and qualitative analysis, students will acquire an understanding of chemistry and use its concepts to explain phenomena seen in and out of the classroom. The curriculum further develops the practices of science by providing opportunities for students to design experiments to investigate chemical phenomena and scientific claims, support their findings with data, and analyze the impact of error on their conclusions.

## SCIENCE ELECTIVES -- SEMESTER

---

### INTRODUCTION TO ASTRONOMY

3601

(2 credits)

Semester

Grades 11, 12

---

This course highlights an introductory survey of the universe. Some of the topics covered include the solar system (the earth, moon, planets and their motion); comets, meteors, eclipses and tides; the evolution of stars, the formation of red giants, black holes, pulsars, etc.; galaxies, cosmology and extraterrestrial life. Telescopic observations on certain evenings will be available but not mandatory.

---



### COMBATING DIGITAL MISINFORMATION

3609

(2 credits)

Semester

Grades 9, 10, 11, 12

---

We live in an era of increasing digital complexity. Often, your choice of social media platform and the corresponding proprietary algorithms play a crucial role in determining multiple facets of the kinds and sources of information you are exposed to online. This has become increasingly apparent from the polar opposite reactions to the public health crisis brought on by the pandemic - with choices at times influenced by media consumption. What scientific information can you trust online? How do you make appropriate choices about what sources to believe? This course will explore the intersection of science and social media, with particular attention paid to recognizing misinformation presented as fact on various digital platforms. Students will be able to develop skills to identify trusted sources of scientific information and use those trusted sources to evaluate potentially misleading statements online.

---





## BIOTECH PROMOTERS

3608

(2 credits)

Semester

Grades 11, 12

**Prerequisites:** Successful completion of Biology

The purpose of this course is to prepare students to lead and engage in discussions about current biotechnology methods and their application in the world. The goal of the course is to build community understanding around the practices of science with a focus in biotechnology. The course will provide the student with an opportunity to explore several hands-on laboratory protocols. Throughout the course, students will review the fundamentals of cell and molecular biology and then use this knowledge to understand the science involved in the techniques. In addition, this course is designed to be interdisciplinary, integrating science with Portrait of a Graduate: Communication and Collaboration skills. At the end of the course, students will demonstrate their understanding of concepts by presenting public laboratory experiences for community audiences.

## SCIENCE ELECTIVES -- FULL YEAR

### PHYSIOLOGY ACC: ACCELERATED AND HONORS

3401,3412

(4 credits)

Full Year

Grades 11, 12

The accelerated and honors A&P courses investigate the major concepts and ideas of human physiology. Major body systems are studied as they relate to the themes of Structure meets Function, Homeostasis, Communication and Plasticity. Understanding is built by comparing and analyzing the effects of disorders on the body. These courses are experimentally based with a strong laboratory component that incorporate aspects of Biology, Physics, Chemistry and statistical techniques. Both levels work to prepare students for the independent nature of college academics. Students will design and implement experiments to study essential structures and functions of the body. The class is largely built upon written expression of knowledge, but includes presentations building oration skills. Students are expected to work independently outside of class and within groups inside class to actively unravel the mysteries of the human body as applied to real world situations. At the accelerated level, this course is designed to mimic a college level physiology course and prepare students for the rigors of self directed study. At the honors level, this course is designed to build the foundation of skills to succeed at college level courses.

### MODERN PHYSICS HON

3502

(4 credits)

Full Year

Grades 11, 12

**Prerequisite:** Students must have earned a passing grade in 10th grade physics to enroll in this course.

A course designed to introduce students to the major developments in physics over the past 150 years. The course covers the development of the photon model of light, special and general relativity, the fundamentals of quantum mechanics, nuclear physics, particle physics and cosmology. The course will emphasize an understanding of the experiments that shaped these new developments. Students will be



doing hands on lab work, article analysis, problem solving, and presentations in addition to the standard lectures on the topics.

---

**EXPERIENCING CHEMISTRY HON****3542****(4 credits)****Full Year****Grades 11, 12**

---

This course takes the basic concepts learned in chemistry and biology and applies them to real-world situations such as food chemistry and nutrition, forensic chemistry, biochemistry, materials chemistry, and environmental chemistry. The course is designed to engage students in the hands-on exploration of career-relevant concepts and practices such as crime scene investigation, process development, experimental design, and hazardous and nuclear waste management. To follow up on specific interests, students will also have the opportunity to plan field trips and invite guest speakers to gain a firsthand perspective of working and living in the scientific community.

---

**ENVIRONMENTAL SCIENCE****xxxx****(4 credits)****Full Year****Grades 11, 12**

---

**Suggested Math Prerequisites:**

**Accelerated Level (3531):** Advanced math skills (strong foundation from accelerated or honors pre-calculus)

**Honors Level (3532):** Proficient math skills (basic understanding of pre-calculus)

**College Preparatory Level (3533):** Comfortable with algebraic manipulations

This interdisciplinary course will examine the relationship between humans and the environment through significant field work. Students will explore topics of ecology, natural resources, populations, forestry, fisheries, climatology, environmental health & toxicology, environmental engineering & modeling, production & consumption of energy, and environmental policy, law, & planning. Students will be involved in a variety of citizen science initiatives and green technologies with a focus on local impact. Students will be expected to collect data using environmental field techniques, interpret this data, and propose solutions to environmental problems indicated by data. A major focus of this course is to increase students' scientific literacy to evaluate the validity and accuracy of information from media and other sources through the investigation of case studies.

---

**MARINE SCIENCE HON****3642****(4 credits)****Full Year****Grades 11, 12**

---

Marine Science is a full year course integrating the biological and physical aspects of ocean study (a holistic approach to understanding and experiencing the marine environment). Topics include marine food chains and ecosystems, the physical factors that influence productivity in the oceans, plankton, marine plants and animals (invertebrates and vertebrates), sea water, waves, tides, ocean currents and circulation, and the geology of the ocean bottoms. Also included will be a consideration of the biological



and physical resources of the oceans as they relate to humans. This course will be laboratory oriented and will include several field trips as an important means of appreciating the marine environment.

---

★ **GEOLOGY**

3665

(4 credits)

Full Year

Grades 11, 12

---

Geology is a full year interdisciplinary course that introduces students to the fundamental principles and applications of earth science. This course has two overarching themes - (1) the physical structure and chemical makeup of earth's materials and (2) the dynamic forces and chemical processes that have shaped them over the past 4.6 billion years. Students will explore the idea of geologic time and change, investigating phenomena such as plate tectonics, volcanism, glaciation, weathering and erosion, lithification and fossilization, and coastal evolution. Students will analyze evidence to draw conclusions about earth's inception, geologic history and past climate. In addition to collecting and analyzing their own data in the lab, students will learn about various mechanisms and approaches to geologic data collection and make connections to their real-world applications. Some coursework will take place in the field to observe geologic features and landscape in situ.

---

**JUNIOR/SENIOR STEM CAPSTONE**

2490

(4 credits)

Full Year

Grades 11, 12

2496

(2 credits)

Semester

Grades 11, 12

---

Junior/Senior STEM Capstone is an Independent Study course and is designed to give the self-motivated student or a small group of students the opportunity to work on a significant project of their design during school hours. Students will utilize the Da Vinci Workshop and will be expected to perform work beyond the school day. Options for learning range from scientific research and engineering projects, to work as part of scientific competitions and service learning community action projects, to other approved projects. In this course, students will write a proposal for their work, produce their results and present their work publicly in a manner agreed upon with the instructor. Prerequisites: Two teacher references that support the student's ability to work independently. Please Note: It is recommended/strongly encouraged that students do group projects. Any junior or senior is encouraged to take this course even if you are undecided about a project. Students can meet with the instructor to generate some project ideas.

## ADVANCED PLACEMENT COURSES

---

**AP BIOLOGY**

3701

(8 credits)

Full Year

Grades 11, 12

---

This is a second year course in biology that is the equivalent of a two semester introductory course taught at most colleges and universities. This course uses a College Board approved syllabus and prepares students for the May AP Exam. The content is taught thematically with unit topics all incorporating the



following Big Ideas: Evolution, Cellular Processes, Genetics and Information Transfer, Interactions. The Science Practices are an essential part of the course. Students continue to design experiments to answer questions and continue their use of data analysis by incorporating various statistical measures and using spreadsheets to analyze large data sets. The connections between Science, Technology and Society are also explored as learn to read and discuss journal articles and relate current research to the topics learned throughout the course. AP Biology is an 8 credit course and will meet 10 periods per cycle.

---

### **AP PHYSICS**

*3801*

*(8 credits)*

*Full Year*

*Grades 11, 12*

---

This is a second year course in physics. This course is designed to prepare students for the Advanced Placement Physics C exam. Mechanics, electricity, and magnetism are covered in great depth, utilizing calculus wherever appropriate. This is an intensive course comparable to a college course for students majoring in the physical sciences or engineering. Students who have completed calculus or are currently enrolled in the calculus program may elect Physics AP. AP Physics is an 8 credit course and will meet 10 periods per cycle.

---

### **AP CHEMISTRY**

*3901*

*(4 credits)*

*Full Year*

*Grades 11, 12*

---

This is a second year course in chemistry. AP Chemistry is the equivalent of the introductory chemistry course taught at most colleges and universities. This course will prepare the student for the Advanced Placement Chemistry Exam. The laboratory section of this course is rigorous, and independent laboratory experiments will be stressed. It is assumed that students have retained a firm understanding of what they learned in their first year of chemistry, and group work, focused around complex or applied chemical concepts illustrates the course's style. AP Chemistry is an 8-credit course and will meet 10 periods per cycle.



## **HISTORY AND SOCIAL SCIENCES**

Num	Length	Credit	Course	Num	Length	Credit	Course
4101	F	4	World History Acc	4212	F	4	The World Since 1945 Hon
4102	F	4	World History Hon	4402	F	4	American Legal System Hon
	F	4	World History 9IP	4412	F	4	Economics Hon
4103	F	4	World History	4421	F	4	AP Psychology
4201	F	4	The World and America Acc	4422	F	4	Psychology and Sociology Hon
4202	F	4	The World and America Hon	4423	F	4	Psychology and Sociology
4203	F	4	The World and America	4462	F	4	African American Studies & Contemporary Issues Hon
4122	F	4	★ The World and America 10IP	4441	F	4	AP United States Government
4301	F	4	AP U.S. History	4445	F	4	Debate and Argument
4302	F	4	United States History Hon	0491	F	8	The Greater Boston Project
4303	F	4	United States History	4214	S	2	History, Politics, and Popular Music
4311	F	4	United States History Acc				

The aim of the History and Social Sciences program is to prepare students for intelligent participation in our democratic society. In order to realize that goal, the department offers a carefully sequenced curriculum that provides knowledge and skills in history, geography, political science, psychology, sociology, and economics. Students are encouraged to take a two year World History sequence and one year of United States History is required for graduation. History course offerings in grades 9, 10, and 11 examine the heritage of major cultures and societies, and the development of the American identity. The curriculum investigates the responsibilities of citizenship in American society in an era of increasing globalization. Assignments in all courses work to develop analytical thinking and writing skills, research, and verbal presentation skills. The electives program allows students to study in greater depth a variety of courses in history and the social sciences.

### **GRADE NINE**

---

#### **WORLD HISTORY, MIDDLE AGES TO NINETEENTH CENTURY: ACCELERATED, HONORS, COLLEGE PREP**

4101, 4102, 4103

(4 credits)

Full Year

Grade 9

---

The purpose of this course is to have students learn about the historical development of the major cultures and

[Return to Table of Contents](#)



societies from the Middle Ages to the nineteenth century. The emphasis is placed upon both European and non-Western societies. Geographical knowledge of our world, historical analysis and comparison of different cultures, and political and economic development of societies that have contributed to our modern global community, are areas of focus.

---

## **WORLD HISTORY 9IP**

*4112*

*(4 credits)*

*Full Year*

*Grade 9*

---

Students who choose this course must also sign up for Biology 9IP, English 9IP, and Mathematics 9IP. Interdisciplinary World History fits within the sequenced curriculum of the Social Studies department to prepare students for intelligent participation in our democratic society while developing essential collaboration and communication skills. Students will learn about the historical development of the major cultures and societies from the Middle Ages to the nineteenth century. Assignments in all courses work to develop analytical thinking, writing, research, and verbal presentation skills. This course also draws explicit connections to the other 9IP subjects using a project-based learning approach to the interdisciplinary themes of Observations and Patterns, Systems, Power and Influence, Disease; and Revolutions. Students will develop geographical knowledge, historical analysis and research, and connections to the modern world in an engaging project-based approach.

## **GRADE TEN**

---

### **THE WORLD AND AMERICA: ACCELERATED, HONORS, COLLEGE PREP**

*4201, 4202, 4203*

*(4 credits)*

*Full Year*

*Grade 10*

---

This course examines key themes in World and American History from the Age of Revolution until the present day. Themes studied include Imperialism, the World Wars, the rise of communism and fascism, the Cold War, Post-Imperialism, and modern China. As well as looking at the main events, the course analyzes the US perspective and America's role in the world. In addition, the course includes a unit, Facing History and Ourselves, that asks students to study the Holocaust and genocide and connect themes from history to the world today. Current events and geography are integrated throughout. The course places emphasis on research, debate and presentation skills and analytical writing. Accelerated students have the opportunity to participate in National History Day or an alternative long-term project.



### **THE WORLD AND AMERICA 10IP**

*4122*

*(4 credits)*

*Full Year*

*Grade 10*

---

Students who choose this course must also sign up for Physics 10IP, English 10IP, and Mathematics 10IP. Interdisciplinary World and America fits within the sequenced curriculum of the Social Studies department to prepare students for intelligent participation in our democratic society while developing essential collaboration, communication, and presentation skills. Students will learn key themes in World and American History from the Age of Revolution until the present day. Themes studied include Imperialism, the World Wars, the rise of communism



and fascism, the Cold War, Post-Imperialism, and modern China. As well as looking at the main events, the course analyzes the US perspective and America’s role in the world. This course also draws explicit connections to the other 10IP subjects using a project-based learning approach to the interdisciplinary themes including Making an Argument, Relationships & Change, and Force, with a focus on skills of research, debate and presentation, analytical writing, and presentations. In addition, the course includes a unit, Facing History and Ourselves, that asks students to study the Holocaust and genocide and connect themes from history to the world today.

## GRADE ELEVEN

---

### AP U.S. HISTORY

4301	(4 credits)	Full Year	Grade 11
------	-------------	-----------	----------

---

This course provides a thorough survey of America from the period of sectionalism to contemporary times. Supplementary readings and research papers will be required. In addition, the course is designed to prepare students for the Advanced Placement Examination in United States History.

---

### ACCELERATED UNITED STATES HISTORY

4311	(4 credits)	Full Year	Grade 11
------	-------------	-----------	----------

---

Accelerated United States History is an upper level American studies class that is similar to the AP course in level of difficulty but different in terms of its focus and methodology. The course is focused on encouraging students to think about and discuss many of the large scale issues and themes that frame American history, including the tension between majority rule and minority rights, the role of individuals and groups in making history, the role of government in American society, the challenges of a multicultural society, and the effects of economic growth and technological development on everyday Americans. Supplementary readings and research papers will be required on a similar level to those in AP US History.

---

### UNITED STATES HISTORY: HONORS, COLLEGE PREP

4302, 4303	(4 credits)	Full Year	Grade 11
------------	-------------	-----------	----------

---

This course surveys American history and civilizations with an emphasis on the nineteenth century through the twentieth century. The focus will include developing skills in the areas of historical inquiry and critical thinking, primary source and data analyses, historical research and writing, and oral expression.

## ELECTIVES

---

### DEBATE AND ARGUMENT

4445	(4 credits)	Full Year	Grades 9, 10, 11, 12
------	-------------	-----------	----------------------

---

Debate and Argument enables students to develop speaking, listening, critical thinking, and research skills. Through participation in several distinct debate formats, students will work towards being able to understand,



analyze, and explain the controversies underlying a wide variety of subjects. The crucial role of debate and critical thinking in both a democratic society and one's personal life will be emphasized. Several social, political, and philosophical topics will also be examined in the course. No prior speech or debate experience is necessary.

---

**THE AMERICAN LEGAL SYSTEM HON***4402**(4 credits)**Full Year**Grades 11, 12*

---

This course will examine the practical and theoretical aspects of law in American society. Students will investigate the many facets of our legal system including criminal, and civil. In addition law enforcement, incarceration, and the American courts will be examined. A variety of experiences will be provided to students. Among those are mock trials, guest speakers, court visits and a visit to the Massachusetts Correctional Institute. The main objective of the course is to acquaint the student with an understanding of the rights and responsibilities of citizens in a democratic society.

---

**ECONOMICS HONORS***4412**(4 credits)**Full Year**Grades 11, 12*

---

Economics is the study of how individuals and societies decide how to use scarce resources in order to satisfy their unlimited wants. The course focuses upon concepts and principles that include supply and demand, marketing, money and banking, the stock market, fiscal and monetary policies, as well as international trade. Comparing different types of economic systems is part of this introductory course. Economics should assist students in becoming informed decision makers through economic analysis of data, issues, trends and theories.

---

**PSYCHOLOGY AND SOCIOLOGY: HONORS, COLLEGE PREP***4422, 4423**(4 credits)**Full Year**Grades 11, 12*

---

The focus of this course will be upon the various theories of human behavior, the study of the brain, the senses and perception, motivation and emotion, the factors that influence personality development, the dynamics of group behavior, the unique nature of adolescence, gender differences, scientific methodology, and the historical significance of psychology. Field experiences, guest speakers and simulations will augment instruction.

---

**AFRICAN AMERICAN STUDIES AND CONTEMPORARY ISSUES HON***4462**(4 credits)**Full Year**Grades 11, 12*

---

This course will serve as an introduction to the study of African American life from the end of the Civil War to the present. Using a chronological framework, students will explore a wide range of themes involving politics, culture, and the arts, while emphasizing the dynamic role played by African Americans in U.S. culture. Students will engage in lectures, debates, research projects and discussions, examining the African American experience through documents, music, film, and digital resources.

---

**THE WORLD SINCE 1945 HON***4212**(4 credits)**Full Year**Grades 11, 12*



This course examines cultural, political, economic, military, and social developments throughout the World since the end of World War II. The aim of the course is to enhance cultural literacy and familiarize students with the world's most significant issues and regions in recent history. Political issues highlighted include the Arab-Israeli conflict, India and China as emerging world powers, contemporary mechanisms for the prevention of genocide, and the status of democracy around the globe. Students are expected to be well versed in current events.

---

### **HISTORY, POLITICS, AND POPULAR MUSIC**

4214

(2 credits)

*Semester*

*Grades 11, 12*

---

How does your favorite music reflect the society in which it was created? How can pop music help you better understand our country's past and present? How do we use the act of listening to music as a lens through which we can understand issues of race, class, and gender in our nation's history? How does analyzing music help us better understand ourselves? To answer these questions and others, this course will analyze how youth culture (especially popular music) reflects, critiques, and influences American politics and society. The course is interdisciplinary and will be taught by one English teacher and one History teacher. Class work will be project-based and will allow all students to bring their own passions to the course; the music you listen to today will be a crucial part of this class!

---

### **AP PSYCHOLOGY**

4421

(4 credits)

*Full Year*

*Grade 12*

---

This fast paced course is designed to introduce students to the systematic and scientific study of behavior and mental processes. Units include: research methods and ethics, intelligence, the physiological basis of behavior, motivation and emotion, learning theory, memory and thinking, sensation and perception, stress and frustration, social psychology, human growth and development, personality theory, abnormal psychology, and psychotherapy. The varied format uses a college level text, outside reading books, case study analyses, class discussion, experiments, demonstrations and labs. Activities are offered for each student to explore his/her own self-awareness. Additionally there is a small amount of required summer reading. Students are expected to contribute to class discussions and complete a project each term. Students will also design and conduct original research putting theory into practice. Students who elect to enroll should be highly motivated independent learners.

---

### **AP UNITED STATES GOVERNMENT**

4441

(4 credits)

*Full Year*

*Grade 12*

---

**Prerequisite:** A full year of US History.

United States Government is designed to give students a critical perspective on government and politics in the United States. Students enrolled in this course will investigate the constitution, federalism, civil rights and civil liberties, the presidency, congress, and political interest groups. The course also examines U.S. political culture and its evolution, as well as public policy. This course's main focus is U.S. politics since 1980, with a special focus on political themes played out through current events and elections. Students are encouraged to develop their own theories through readings, role plays, discussions and term projects.



---

**INTEGRATED SENIOR STUDIES ACCELERATED: THE GREATER BOSTON PROJECT***0491**(4 credits)**Full Year**Grade 12*

---

This course explores how individuals and groups have worked throughout history to effect change in Greater Boston. Students will look at various historical moments through a variety of different lenses - population, government, economy, education, and arts & leisure - and consider how these have molded what Greater Boston has become today. The course of study is expressly interdisciplinary, as skills from the disciplines of English, history, and mathematics are brought together to explore Greater Boston's past and present. The course culminates in the Community Action Project, which entails collaborative exploration into and analysis of at least one area of study from the course; the project allows students to become agents of change as they work to develop, propose, present, and possibly implement their resolutions to existing real-world problems. **This is a double block, eight credit course that fulfills the senior year English requirement.**



## WELLNESS (HEALTH / PHYSICAL EDUCATION)

Num	Length	Credit	Course
8605	S	2	Wellness 9
8615	S	2	Wellness 10
8625	S	2	Wellness 11
8635	S	2	Wellness 12

All high school students are required to take one semester of Wellness (Health/Physical Education) each year while at Needham High School. Students must pass all (4) years of Wellness (8 credits) in order to meet their requirements for graduation. Students should sign up for the Wellness number that pertains to their grade level (as listed above). Sophomore and senior classes will meet during the fall semester while 9th grade and 11th grade classes will meet during the spring semester.

**Failure Policies:** A student who fails to successfully complete a required health/physical education course in any given semester, and/ or is dropped from a course, must make up the deficiency prior to the receipt of a diploma from Needham High School. It is expected that students will make up their Wellness requirement by repeating the course they have failed or by attending a summer school program approved by the Principal. Participation in additional semesters of Wellness can be done in extreme situations but only with the approval of the Director of the Wellness Department. Students should make up courses as soon as possible after failing a course.

**Notice to Parents of students in grades 9 & 11 about Sex Education:** Health Classes in grades 9 and 11 include issues of human sexuality.

- During the second semester of **9th grade**, sexuality education will be taught within a larger unit called “9th Grade Health”. The overall program is designed to teach students to make responsible decisions about alcohol and other drugs, tobacco, and sexual behaviors. The sexuality component of this course views sexual behavior as an adult behavior that occurs within the context of a committed, respect ful, physically and emotionally healthy relationship.
- Also during the second semester, **grade 11** students will take a traditional health education class that addresses a wide range of teenage health issues (including sex and sexuality) and challenges teens to consider the risks and consequences (to self and others) behind their decisions. Students reflect upon their role in creating healthy relationships (peer/collegial, friendships, family relationships, romantic relationships) and think about the importance of negotiating roles and responsibilities (regardless of gender).

Detailed information about our sexuality education curriculum can be viewed on the Needham Public Schools website: <http://rwd1.needham.k12.ma.us/wellness/Sexuality>

*Under Massachusetts law and Needham School Committee policy, you may exempt your child from any portion of the curriculum that involves human sexual education or human sexuality issues. To receive an exemption,*

[Return to Table of Contents](#)



*simply send a letter addressed to your building principal requesting an exemption for your child. Any student who is exempted will be excused from those lessons that cover topics on human sexuality and will be provided with an alternative assignment. A student who is exempted from this portion of the curriculum will not be penalized in any way.*

**Program Description:** At Needham High School, Health Education content and Physical Education content are combined to make up our wellness curriculum. Each individual course offers students a combination of “health” concepts and related “activities “ designed to build the skills, knowledge and attitudes needed to participate in an active healthy lifestyle. The wellness curriculum is designed to emphasize the student’s responsibility for his/her own health and well-being based on a six dimensional wellness model (see wellness hexagon below). This model explores human health as a multidimensional phenomenon that requires the individual student to take care of and nurture himself or herself in all the areas identified within the wellness hexagon.

The high school curriculum is part of a comprehensive K-12 Health and Physical Education sequence which enables the high school teachers to plan courses that build upon the knowledge, skills, and behaviors learned throughout the K-8 program. Because of this, high school classes focus more on encouraging each individual to evaluate his/her own wellness and set specific goals that will result in self improvement. As a result, high school wellness courses provide students with information, skills, and opportunities to carefully examine their current health status and challenge them to make appropriate adjustments towards healthier living.

The design of the high school wellness program includes a thematic focus for each grade level. Throughout the semester, this theme is integrated into 3 - 4 units of study (a required wellness unit, a required activity unit, and one or two additional activity units). As students experience this sequence of units, they learn wellness concepts in the classroom and then learn to apply them through specific activities in the fitness center, wellness studio, gymnasium, tennis courts and playing fields.

---

**9th Grade Thematic Focus ~ Healthy Mind-Healthy Body Connection** This theme is used to help students understand the important relationship between a strong mind and a strong body. Students will learn about the developing teenage brain and how it affects their ability to make decisions. They will be challenged to think about the many decisions they will have to make in high school and learn ways to develop and maintain a healthy mind and body. Decision-making - particularly decisions about the use of alcohol and other drugs, and delaying participation in sexual behaviors will be stressed. Students will also be introduced to the Needham High School fitness center and learn practical ways to improve muscular endurance and strength. In addition students will learn about the many benefits of physical activity (physical, social, emotional, intellectual) through sports and games.

---

**10th Grade Thematic Focus ~ Exploring Individual & Community Wellness** In this course, students are taught to use the wellness hexagon as a tool for thinking more broadly about their health and wellbeing and the wellbeing of others. This model expands students’ thinking about health beyond the typical absence of disease to a more holistic understanding of health as interdependent parts (dimensions) that work in concert with one another (see model of wellness hexagon above).. Each dimension is continually affecting and/or responding to the others which results in a dynamic and ever changing sense of well being. By becoming more conscious of each of the dimensions of wellness, and working to nurture them, students learn ways to affect their overall sense of



well-being (regardless of their current health condition). We refer to this process as becoming an active participant in our own wellness journey. In addition to self -- students will also explore ideas and ways to improve community wellness.

---

### **11th Grade Thematic Focus ~ Understanding and Assessing Personal Risk and Consequences**

This theme is used to guide students as they examine and assess the positive and negative personal risks and consequences they may face as young adults. Participation on our indoor ropes course will illustrate the importance of building trust in relationships and demonstrate how stepping outside one's comfort zone can lead to positive risk taking (growth). In their health class, students will continue to explore characteristics of healthy and unhealthy relationships and will reexamine the negative risks and consequence of sexual activity and the use of alcohol and other drugs. Students will reexamine the development of the teenage brain and explore the potentially dangerous role that alcohol and other drugs play in poor decision-making.

---

### **12th Grade Thematic Focus ~ In Pursuit of a Healthy Balance**

This theme is used in the culminating year of our program to help students reflect upon their past knowledge and experience in wellness classes and to explore and develop their own role and responsibilities in the ongoing pursuit of maintaining a healthy balance in their young adult lives. Students are challenged to explore their nutritional practices and think about ways to adopt healthy eating habits. Students learn strategies for managing stress and participate in both mindfulness and yoga practices. All students take CPR (those interested can receive a CPR card) and study health and wellness opportunities in the community and on college campuses.

**CONTENT DESCRIPTION FOR CORE WELLNESS CLASSES:** At each grade level, all students take two wellness units that are required and one or two others that are assigned based on space and time of year (some units can only be offered when certain spaces are available or when classes can be held outside). The required curriculum units have been carefully chosen to address health and wellness issues that are important to high school age students and that address school and community issues and concerns. State and national guidelines and The Metrowest Adolescent Health Survey (MWAHS) results guide decisions about content that should be required for all students.

---

## **WELLNESS 9**

---

Information about alcohol, drugs and sexuality will be taught within the context of a larger unit called 9th grade health. This unit begins by explaining the process of adolescent brain development. Research has shown that the brain continues to grow and develop into the early-to-mid 20's. It is the frontal lobe that is responsible for reasoning, problem-solving, and ultimately responsible decision-making that develops last. The frontal lobe also helps in the ability to control emotions and impulses. As a result, teenagers are at risk for making impulsive decisions. This course, is therefore, designed to help teens understand this risk and provides skills and strategies for good responsible decision-making in relation to alcohol, drugs, and sexual behavior. Towards this end, all 9th grade students will take Sexuality Education, AlcoholEdu for High School, Prescription Drug Safety, and HEADS UP: Real News About Drugs and Your Body.

- **Fundamentals of Fitness:** This course provides students with the basic facts concerning fitness by



addressing three questions: (1) What is fitness? (2) Why is it important? (3) How do I attain fitness? Students are introduced to the Needham High School fitness center and taught how to use all the equipment safely and appropriately. Each student sets personal fitness goals and learns how to develop an exercise plan to meet their goals.

- **Sexuality Education** is a course that has been adapted from Get Real, which is a comprehensive sex education curriculum developed by Planned Parenthood of Massachusetts. Get Real emphasizes social and emotional skills as a key component of healthy relationships and responsible decision-making and emphasizes the important role that parents play in educating their children about sex and sexuality. Information provided is medically accurate and age-appropriate. In this course students will develop agreements and expectations for creating a safe and comfortable class climate, identify a parent/guardian or other trusted adult from whom they can obtain information about sex and sexuality, understand the meaning of the terms sex, sexuality and sexual health, identify and analyze the reliability of the different sources where teens get information about sex and sexuality, analyze the difference between adult readiness for sexual behavior and teen readiness, talk with a parent/guardian or other trusted adult about dating rules, review proper vocabulary and explain the structure and function of the male and female reproductive systems, review the process of human conception, review what we know about the teenage brain, review the decision-making model and discuss the role that values play in supporting good decision-making, understand how emotions and the use of substances (alcohol and other drugs) can interfere with responsible decision-making, talk to a parent/guardian or other trusted adult about one's family's values, identify characteristics of a healthy and unhealthy relationship, assess whether behaviors between two dating partners are healthy or unhealthy, identify the risks of dating a significantly older partner, assess behaviors as being acceptable or unacceptable in a relationship, talk with a parent/guardian or other trusted adult about healthy and unhealthy relationships, assess one's attitudes and beliefs about gender norms in relationships, talk with peers about their attitudes and beliefs about gender norms in relationships, explain why both males and females are responsible for the possible consequences of sexual behavior and unprotected sex, identify ways that both partners (same sex and opposite sex) can take responsibility for their own sexual health within a relationship, identify ways that both partners can support the sexual health of their partner within a relationship, identify STIs and how they are transmitted and prevented, learn names of STIs and whether they are curable or treatable, reflect on one's feelings about learning about STIs, understand the importance of being totally honest with the doctor when s/he asks questions about sexual behavior, identify important future goals, understand how an unplanned pregnancy will alter all future plans and goals, name and describe popular methods for pregnancy prevention, understand that abstinence is the only way to prevent pregnancy and STIs/ HIV, understand that a condom will protect against pregnancy & STIs most of the time (a condom is not 100% guaranteed), observe a teacher demonstration on the correct steps for condom use, identify all the steps of correct condom use, identify risky situations and ways to lower the risk of sexual intimacy, learn to make responsible decisions in sexual relationships and practice effective assertive communication and refusal skills, identify ways to negotiate postponement and protection within relationships, identify and maintain boundaries.
- **AlcoholEdu for High School** is an evidence-based, online alcohol prevention course proven to reduce negative consequences associated with underage drinking. Five online modules are designed to help students address difficult alcohol-related decisions and scenarios. Students learn how to leverage their personal values and goals, resist peer pressure, and step in when they see someone who may be in



trouble. Students will be able to define a standard drink of beer, wine, and liquor, assess personal values and goals, challenge common myths and misconceptions and learn where they come from, recognize the influence of advertising on people's drinking-related attitudes and behaviors, identify reasons for abstaining from drinking, describe the dangers of drinking from communal sources, assess personal background risks for drinking-related problems, explain the basic facts concerning "blood alcohol content - BAC", recognize how parts of the brain are affected by alcohol use, list effective strategies to help someone who may have alcohol poisoning, analyze internal and external factors that may impact decisions, identify positive examples of refusing a drink and resisting peer pressure, list strategies for staying safe if choosing not to drink, identify options for handling a situation involving someone who might drive under the influence, understand the laws surrounding underage drinking, explain positive techniques for approaching difficult alcohol-related conversations, reassess personal goals and values, and create an action plan for future alcohol-related behaviors. AlcoholEdu offers a version for parents which can be accessed on the Needham Public Schools Website - wellness department page.

- **Prescription Drug Safety** is an innovative digital course that arms high school students with the knowledge and tools to make health, informed decisions when it comes to prescription medications. The program uses interactive scenarios and self-guided activities to help students learn facts about drugs, how to properly use and dispose of them, and how to step in when faced with a situation involving misuse. Topics include Opioids, stimulants, and depressants; Proper prescription drug use, storage, and disposal; Brain and body: the science of addiction; Simulations: refusal and bystander skills; and Debunking common myths.
- **HEADS UP: Real News About Drugs and Your Body** is a science-based education series that honors our 9th grade theme which is Mind-Body Awareness. The series is a product of a partnership between the National Institute for Drug Abuse (NIDA) and Scholastic, Inc. and presents easy to understand information about a variety of different drugs and their effects on the teenage brain and body. This site covers a wide range of different drugs, introduces both the scientific name and street names, describes what the drugs look like and how they are presented for sale, and covers the effects of the drugs on the human brain and body. Teachers will create a series of questions that will require students to navigate their way through the site to respond. They will encourage students to share information they learned from the site and review the skills of decision-making related to substance use. Examples of drugs discussed include alcohol, anabolic steroids, bath salts, cocaine, cough and cold medicine, heroin, inhalants, marijuana, MDMA (ecstasy or molly), methamphetamines (meth), prescription drugs (opioids, depressants and stimulants), salvia, and spice. Materials are updated every year so information will remain current. NIDA offers information for parents on its website which can be accessed on the Needham Public Schools Website - wellness department page.  
NIDA for TEENS: <https://teens.drugabuse.gov/>  
NIDA for TEACHERS: <https://teens.drugabuse.gov/teachers>  
NIDA for PARENTS: <https://teens.drugabuse.gov/parents>

---

## WELLNESS 10

---

- **Introduction to Wellness:** Students will assess their physical, social, emotional, spiritual, and intellectual well-being and learn strategies for nurturing their health in each of these areas. Students will acquire



knowledge about wellness principles, human needs, life patterns, and risk-taking behaviors and look at ways in which they affect (and are affected by) illness and wellness. After learning more about each of the six domains of wellness (physical, social, emotional, spiritual, intellectual, occupational), students will define a healthy human being, look at how healthy and unhealthy behaviors affect well-being, explore attributes of internal and external locus of control, and internal and external motivation, look at ways cultural norms affect healthy and unhealthy choices, assess their current well-being in each of the six dimensions of wellness, explore potential reasons why some people follow lifestyles that are unhealthy, and develop a wellness creed outlining their commitment to their own wellness journey. Students will also assess their relationship with their school community and determine ways to enhance overall community well-being.

- **Group Dynamics:** This course provides a unique opportunity for students to understand the importance and dynamics of group development. Class sessions consist of both mental and physical challenges that require students to work together to find solutions. Students learn the characteristics of five different stages of group development (forming, storming, norming, performing, adjourning) ((Bruce Tuckman in 1965) and practice skills to help move their group through these stages. Students learn the effect that an individual's actions can have on the attitudes and performance of others. Other areas of learning include the ability to listen and express oneself, group cooperation, concern and respect for others, and exploring ways to share one's strengths with others. Students also look at ways group dynamics (peer pressure) can lead people to make decisions that they might not make on their own.
- **Understanding Games:** Students will play and analyze games and identify those characteristics that are similar among like activities (invasion games, net games, target games, etc.). Emphasis will be placed on the application of skills, understanding movement concepts, the joy of play, and creating new games that can be shared with classmates.

---

## WELLNESS 11

---

- **Critical Health Issues:** This health class explores the potential risks and consequences associated with the teen and young adult social scene. Students reexamine the teenage brain to learn more about their propensity to take risks and practice skills to prepare them to make healthy decisions. Students analyze scenarios to explore how different decisions could lead to various possible outcomes. They explore how decisions can be influenced by their relationships with others in both positive and negative ways and learn the role that values play in making healthy and safe decisions. Students reflect upon their own personality and explore traits and behaviors they want to bring to a relationship as well as traits and behaviors they'd like to have in a relationship. They define the characteristics of healthy and unhealthy relationships and identify signs of abusive relationships. Students explore different communication styles (confrontational/aggressive, passive, assertive), and learn effective ways to communicate within a relationship. Terms and issues related to sexual diversity (gender identity, gender expression, sexual orientation, etc.) are discussed. Students learn about the biology of sexual desire and discuss ways to negotiate intimacy while remaining committed to abstinence/postponement of sexual behaviors. Students study the effect that alcohol and other drug use can have on relationships and on decisions to participate in sexual behaviors. They study current events in which substance use affected one's ability to make good decisions about sexual behaviors and brainstorm strategies that could have prevented the situation. Issues of sexual harassment, sexual assault, dating violence, and signs and symptoms of an unhealthy relationship



and/or an abusive relationship are included.

- **Ropes Challenges:** Through preparation and participation on our indoor ropes course, students learn the importance of trust, teamwork, communication, personal awareness, courage, support, and problem-solving. In small teams, students support one another as they learn the skills required to safely participate on a challenge course. Students learn to tie safety knots, wear safety gear correctly, run a pre-climb safety check, spot (support) climbers, communicate clearly, and climb the various initiatives that make up the challenge course. No student is required to climb. We want students to choose to climb only when they feel safe and ready. All students learn the skills and expectations for each role of a belay team (belayer, back-up belayer, anchor, and rope attendant) so that they can better work as a team to support climbers.

---

## WELLNESS 12

---

- **Nutrition:** Students learn why healthy eating is important in preventing major diseases, and in maximizing mental and physical energy and performance. Students learn basic food facts and study the US Dietary Guidelines recommended for all Americans. Students will learn the difference between calorie dense foods and nutrient dense foods, learn to read food labels, calculate personal caloric and nutrient needs, explore personal eating habits, understand the difference between safe and unsafe ways to lose and gain weight, identify healthy options in a grocery store (field trip to Sudbury Farms) and plan a healthy meal for themselves and their families.
- **Yoga:** This course covers the basic knowledge, attitudes and concentration necessary to benefit from a Yoga practice. Flexibility, balance, and body alignment, as well as breathing, relaxation techniques and stress management strategies are part of each exercise session. Students also learn the benefits of mindfulness. Students practice yoga skills and mindfulness skills throughout the unit.
- **First Aid/CPR:** The American Heart Saver First Aid and CPR course is taught to all seniors and includes information and skills to provide first aid, cardiopulmonary resuscitation (CPR), and automated external defibrillator (AED) use in a safe, timely, and effective manner. The course goals include content knowledge and physical skills. In addition to learning CPR and AED skills, students also learn how to assess an emergency situation, help a choking adult or child, stop severe bleeding, use an epinephrine pen, and respond to an adult opioid-associated life-threatening emergency. Students learn about Naloxone and how it can be administered in an emergency situation. Upon completion of the course, students may be certified to administer CPR to infants, children, and adults.



## WORLD LANGUAGES

Num	Length	Credit	Course	Num	Length	Credit	Course
1112	F	4	French 1 Hon	1522	F	4	Spanish 2 Hon
1121	F	4	French 2 Acc	1523	F	4	Spanish 2
1122	F	4	French 2 Hon	1531	F	4	Spanish 3 Acc
1131	F	4	French 3 Acc	1532	F	4	Spanish 3 Hon
1132	F	4	French 3 Hon	1533	F	4	Spanish 3
1141	F	4	French 4 Acc	1541	F	4	Spanish 4 Acc
1142	F	4	French 4 Hon	1542	F	4	Spanish 4 Hon
1152	F	4	French 5 Hon	1563	F	4	Spanish 4
1161	F	4	French 5 Acc	1581	F	4	AP Spanish Language and Culture
1171	F	4	AP French Language and Culture	1552	F	4	Spanish 5 Hon
1313	F	4	Latin 1 CP	1561	F	4	Spanish 5 Acc
1311	F	4	Latin 1 Acc	1602	F	4	Mandarin 1 Hon
1312	F	4	Latin 1 Hon	1612	F	4	Mandarin 2 Hon
1321	F	4	Latin 2 Acc	1621	F	4	Mandarin 2 Acc
1322	F	4	Latin 2 Hon	1631	F	4	Mandarin 3 Acc
1331	F	4	Latin 3 Acc	1622	F	4	Mandarin 3 Hon
1332	F	4	Latin 3 Hon	1641	F	4	Mandarin 4 Acc
1341	F	4	Latin 4 Acc	1632	F	4	Mandarin 4 Hon
1342	F	4	Latin 4 Hon	1681	F	4	Mandarin 5 Acc
1513	F	4	Spanish 1	1691	F	4	AP Mandarin Chinese Language and Culture
1512	F	4	Spanish 1 Hon	1719	F	4	INDEX World Language
1521	F	4	Spanish 2 Acc				



The World Languages Department offers language sequences in four different languages: French, Spanish, Mandarin and Latin. Each language sequence develops students’ skills in reading, writing, listening and speaking. All modern language courses focus on communicative proficiency, cultural understanding and making linguistic connections. Modern language courses above the introductory level are taught in the target language and students are expected to use only the target language during class.

The NHS high school graduation requirement is two years of study in the same world language. Students who want to become proficient in a particular language by graduation should study the same world language for four years in high school.

**Guidelines for Selecting the Most Appropriate Course:**

Students may continue studying the language they studied in middle school or they may begin learning a new language. If a student wants to begin studying a new language at Needham High, the student should elect one of the first year courses (Examples: Latin 1 or Mandarin 1)

If a student studied French, Spanish or Mandarin in middle school and wants to continue studying that language at Needham High, then the student should select French II, Spanish II or Mandarin II.

**Guidelines for Selecting the Most Appropriate Level:**

Current NHS students should make their course level selection in consultation with their current world language teacher. When selecting a language “level” students are encouraged to consider the following level descriptions. Please note: It is easier to change levels earlier in one’s language sequence than later.

- **College Preparatory (Latin and Spanish only):** College Preparatory World Language classes are paced to ensure students have ample in-class practice with essential linguistic structures and high frequency vocabulary. There is extensive guided practice provided in class. Homework emphasizes skills practice and structured application.
- **Honors (All languages):** Honors World Language classes are taught at a moderate pace and require moderate amounts of preparation outside of the classroom. Instruction focuses on essential linguistic structures, high frequency and enrichment vocabulary, and there is some repetition. Homework blends skills practice with skills application.
- **Accelerated (All languages):** Accelerated World Language classes are taught at a fast pace and require a significant amount of preparation outside of the classroom. Instruction integrates complex linguistic structures, extensive vocabulary, and there is a limited amount of in-class guided practice and limited repetition. Accelerated courses are excellent preparation for the Advanced Placement course. Homework generally focuses on students’ application of skills (reading, writing, speaking, listening).

**FRENCH**

---

<b>FRENCH 1</b>			
1112	(4 credits)	Full Year	Grade 9, 10, 11, 12

---

This honors level course is an introduction to French, to its pronunciation and intonation, to its basic grammar and idioms, and to an elementary vocabulary. The aim is to develop the listening and speaking skills and also



includes the reading of simple texts. The student will be introduced to France and the Francophone world.

---

**FRENCH 2: ACCELERATED, HONORS**

1121, 1122 (4 credits)

Full Year

Grades 9, 10, 11, 12

---

This course is for students who began their study of French in middle school and are entering grade 9. The course builds upon the core content found in the textbook. Students may be expected to maintain an oral and/or written journal, to write several compositions, to make oral presentations, to use the language lab, and to read cultural and/or literary selections.

---

**FRENCH 3: ACCELERATED, HONORS**

1131, 1132 (4 credits)

Full Year

Grades 9, 10, 11, 12

---

This course builds on French 2, expanding the use of all four language skills with more complex use of language and comprehension of more sophisticated texts and other materials.

---

**FRENCH 4: ACCELERATED, HONORS**

1141, 1142 (4 credits)

Full Year

Grades 9, 10, 11, 12

---

This course builds on French 2 and 3 as students read and/or view selected works of literature and culture of the Francophone world that deal with issues such as emigration, immigration, cross-cultural adaptation, and current events. Emphasis will be placed on the further development and practice of the four language skills. The honors level focuses more on practical vocabulary in a variety of daily situations and studies cultures of the Francophone world through adapted literature. In general, the accelerated level goes deeply into grammar, verb tenses, and vocabulary with a focus on analytical and creative writing.

---

**FRENCH 5: ACCELERATED, HONORS**

1161, 1152 (4 credits)

Full Year

Grade 9, 10, 11, 12

---

This is a course based on the principles of project-based learning. Students will reinforce communicative functions learned in French 4 and will continue to develop their proficiency through investigations, debates, performances and products of film, art, literature, cuisine and cultural/historical studies of French and the Francophone world.

---

**ADVANCED PLACEMENT FRENCH LANGUAGE AND CULTURE**

1171 (4 credits)

Full Year

Grade 12 or department approval

---

This course is designed to develop the four language skills at a high level of proficiency and accuracy and to prepare the students for the French Language and Culture Advanced Placement examination in May. Those students who are successful on the AP exam may receive college standing and/or credits for their outstanding high school performance. Students will read selected works, classic and modern, to discuss various themes and social issues.



# SPANISH

---

## SPANISH 1

1512, 1513 (4 credits)

Full Year

Grade 9, 10, 11, 12

---

This course is an introduction to Spanish, its pronunciation and intonation, basic vocabulary, and basic grammar and idioms. The emphasis of the course is on listening and speaking with some beginning reading and writing. 1512 is an honors level course designed for students who have had previous successful experience with another world language. 1513 is a College Prep level course designed for those students who are just beginning their study of a world language.

---

## SPANISH 2

1521, 1522, 1523 (4 credits)

Full Year

Grades 9, 10, 11, 12

---

This course is for students who began their study of Spanish in middle school and are entering grade 9; or for students entering grade 10, who are continuing with their Spanish studies after completing Spanish 1. In this course, students expand their knowledge and use of the present and past tenses, write several compositions, make oral presentations, use the language lab, and read cultural and/or literary selections. Thematic units of study include: geography of the Spanish speaking world, daily routines, childhood, an exploration of celebrations in the Spanish speaking world, and the study of sports and sports figures in the Spanish speaking world. Students studying at the accelerated pace will also study news reporting and current events.

---

## SPANISH 3

1531, 1532, 1533 (4 credits)

Full Year

Grades 9, 10, 11, 12

---

This course builds on Spanish 2, expanding the use of all four language skills with more complex use of language and comprehension of more sophisticated texts and other materials. Thematic units of study include: shopping (places and ways one can shop), how to care for one's self (healthy practices in the Spanish speaking world and one's own community; how to communicate about illness, remedies and provide recommendations to improve one's health), and an exploration into social issues in the Spanish speaking world and one's own community.

---

## SPANISH 4

1541, 1542, 1543 (4 credits)

Full Year

Grades 9, 10, 11, 12

---

This course builds on Spanish 2 and 3 as students further develop their communicative capacity in the target language through conversation as well as reading and/or viewing selected works of literature and culture of the Hispanic world. Thematic units of study at the college prep and honors pace include: exploration of study abroad experience through planning for international travel, accommodations (making hotel reservations), using public transportation and navigating a city, housing and home life abroad (finding a host family and/or roommates), and eating out (restaurants, street food, and social norms & customs).



Thematic units of study at the 4 accelerated pace include: art in the Spanish speaking world, identity, immigration, and the study of social media in the Spanish speaking world as well as one's own community. This course also emphasizes refinement of one's communication skills relative to grammatical accuracy and nuances in meaning (word choice, phrasing and contextual appropriateness).

---

## SPANISH 5

1561, 1552 (4 credits)

Full Year

Grade 9, 10, 11, 12

---

This course continues the work of Spanish 4 honors and 4 accelerated. In this course students examine the various cultures of the Spanish-speaking world from different perspectives: through authentic readings, songs, poetry, art, technology, films and cultural/historical projects. Students will complete projects and present them to the class as a way of participation and assessment. Advanced grammar will be reviewed and practiced within classroom discussions and debates as well as in written products.

---

## ADVANCED PLACEMENT SPANISH LANGUAGE AND CULTURE

1581 (4 credits)

Full Year

Grade 12 or department approval

---

This course is designed to develop the four language skills at a high level of proficiency and accuracy and to prepare the students for the Spanish Language and Culture Advanced Placement examination in May. Students will deepen their knowledge not only of the Spanish language, but also the culture of countries where Spanish is spoken. Those students who are successful on the AP exam may receive college standing and/or credits for their outstanding high school performance.

## MANDARIN (CHINESE)

---

### MANDARIN 1

1602 (4 credits)

Full Year

Grade 9, 10, 11, 12

---

This course is an introduction to Mandarin and the Chinese-speaking world. Students study pronunciation, intonation, basic grammar and idioms, and develop an elementary vocabulary. The aim is to develop students' listening and speaking skills and for students to acquire a basic level of fluency. The course also includes the reading and writing of simple texts.

---

### MANDARIN 2

1612, 1621 (4 credits)

Full Year

Grades 9, 10, 11, 12

---

This course is for students who began their study of Mandarin in middle school and are entering grade 9; or for students entering grade 10, who are continuing with their Mandarin studies after completing Mandarin 1. This course builds on Mandarin 1 and is designed to develop the four language skills. In addition to the core content found in the textbook, students will read selected works from Rhythm & Rhyme and do hands-on projects. Students will also learn about the culture of China and Chinese speaking countries.



### **MANDARIN 3**

1631, 1622 (4 credits)

Full Year

Grades 9, 10, 11, 12

---

This course is a continuation of Mandarin 2, and is designed to further develop the four language skills. Students will achieve greater proficiency through reading more complex Mandarin, reporting on news from the Chinese-speaking world, and carrying out projects. Students also learn how to type Chinese characters at a good speed.

---

### **MANDARIN 4**

1641, 1632 (4 credits)

Full Year

Grades 9, 10, 11, 12

---

This course builds on Mandarin 3 as students further develop the four language skills. Students will read more complex Mandarin texts and students' will further develop their writing skills through journals, compositions and/or short essays. Students will also report on news from the Chinese-speaking world and regularly type in Chinese characters.

---

### **MANDARIN 5 ACC**

1681 (4 credits)

Full Year

Grade 9, 10, 11, 12

---

This course is designed to develop the four language skills at a high level of proficiency and accuracy. Students will read works from classic and contemporary authors and will develop their writing skills. Students will also engage actively in listening and speaking activities. Finally, students will study Chinese culture through articles, newspapers, films, and short stories.

---

### **AP MANDARIN CHINESE LANGUAGE AND CULTURE**

1691 (4 credits)

Full Year

Grade 12 or department approval

---

This course is designed to develop the four language skills at a high level of proficiency and accuracy and to prepare the students for the Chinese Language and Culture Advanced Placement examination in May. Those students who are successful on the AP exam may receive college standing and/or credits for their outstanding high school performance. Students will read works from classic and contemporary authors and will develop their writing skills. Students will also engage actively in listening and speaking activities. Finally, students will study Chinese culture through articles, newspapers, films, and short stories.

## **LATIN**

The Latin program focuses on the following areas: (1) developing students' understanding of the impact of Latin on English and the modern Romance languages through the study of roots, prefixes, suffixes; (2) developing students' understanding of the impact of Roman culture on modern art, architecture, literature, and political and cultural institutions; (3) the development of reading skills through a combination of fictional Latin stories and original Latin (both adapted and unadapted) so that students are able to read authentic Latin upon completion of the Latin 4 course; and (4) the development of students' speaking, listening and writing skills in order to better translate and understand Latin.

[Return to Table of Contents](#)



---

**LATIN 1***1311, 1312, 1313**(4 credits)**Full Year**Grades 9, 10, 11, 12*

---

This course is an introduction to the Latin language and the world of ancient Rome. Students learn to see Latin and elements of ancient culture as an important part of their world, and to view that world through the lens of Latin. Emphasis is placed on the elements of the language: alphabet, pronunciation, parts of speech, word-formation, vocabulary (including English derivatives), and grammatical rules. Students will use the Ecce Romani textbook, which uses an intuitive “reading based” method of learning, as well as “Active Latin” methods including speaking and listening to support students’ development of reading and communication skills. Through readings about an aristocratic Roman family, students will begin to learn the geography of the ancient Roman world, Roman mythology, an outline of Roman history, and important aspects of Roman private and public life. Because this course is the foundation for the continuing study of Latin, it is vital that students develop the necessary habits of memorization, attention to detail, preparation of daily work, and organization. Memorization of word-forms, vocabulary and grammatical rules is essential.

---

**LATIN 2***1321, 1322**(4 credits)**Full Year**Grades 9, 10, 11, 12*

---

This continuation of Latin 1 further develops the student’s Latin vocabulary and involves the study of more advanced aspects of the Latin language. Students continue using the Ecce Romani texts as well as Active Latin methods to read continuous passages of increasing difficulty. Students also study various aspects of Roman transportation and travel. At this stage in the Latin sequence, students begin to apply their Latin language skills in context and transition away from memorization. To prepare for Latin 3, students in Latin 2 will develop a solid knowledge of subordinate sentence structures, the architecture of a complex Latin sentence, and skills for dealing with variable Latin word order.

---

**LATIN 3***1331, 1332**(4 credits)**Full Year**Grades 9, 10, 11, 12*

---

During the first part of the year students will continue to learn the grammar and syntax of Latin that is important for translating original texts, again using the Ecce Romani text well as Active Latin methods. Students will also continue to study English derivatives and Roman civilization forms of entertainment, such as the Circus Maximus and comissatio - the Roman dinner party. In this course, students make their first leap to connected reading in authentic Latin. The course requires students to engage in strong study habits in preparation for Latin 4.

---

**LATIN 4***1341, 1342**(4 credits)**Full Year**Grade 12 or department approval*

---

During the first part of the year students will continue to learn the grammar and syntax of Latin that is important for translating original texts. Students will finish reading the Ecce Romani texts, well as Active Latin methods. The inclusion of authentic Latin will be more consistent and more challenging than what students experienced in Latin



3. Students will explore authors from Aesop to Caesar to Horace.

ELECTIVES

INDEX WORLD LANGUAGE			
1719	(4 credits)	Full Year	Grades 9, 10, 11, 12

INDEX World Language study may be elected as a full-year course for students who want to study a language that is not currently taught at Needham High School (examples are German, Italian, and Arabic). Similarly, a student may want to study French, Spanish or Latin at a level that is not offered (either Latin 5, or a sixth year of French or Spanish). INDEX is available to students who have already met their world language high school graduation requirement or have achieved an advanced level in another world language.

The term INDEX stands for “independent exploration”. Thus, students must:

- Present a study plan for approval by the Director of World Languages.
- Gain acceptance into the INDEX Program and registration for INDEX as a course are contingent upon such approval.
- Commit to carrying out study that is self-directed and carried out with minimal supervision and guidance.

INDEX study will be graded ‘pass/fail’, carry full academic credit, and will not be weighted.



## OTHER ELECTIVE OFFERINGS

Needham High School offers several additional course offerings for the 2021-2022 school year.

Num	Length	Credit	Course	Num	Length	Credit	Course
9897	F	2	Courageous Conversations on Race 1	1260	S	2	Peer Tutoring
9887	F	2	Courageous Conversations on Race 2	9899	S	2	TEC Internship
9896	S	2	Internship in Special Education	9898	F	4	Work Study

---

### COURAGEOUS CONVERSATIONS ON RACE

9897 (2 credits)

Full Year

Grades 11, 12

---

This full year course open to juniors and seniors through a recommendation process will focus on learning about how race functions as a social construct and how racism operates on a systemic level both in society and here at Needham High. The course will include an exploration of both personal identity, and strategies for increasing knowledge and closeness between ethnic and racial groups. Students will learn about this history of racial inequity through lessons of history, literature, and politics; reflect on their identity and on their own experiences in the equity arena in the current cultural and school climate; practice courageous conversations; and explore personal experiences of racism and inequity. Through experiential activities and a study of selected readings, videos, and other media, students will learn why it is important to talk about race and how to do it. Course topics will include bias, privilege, discrimination, racism, and the cycle of oppression. As the culminating project for the course, students will use their knowledge to design Courageous Conversations on Race lesson plans that they will execute with grade 9 students. Students will be able to apply the knowledge and skills learned in this course to other areas of social inequity. This course will meet on Friday mornings before school for a full year.

---

### COURAGEOUS CONVERSATIONS ON RACE 2.0

9887 (2 credits)

Full Year

Grade 12

---

**Prerequisite:** This full year course expands and refines skills developed in CCOR 1.

Students will focus on leadership development and facilitation skills necessary to participate in continued self-reflection, class interfacing, taking leadership roles in CCOR class and teaching of our 9th graders. Students enrolled in this course will help guide our Join the Conversation events, facilitate HS and middle school workshops, and partner with various clubs under the umbrella of SAFE in equity work. As well, students will have the opportunity to participate in youth leadership and equity-related events beyond NHS, such as Sparkshare and NDI summits. Students will also be supported in developing specialized areas of study that can be integrated into CCOR and 9th grade curriculum, such as National/Statewide Equity and BLM Movements; Voter Registration and



accessibility; Inequity in the Pandemic; Economic Oppression; and Educational Systemic Oppression – school to prison pipeline.

---

### **INTERNSHIP IN SPECIAL EDUCATION**

9896 (2 credits)

Full Year

Grade 10, 11, 12

---

After training with special education staff including a special educator, speech and language pathologist, and a Board Certified Behavior Analyst. students would take part in programming focusing on peer modelling, tutoring, socialization, and friendship development. Additionally, students will develop an understanding of different disabilities, life skills curriculum, and functional academics. Students would be expected to participate in activities in school and in the community during class time.

---

### **PEER TUTORING**

1260 (1 credit)

Semester

Grades 11, 12

---

This volunteer program is available for juniors and seniors who are interested in using their academic talents to support their peers in academic support classes. After training, peer tutors will be able to provide numerous supports to students including: assistance with reading, support with note taking and test prep, guidance with editing and revising papers, support with organization. Participating students will attend the support class a minimum of three of the five class meeting days each rotation.

---

### **TEC INTERNSHIP**

9899 (1 credit)

Semester

Grade 12

---

Internships are structured, supervised learning experiences allowing students the opportunity to explore a career. Needham is a member of The Educational Cooperative (TEC). The TEC internship program offers students the opportunity, for a fee, to be placed with an organization or business in a career area of interest. Students and families will be responsible, at least in part, for the internship fee. Interested seniors must have a minimum of 74 credits at the end of junior year. More information is available at [www.tec-coop.org](http://www.tec-coop.org).

---

### **WORK STUDY**

9898 (1-4 credits)

Full Year

Grades 11, 12

---

The Work Study class is designed to recognize the learning experiences students have in work environments, while providing the skills needed to be successful in those spaces. Students will be required to have a job prior to enrolling and will be expected to work a minimum of 12 hours per week during the year. In addition to the direct work experience, students will meet periodically with the NHS teacher outside of the regular school day to focus on the skills, interactions, and knowledge needed to be successful in any job setting. The teacher will complete periodic visits to each job site and maintain contact with employers throughout the year to assess how the in-class lessons are translating to the work environment. Participation in the class must be approved by the student's guardian, counselor, and assistant principal. The class will be graded on a Pass/Fail scale, based on satisfactory performance on the job and the fulfillment of the after school class requirements. Credits will be awarded based on average hours worked each week.



## **STUDENT SUPPORT SERVICES**

**PLC and SKILLS** classes are graded on a Pass/Fail basis. A passing grade is earned by students who engage in regular attendance, have a willingness to work, accept support and engage in lessons. Students earn credit for these classes. PLC and SKILLS classes are considered “major” classes and can be considered toward athletic eligibility.

---

**GRADE LEVEL SKILLS CLASSES** are designed to serve students who are included in general education classes at the College Prep, Honors or Accelerated level and who require supportive instruction to help them access the general curriculum. Students in the Skills Center utilize academic support and develop strategies to learn how to use their strengths to compensate for area(s) of difficulty or challenge, to develop self awareness, self advocacy, and to gain independence in managing their academic responsibilities. Recommendations for Skills classes and frequency are made by the student’s IEP team.

---

**SKILLS CLASS in the CONNECTIONS PROGRAM** provides organizational support, academic and therapeutic interventions including individual and group counseling in a therapeutic milieu setting. Students learn coping skills in order to become successful students. Recommendations for Skills classes and frequency are made by the student’s IEP team.

---

**SKILLS CLASS in the INSIGHT PROGRAM** provides targeted support in the area of executive function and social pragmatics. Students take part in social skills/ social pragmatic groups with the Speech and Language Pathologist at least once a cycle as part of the program. Recommendations for Skills classes and frequency are made by the student’s IEP team.

---

**FOUNDATIONS Math classes** are special education classes that provide a modified curriculum and are delivered in a small group environment. The curriculum follows the Common Core Standards in Mathematics. Recommendations for Foundations Math classes and frequency are made by the student’s IEP team.

---

**The ILC (Independent Learning Center) and the Postgraduate Program** are community based model of instruction for students who require transition services as designated by their IEP’s. The programs are designed to promote a seamless transition from High School to the demands of adulthood. “Undergraduate students” complete a combination of general education classes and specialized academic classes within NHS. Internships are developed at an early age to introduce work skills and expanded upon in a meaningful and age-appropriate manner. Additional services include ( but are not limited to): travel training, shopping, meal planning, cooking, budgeting, self -advocacy instruction, social skill development and accessing community resources, as the academic schedule allows. Following completion of the four year academic portion of their program, students participate in the NHS graduation ceremony and move on to manage an individualized schedule comprised of some or all of the following components: internships/ competitive employment, post-secondary education, functional academics taught in natural contexts, community based recreation, travel using multiple modes of transportation, independent living skill development and self-determination (planning for the future). The program duration and intensity of supports provided is determined by the individual and his or her Team.



Individuals and their families are supported as they evaluate and select adult service providers and community resources following their exit from the school system.

---

**THE PATHWAYS PROGRAM** is a sub-separate therapeutic program located within Needham High School providing students with an academic curriculum aligned with the Massachusetts Curriculum Frameworks and high level of therapeutic support. Recommendations for Pathways are made by the student's IEP team and each student's program is unique to their learning and emotional needs.

---

**\*PERSONALIZED LEARNING CENTER (PLC)** is a structured general education program designed to assist students in need of academic support. Students enrolled in the PLC work to complete assignments, and improve study skills, organization and test taking strategies. Referrals for PLC are made by the student's school counselor to the Student Support Team (SST).

---

**\*TRANSITIONS** is a short-term program that supports the needs of students re-entering high school from a lengthy absence. Entrance into Transitions begins with a re-entry meeting in which an individual plan is designed to include communication with classroom teachers, making up work and any needed clinical support.

**\*Transitions and PLC are overseen by the special education department but are not special education services.**



# **GUIDANCE DEPARTMENT SERVICES**

## **SCHOOL COUNSELORS**

The School Counselors in the Guidance Department at Needham High School provide comprehensive social/emotional, academic, and postsecondary counseling, as well as career and community service exploration, to all students at Needham High School. The following services are available to all students:

The School Counselors work to help all students achieve academic success, balance in their lives, help in times of crisis, and to assist in developing a meaningful plan for life after high school. All School Counselors can be accessed by appointment or on a drop in basis. Regardless of the severity of an issue, all students are encouraged to meet with and establish a working relationship with their School Counselors as early as possible. If an emergency situation arises, any available School Counselor will meet the needs of student(s) if the assigned School Counselor is not available.

Guidance Department Website:

<https://sites.google.com/a/needham.k12.ma.us/nhs-guidance-department/home>

## **SOCIAL & EMOTIONAL SUPPORT**

Students may face challenges during their time at Needham High School. School and Personal Counselors collaborate to support students and their families during these difficult times.

## **PERSONAL COUNSELORS**

Personal counselors provide a continuum of services to students in need. They support students to help them navigate the disappointments and frustrations that may occur during the high school years. They also help students manage more serious emotional or behavioral concerns and high risk behaviors. They provide crisis intervention for any student or family in need, assisting with locating the appropriate resources. Students can be seen individually or in group counseling sessions.

Besides the counseling and case management functions, the personal counselors' responsibilities include the oversight of the Mediation Program and facilitating student re-entry meetings after hospitalizations with the Transition Program Social Worker.

While students often initiate the contact with their School or Personal Counselor, another student, parent, guardian, teacher, or administrator who is concerned may reach out to the School or Personal Counselor directly. Counselors will also reach out to students to help establish a relationship or to address a personal issue as the need for this is identified to them. Please note that conversations with Counselors are considered confidential, and are not part of the school record, although there are limits to the bounds of confidentiality with situations that pertain to safety.

Every student is assigned to one of eight School Counselors (divided alphabetically) for four years. Each student is assigned one of two Personal Counselors (divided alphabetically) for four years.

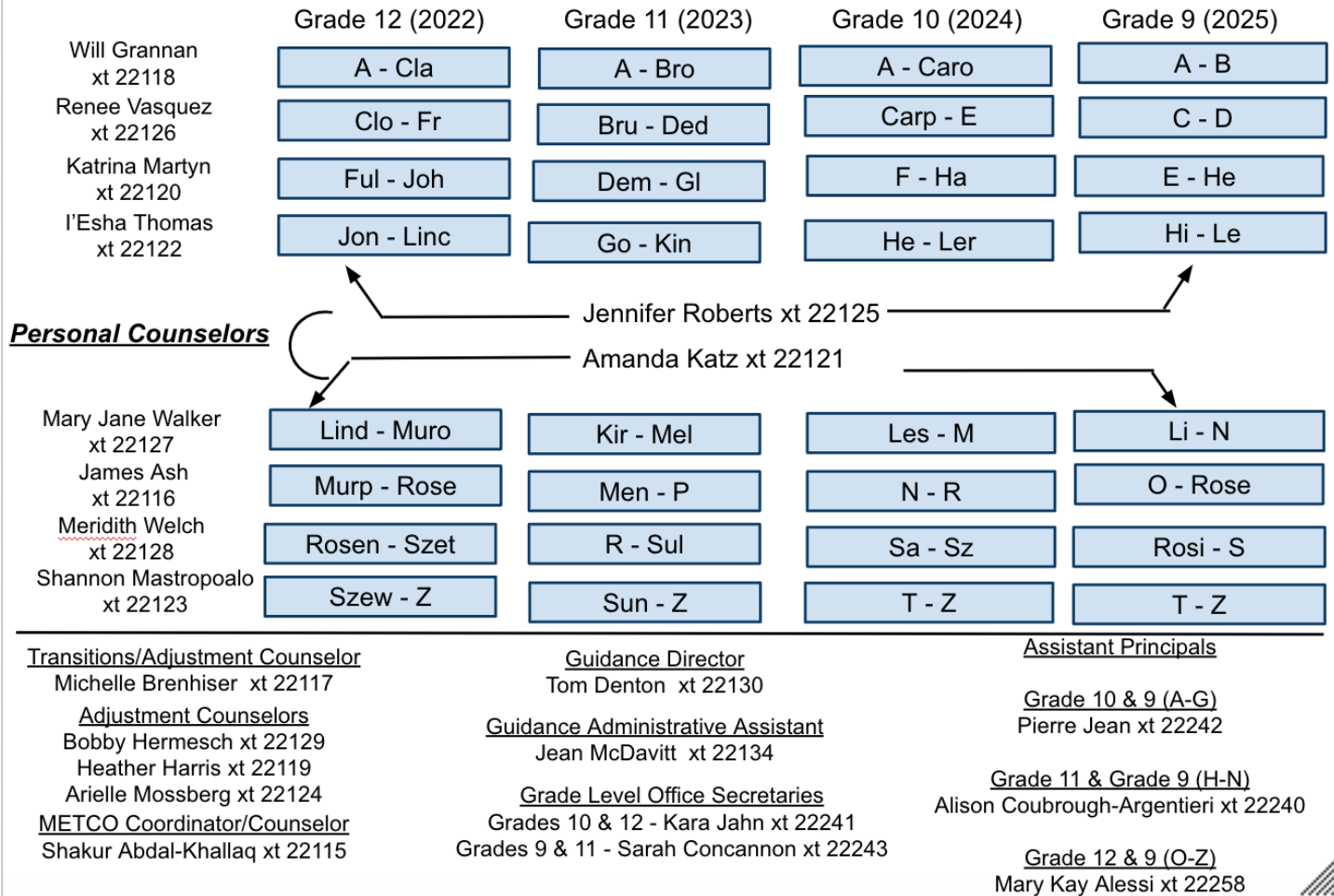
## **SCHOOL ADJUSTMENT COUNSELORS/ TRANSITIONS PROGRAM SOCIAL WORKER**

The school adjustment counselors work with students who have a specific social-emotional goal within an Individualized Education Plan (IEP). The Transition Program Social Worker works with students returning back to school after a mental health crisis or significant medical event.



## Needham High School Guidance Structure for 2021-2022

(email staff format: firstname\_lastname@needham.k12.ma.us)



## ACADEMIC PLANNING SUPPORT

The School Counselor is the student's main resource each year for academic planning, scheduling, and for accessing academic support. The classroom teacher is the main resource for content support and is the primary resource for extra help (note: the classroom teacher also makes the official recommendation of course level for the following year). The School Counselor will help the student track his/her progress toward academic goals and towards meeting all graduation requirements. Students are encouraged to meet with their School Counselor to discuss academic concerns and questions. School Counselors reach out to students on a scheduled and as needed basis.

### SEMINARS (9th and 10th GRADE)

The Guidance Department has developed a series of seminars/meetings for 9th and 10th grade students. School Counselors lead the seminars in an effort to meet the students and deliver important information on a variety of topics. It is also the goal of the Guidance Department to get to know students through these programs, so that students will feel more comfortable accessing the many services and resources that are available to them.

In grade nine, the counselors present four seminars during the first half of grade 9. The topics include:

[Return to Table of Contents](#)



Orientation to Resources and Services, Time Management and Study Skills, Social Emotional Skills, and 10th Grade Course Selection. In grade 10, students participate in a Career Exploration Seminar, presented by the Guidance and Health and Wellness Departments.

### **COMMUNITY SERVICE LEARNING (CSL) PROGRAM/VOLUNTEER SERVICE**

Each student's School Counselor is his/her contact person for participation in Needham High School's CSL Program. The Community Service Learning Program is an important part of the educational experience offered at Needham High School. All students are required to complete two community service learning credits (60 hours) as part of their graduation requirement. Each credit equals 30 hours of volunteer or internship service. A minimum of 30 hours must be done with the same organization. Students may complete the entire 60 hours with one organization if they choose, or they may do 30 hours each with two different organizations. Students may earn up to 2 credits per year with a maximum of 8 credits over four years. Those who earn 8 credits will be acknowledged at Senior Class Day.

The mission of the Community Service Learning Program is to broaden students' experiences beyond the traditional classroom by providing opportunities to become involved in volunteerism, service learning, and career exploration. By engaging in such activities, students learn more about themselves, their interests, and the privileges and responsibilities of being a member of a school, local, and global community.

Students may complete their community service learning requirements through volunteer work, an unpaid internship, or a combination of both. Specific requirements for each of these two options are listed below. Students may start their community service learning hours beginning in their 9th grade year. Hours earned prior to that year, including the summer, may not be used. Students may volunteer for a minimum of 30 hours at a non-profit organization of their choosing, or one suggested by their school counselor. Students may not be supervised by a parent or other relative. Students who participate in one week service trips through a non-profit organization, such as Habitat for Humanity or a local church or temple, are eligible to receive one credit for successful completion of a trip. Volunteering without pay at a business, unless it is a pre-approved internship, cannot be used for community service.

We strongly recommend that students receive approval prior to beginning their community service by completing a student proposal form and turning this into their school counselor in the guidance office. This is the best way to ensure that a student's volunteer hours will meet the requirements. With the exception of the TEC internship program, no internship credit can be given without prior approval. The Community Service Learning forms are available in the guidance office and can also be downloaded from the guidance web site or the Career and Community Service Learning page.

Community service opportunities are also posted in the weekly News From the Hill. Students are also welcome to check in with their school counselor to discuss additional ideas, to propose their own project, or to find out more information about a particular organization.

Students receive a grade of "P" (Pass) on their transcript when they have completed their community service requirements. All community service credits should be completed by January of the student's senior year. Students are encouraged, however, to begin fulfilling this requirement early on in their high school years. Our



experience has shown us that many students who actively engage in volunteer service from the beginning of high school sustain their involvement and participate in additional service activities. Additionally, volunteer work can help students begin the process of career exploration.

### **REGIONAL HIGH SCHOOL RELATIONSHIPS**

Needham is a member of Minuteman Vocational Regional Technical High School in Lexington, MA and Norfolk County Agricultural High School in Walpole, MA. Students most often attend these high schools starting in 9th grade. Needham High School students and families who are interested in learning more about these schools are encouraged to review the websites and speak with their guidance counselors as well.

Minuteman Regional Vocational Technical High School: <http://www.minuteman.org>

Norfolk County Agricultural High School: <http://www.norfolkaggie.org>

### **POST-SECONDARY PLANNING**

The school counselor is the main school resource for a student's postsecondary planning. Although the bulk of the postsecondary planning commences with a comprehensive program in the Spring of Junior year, there are other aspects, which occur as early as grade 9. From self-assessments, interest inventories, career discovery, and some standardized testing, the school counselors, in conjunction with the Personal Counselors, address issues related to healthy development throughout high school. With the resulting personal growth and self-discovery, students are able to enter the postsecondary planning process during junior year in a more meaningful and directed fashion. In grade 11 the school counselors meet with all students in small groups in February to start the postsecondary planning process. Subsequently, the school counselors have at least two individual meetings with their students prior to the close of junior year. By the end of grade 11, the juniors will have written college essays (through English class), will have asked two teachers for confidential recommendations, and will have an initial list of colleges and programs to explore, which is all monitored by the school counselor. Additionally, the Guidance Department offers three parent nights during junior year to address the Postsecondary Planning Process, Visiting and Touring Colleges, and Financial Aid. Junior families also receive two newsletters during junior year.

In grade 12 the school counselors meet with all students in small groups in September to continue the postsecondary planning process. Subsequently, the school counselors have individual meetings with their students in the fall to track their progress and to support them in their application submissions. In September the school counselors offer a parent evening with three Directors of Admissions from local colleges. School counselors write a confidential letter of recommendation for each student. Counselors also coordinate visits from over 150 college admissions officers to the high school in the fall of senior year.

All students and families have access to the comprehensive Guidance Database in Naviance throughout the Postsecondary Planning Process. They also have access to Guidance Department's Postsecondary website: <http://nhs.needham.k12.ma.us/college/default.htm>

### **POST-SECONDARY COLLEGE/UNIVERSITY REQUIREMENTS**

For those considering college, admission requirements should be strongly considered when students plan their programs. Because these requirements vary widely, the best sources of information are the individual school catalogs or individual college and university websites. Students should sample a few catalogs and websites for the types of schools they are considering to make sure that they are covering the requirements. It is better to have more than is needed than to be short a required or recommended course. Resources and direct links to college



and university websites can be found on the Guidance Department website.

Typical requirements for the different types of post-secondary schools to which many Needham High School students apply are:

- Four-Year State and Private Schools: English: 4 years Social Studies: 2-3 years Mathematics: 3-4 years Sciences: 3 years (two of which must be lab sciences) World Language: 2-4 years  
In addition to a student having taken required and recommended courses, admissions' personnel place significant weight on the level of courses taken, grades and grade point average.
- Two-Year State and Private Colleges: Associate degree program (two-year) requirements vary widely from a high school diploma to requirements similar to the four-year schools. If a student completes a two-year program, a student may transfer to a four-year school.
- Business and Secretarial Schools: A high school diploma is required with courses related to the intended major recommended. Technical Institutes: Requirements vary widely from a high school diploma to physics and four years of college preparatory mathematics.
- Serious consideration is given by Technical Institutes admissions officers and by employers to character, personality, work experience and extracurricular activities both in and out of school.

### **COLLEGE AND UNIVERSITY VISITS**

Each year approximately one hundred and fifty representatives of colleges, universities, junior colleges, community colleges, technical schools and other specialized schools visit Needham High School. A schedule of these visits is posted on the Senior Bulletin on the NHS homepage: <http://nhs.needham.k12.ma.us/guidance/sb>. Students and parents are strongly urged to check this each week beginning in September. In addition, our school participates in two TEC College Fairs, in October and April. These fairs provide an opportunity for students to compare one institution with another.

Many schools and colleges conduct Open House sessions. Visiting Days, and area interviews, which are publicized through the daily notices, the weekly Senior Bulletin, and the Guidance Office bulletin board. Please check individual schools' and colleges' websites for additional information about such events.

For much more comprehensive information on options and considerations regarding post-secondary plans, you are urged to consult the Post-Secondary Counseling website <http://nhs.needham.k12.ma.us/guidance/Postsecondary>.

### **UNITED STATES ARMED SERVICES VISITS**

Each branch of the Armed Services visit Needham High School to meet with interested students. These visits are set up and advertised by the Guidance Department.

### **COLLEGE TESTING PROGRAM**

Booklets describing the following testing programs are available in the Counseling Center: PSAT/NMSQT (Preliminary SAT/National Merit Scholarship Qualifying Test), the SAT Program, which includes the SAT - Reasoning Tests (Critical Reading, Mathematics, and Writing), the SAT subject tests (discontinued January 2021), the Advanced Placement Exams and the ACT Program. For students who speak English as a second language, the TOEFL (Test of English as a Foreign Language) may also be necessary. Students should consult college catalogs to determine which tests are required or recommended.

A typical testing pattern for students is as follows:



- **Junior Year**

The PSAT/NMSQT is administered in October and is comparable to the SAT. This test is designed primarily for juniors. The colleges do not recognize PSAT/NMSQT for admission requirements. The results, however, are valuable to both the student and counselor when discussing possible choices of colleges. Students whose scores are high enough (typically 1% of population) become semifinalists for National Merit Scholarships by taking this examination. The SAT is usually taken by juniors in the spring of the junior year. AP Exams will be administered in the spring of a student's Junior or Senior year to those students desiring advanced placement or college credits upon being admitted to the college of their choice.

- **Senior Year**

Students may wish to retake the SAT during the fall and winter of their senior year. The ACT (with writing) is another test used by colleges for admission and is as widely accepted as the SAT. Needham High School participates in the Advanced Placement Program (AP) of the College Entrance Examination Board. Advanced Placement Courses are the equivalent of college courses. Students who select AP courses should plan to take the AP examinations. Although Needham High School grants credit towards graduation for AP courses, college credit for AP courses may be granted individually to students by colleges participating in the College Entrance Examination Board. AP Exams will be administered in the spring of the senior year to those students desiring advanced placement or college credits upon being admitted to the college of their choice. If a student's results meets the minimum standard as set by the College Board and a participating college, students may be able earn college credit. The college a student is planning on attending makes this decision regarding awarding college credit based on AP scores. Most colleges do participate in the Advanced Placement Program.

Refer to [collegeboard.com](http://collegeboard.com) and [actstudent.org](http://actstudent.org) for exact test dates.

## **STANDARDIZED TESTING AND THE STUDENT RECEIVING SPECIAL EDUCATION SERVICES**

Students who have a documented disability may be eligible for accommodations on College Board tests such as the PSAT, SAT, ACT, and the Advanced Placement (AP) Exams. More information can be found at <http://sat.collegeboard.org/register/for-students-with-disabilities>. Students should work with their guidance counselor or special education liaison to ensure the disability documentation required for the application is complete and substantiates the need for the accommodations being requested. Applications may be completed online or on paper. It takes about 7 weeks from the College Board's receipt of all documentation for a determination to be made. Students are encouraged to make applications for accommodations for College Board tests during their 9th grade year if possible. Students who receive accommodations can use them throughout their high school careers. Once approved, a student does not need to reapply.





## Needham School Committee

February 1, 2022

---

### Agenda Item:     **Action**

#### **Vote on 2022 Annual Town Meeting Warrant Articles**

#### Background Information:

- The Select Board has opened the warrant for the May Town Meeting.

#### Action Recommended:

Upon recommendation of the Superintendent, that the Needham School Committee votes to request that the Emery Grover construction article be placed on the May 2022 Annual Town Meeting warrant. Further, that the School Committee endorses the anticipated articles to provide heating upgrades at Hillside and heating, ventilation and air conditioning upgrades at the Eliot and Broadmeadow schools.





# NEEDHAM PUBLIC SCHOOLS

OFFICE OF FINANCIAL OPERATIONS  
ANNE GULATI, ASSISTANT SUPERINTENDENT  
1330 HIGHLAND AVENUE \* NEEDHAM, MA 02492  
781-455-0400 EXT. 11206 \* 781-455-0417 (FAX)

**REVISED**

**January 20, 2022**

**To: Needham School Committee**

**From: Anne Gulati, Assistant Superintendent for Finance & Operations**

**RE: May 2022 Annual Town Meeting (ATM) Funding Request for Emery Grover Construction**

**Background:**

This request is for funds to renovate/ reconstruct the Emery Grover School Administration building at its present location, as described by BH+A Architects in the Emery Grover Feasibility Study. This study, completed in June 2020, is available for review at:

[http://www.needham.k12.ma.us/departments/business\\_\\_operations/business\\_office/enrollment\\_\\_capital\\_planning\\_\\_construction\\_proj\\_](http://www.needham.k12.ma.us/departments/business__operations/business_office/enrollment__capital_planning__construction_proj_)

This project includes the following components: historic renovation of the Emery Grover exterior (façade); renovation and modernization of Emery Grover's interior spaces; and updates to the Hillside School for use as swing space for school administration personnel during construction. A total of \$1,475,000 was approved by Special Town Meeting in October 2021 for engineering and design. The May 2022 ATM request represents the balance of the money needed for construction at Emery Grover and Hillside School. Although preliminary estimates were for a construction budget of \$20.875 million, the actual amount of the warrant article will be determined by the outcome of the schematic design currently underway by BH+A.

In addition, a companion request will be made by the Department of Public Works/ Building Maintenance to complete needed upgrades to the heating plant at Hillside School. Although Hillside is no longer being used as a school, it still is in use as swing space, most recently by the Police Department. The current heating system has critically failed and was not able to come online at the beginning of the past two heating seasons. Continued operation of the heating plant will be necessary in order to prevent the building from freezing and causing major damage. The construction portion of the heating plant upgrades will be coordinated with the building renovation to allow for use of the facility as swing space by the School Department.

A updated project schedule appears below.

**Preliminary Project Schedule:**

Design Funding: Oct '21 STM

Detailed Design Emery Grover: Oct '21 – Sept '22, 12 Months

Detailed Design Hillside Swing Space (Concurrent): Oct '21 – Mar '22, 6 Months

Bidding Hillside Swing Space: April '22 - May '22, 2 Months

Bidding Emery Grover: Oct '22 – Nov '22, 2 Months

Construction Funding: May '22 ATM (for Hillside Swing Space and Emery Grover Renovation)

Preparation of Hillside as Swing Space: June '22 – Nov '22, 6 Months



School Administration Occupies Hillside Swing Space: Dec '22 – August '24, 21 Months

Construction of Emery Grover: Jan '23 – Aug '24, 20 Months

New Building Opens: September '24

Finally, the Building Maintenance Department has requested an important project to replace the roof top units (RTUs) at Broadmeadow and Eliot Elementary Schools. RTUs distribute outside air to all spaces in the building, both heating and cooling the air, as required. The RTU's at Broadmeadow and Eliot are past their useful lives, are costly to maintain, and lack energy recovery mechanisms like modern units. In addition, some of these RTUs have compressors that run on an obsolete refrigerant, which is no longer used in the U.S., or allowed to be imported, due to its harmful environmental impact. The total cost of this project is estimated to be \$6,067,750, of which \$817,750 (for planning/ design) is requested at May 2022 Annual Town Meeting, funded by cash. The \$5.25 million project balance (for construction) will be requested the following year, for FY 2023/24.

### **Annual Town Meeting Warrant Request:**

At this time, the School Committee is asked to vote to request that the Emery Grover construction article be placed on the May 2022 Annual Town Meeting warrant. In addition, the School Committee is asked to endorse the request by the Building Maintenance Department to place both the Hillside heating repairs article and the request for RTU replacement at Broadmeadow and Eliot Schools on the May 2022 Annual Town Meeting warrant. Sample language for the Emery Grover and Hillside articles appears below, which is subject to change.

### **ARTICLE X:     APPROPRIATE FOR EMERY GROVER BUILDING CONSTRUCTION**

To see if the Town will vote to raise, and/or transfer and appropriate a sum for the renovation of and addition to the Emery Grover Building and associated grounds, including the temporary use of the Hillside School as swing space, as well as costs incidental or related thereto, to be spent under the direction of the Permanent Public Building Committee and Town Manager, and to meet this appropriation that a sum be transferred from Free Cash, a sum be transferred from CPA Free Cash and that the Treasurer, with the approval of the Select Board, is authorized to borrow a sum under M.G.L., Chapter 44, Section 7; and that any premium received by the Town upon the sale of any bonds or notes approved by this vote, less any such premium applied to the payment of the costs of issuance of such bonds or notes, may be applied to the payment of costs approved by this vote in accordance with Chapter 44, Section 20 of the General Laws, thereby reducing the amount authorized to be borrowed to pay such costs by a like amount; or take any other action relative thereto.

INSERTED BY:    Select Board

FINANCE COMMITTEE RECOMMENDS THAT:

### **ARTICLE X:     HILLSIDE SCHOOL HEATING REPAIRS AND UPGRADES**

To see if the Town will vote to raise and/or transfer and appropriate the sum of \$275,000 for the purpose of repairing and upgrading the Hillside School heating system, to be spent under the direction of the Permanent Public Building Committee and Town Manager, and to meet this appropriation that said sum be transferred from Free Cash; or take any other action relative thereto.

INSERTED BY:    Select Board

FINANCE COMMITTEE RECOMMENDS THAT:

ALG/alg





## Needham School Committee

February 1, 2022

---

Agenda Item:     **Action**

**Approve FY23 Revolving Funds Fees: Transportation, Athletics, Preschool and Community Education**

Action Recommended:

Upon recommendation of the Superintendent, that the Needham School Committee approves the 2022-2023 Revolving Fund fees and program changes for transportation, athletics, preschool and community education as submitted.

---



## ***NEEDHAM SCHOOL COMMITTEE***

**Agenda Item #:** \_\_\_\_\_

**Date:** January 25, 2022

**Item Title:** **FY 2022/23 Revolving Funds**

**Item Description:** This agenda item is to review the budgets and fees for many revolving fund programs in FY 2022/23. Additional revolving fund budgets and fees will be sent to the School Committee for review and approval over the next several months.

Comparable fees from other communities can be found at:  
[www.superednet.com](http://www.superednet.com).

**Recommendation/Options:** That the School Committee approve the attached fees for FY 2022/23

**Rationale:**

**Implementation Implications:**

**Supporting Data:** Summary of FY 2022/23 Revolving Fund Fees and Program Changes.

School Committee (circle one)

Action      Information      Discussion      Consent Calendar

Respectfully Submitted,

*Anne Gulati*

Anne Gulati  
Assistant Superintendent for Finance and Operations



**Attachment A**  
**FY 2022/23 Revolving Fund Fee Summary**

Revolving Fund	Fee FY22	Fee FY23	\$ Increase/(Decrease)	Description of Change/ Statutory Authority
Pupil Transportation	\$415/ Rider @ 2.0 Miles, Increasing to \$465 after Registration Deadline \$840 Family Cap \$415,757 Operating Subsidy	\$415/ Rider @ 2.0 Miles, Increasing to \$465 after Registration Deadline \$840 Family Cap \$415,757 Operating Subsidy	\$0/ Rider  \$0/ Family \$0/ Subsidy	No Change to User Fee or Program Subsidy. MGL Ch. 44, s53E 1/2.
Athletics	<u>High School Sport Fees:</u> \$300/ Interscholastic Athlete Per Sport \$235/ Club Athlete Per Sport \$1140 Family Cap + User Fee Venue Surcharges: \$330/ Hockey & Ski \$55/ Swim & Dive \$175/ JV2 Hockey \$190/ Sailing, Squash, Fencing \$80/ Water Polo \$250/ Snowboarding  Gate Fees: \$7 Adults \$5 Students/Seniors * Gate fees waived for fee- paying athletes.  <u>Middle School Sport Fees:</u>	<u>High School Sport Fees:</u> \$300/ Interscholastic Athlete Per Sport \$235/ Club Athlete Per Sport \$1140 Family Cap + User Fee Venue Surcharges: \$330/ Hockey & Ski \$100/ Swim & Dive \$175/ JV2 Hockey \$190/ Sailing, Squash, Fencing \$100/ Bowling & Water Polo \$250/ Snowboarding  Gate Fees: \$7 Adults \$5 Students/Seniors * Gate fees waived for fee- paying athletes.  <u>Middle School Sport Fees:</u>	\$0/ Athlete  \$0/ Athlete \$0/ Athlete  \$0/ Athlete \$45/ Athlete \$0/ Athlete \$0/ Athlete  \$20/ Athlete \$0/ Athlete  \$0/ Ticket \$0/ Ticket	Increase in swimming surcharge and club water polo surcharge. Increase Operating Subsidy by \$40,000. MGL Ch 71, s47.



	<p>\$235/ Cross Country, Field Hockey, Track, Ultimate Frisbee + User Fee Venue Surcharges: \$25/ Co-Ed Volleyball, Basketball, Softball, Boys Volleyball, Wrestling</p> <p>Operating Subsidy for Coaching Stipends of \$442,738 (Revolving Share of \$187,440)</p>	<p>\$235/ Cross Country, Field Hockey, Track, Ultimate Frisbee + User Fee Venue Surcharges: \$25/ Co-Ed Volleyball, Basketball, Softball, Boys Volleyball, Wrestling</p> <p>Operating Subsidy for Coaching Stipends of \$493,549 (Revolving Share of \$153,540)</p>	<p>\$0/ Athlete</p> <p>\$0/ Athlete</p> <p>\$40,000 Subsidy Increase (plus 10,811 changes to coaching stipends)</p>	
Integrated Preschool	<p>\$4,620/ 4-Day AM &amp; PM @ 2.5 Hrs \$3,465 / 3-Day AM &amp; PM @ 2.5 Hrs \$11,435/ 4-Day Full-Day \$8,580/ 3-Day Full-Day</p> <p>N/A</p> <p>\$250 4 Two-Week Summer \$190 3 Two-Week Summer</p>	<p>\$4,620/ 4-Day AM &amp; PM @ 2.5 Hrs \$3,465 / 3-Day AM &amp; PM @ 2.5 Hrs \$11,435/ 4-Day Full-Day \$8,580/ 3-Day Full-Day</p> <p>N/A</p> <p>\$250 4 Two-Week Summer \$190 3 Two-Week Summer</p>	<p>\$0</p> <p>\$0</p> <p>\$0</p> <p>\$0</p> <p>\$0</p> <p>\$0</p>	No change to program or fee structure. MGL Ch 71, s47.
NCE Early Childcare Program	<p>\$110/Day Infants \$100/Day Toddlers</p>	<p>\$110/Day Infants \$100/Day Toddlers</p>	<p>\$0</p> <p>\$0</p>	Program expansion from 21 children in three classrooms to 30 children in four classrooms. No change to fee structure. MGL Ch 71, s26A
NCE Tutoring	<p>\$10 Tutor Registration Fee \$50/Hour Tutoring Rate Paid Directly to Tutor</p>	<p>\$10 Tutor Registration Fee \$50/Hour Tutoring Rate Paid Directly to Tutor</p>	<p>\$0</p> <p>\$0</p>	No change to program or fee structure. Recommendation to update tutoring policyl MGL Ch 71, s47.



NCE Elementary	Fees Range from \$65-\$205 Across 115 Planned Course Offerings.	Fees Range from \$135-\$275 Across 84 Planned Course Offerings.	Varies with Specific Course	No change to program or fee structure. MGL Ch 71, s47.
NCE Summer School	Fees Range from \$154-\$665 Across 136 Planned Course Offerings	Fees Range from \$189-\$489 Across 83 Planned Course Offerings	Varies with Specific Course	No change to program or fee structure. MGL Ch 71, s71E.
NCE Summer Sports Clinics	Fees Range from \$75-\$199 Across 9 Planned Clinics	Fees Range from \$75-\$220 Across 4 Planned Clinics	Varies with Specific Course	No change to program or fees structure. MGL Ch 71, s71E.
NCE Middle	Recommend program temporarily cease operation for FY22 to design a fiscally sound fee-based model that identifies and meets the niche opportunities that complement already existing programming.	75 Registrations in the Middle School Ski Club at a fee of \$425. No additional course offerings are planned while a comprehensive needs assessment is conducted.	Varies with Specific Course	Ongoing needs assessment. MGL Ch 71, s47.
NCE Adult Education	Fees Range from \$15-\$665 Across 216 Planned Course Offerings	Fees Range from \$15-\$685 Across 288 Planned Course Offerings	Varies with Specific Course	No change to fee or program structure. MGL Ch 71, s71E.
NCE Fee-Based Private Lesson Instruction	Private Lesson Registration Fee Reinstated (\$75) Private Music Instructor Fee \$890/32 Weeks/30 Min	Private Lesson Registration Fee Reinstated (\$75) Private Music Instructor Fee \$1,060/32 Weeks/30 Min	\$0  \$170/32 Weeks	Move program to Community Ed in FY23. No change to 32 week model. MGL Ch 71, s47.





## Needham School Committee

February 1, 2022

---

### Agenda Item:     **School Committee Comments**

#### Background Information:

- Members of the School Committee will have an opportunity to report on events, information, and matters of interest not on the agenda.

#### Members of the School Committee available for comment:

Dr. Connie Barr, Chair  
Mr. Matthew Spengler, Vice Chair  
Ms. Andrea Longo Carter  
Mr. Michael Greis  
Ms. Elizabeth Lee  
Mr. Michael O'Brien  
Mr. Aaron Pressman  
Dilin Meloni, Student Representative member of School Committee

---





## Needham School Committee

February 1, 2022

---

Agenda Item:      **Information Items**

- FY23 Revolving Fund Budget Requests: Transportation (Revised)
- Disposal of Surplus Items



## Revolving Fund FY23 Budget Request - REVISED

<b>Fund Name:</b>	<b>Transportation (2303-3161)</b>
<b>Fund Manager:</b>	<b>Transportation Director</b>
<b>Executive Summary:</b>	<b>No Change to the Fee of \$415 nor operating subsidy of \$415,757</b>

### Budget Overview:

The Needham Public Schools Transportation Program provides transportation services to and from school, as well as fee-based charter services to student groups and Town-wide programs. Funding for the program is derived from the School Operating Budget, the Transportation Revolving Fund and the state-funded METCO program. The Operating Budget pays for mandated services to special education students on Individualized Education Plans, as well as to regular education students in Grades K-6 who reside more than 2.0 miles from school. Children in Grades K-6 who live two or fewer miles from school and all children in Grades 7-12 pay a fee to ride the school bus of \$415/rider, annually. These fees are collected in the Transportation Revolving Fund, where they are used to pay the cost of providing transportation to fee-based riders. Charter transportation also is provided on a fee-basis from the revolving fund. The METCO program provides transportation to students traveling between Boston and Needham on a daily basis. To keep bus fees affordable for parents, the operating budget currently subsidizes the cost of providing school bus transportation services to fee riders in the amount of \$415,757 per year. Financial assistance is available for families who qualify under income guidelines, and children eligible for free/reduced lunch do not pay a fee.

### Enabling Legislation:

M.G.L. Chapter 44 Section 53E 1/2

### Critical Issues:

The most significant issues facing Transportation are driver recruitment and retention, and ensuring service capacity. Needham Public Schools has felt the impact of the worldwide disruption in the labor market for drivers caused by the COVID-19 Pandemic. Although our contract providers are committed to doing their best to meet our home to school transportation needs, they are short-staffed. As a result, we are not always able to find substitutes to cover driver absences, resulting in routes without a driver, and often have difficulty covering our athletics and other afterschool transportation needs. These providers have asked Needham to have backup plans at the ready.

Currently, Needham has limited capacity to provide the requested transportation backup services. Although Needham has budgeted van driver substitute positions and our Transportation Director has a 7D license that allows him to cover a van driver's absence, we can only cover one van driver absence at a time, given difficulty filling the substitute driver positions. (Our Transportation Director has been driving for most of the current year, to cover a long-term position vacancy.) Additionally, Needham has been unable to hire substitute bus drivers (who require a commercial driver's license, with a passenger endorsement.) Moreover, while we do employ our Needham bus and van drivers as charter drivers for athletic and extracurricular events, these drivers are fully scheduled and are generally unable to cover the additional trips customarily driven by our contract



provider. Additionally, the District has ordered a Multi-Function School Activity Bus (MFSAB), which will allow staff members to provide extracurricular transportation to students without special licensing. (State law prevents the MFSAB from being used for home-to-school transportation.) Although the MFSAB is expected to provide additional capacity for the Transportation Department, this vehicle can only be used for extracurricular transportation and the delivery of the bus has been delayed due to supply chain issues. The cost of the MFSAB will be divided between the Athletics Department and Transportation Department.

Additionally, Needham, like other school districts, finds it difficult to recruit new drivers. Although Needham offers competitive pay for van and bus drivers (following a 2020 compensation analysis), we have found it difficult to recruit new drivers or driver substitutes. Needham perpetually advertises for full and part-time positions, but receives few or no applications. The aggressive recruitment and retention strategies currently employed by contract transportation companies and other districts, also have created a concern around Needham's ability to retain our existing drivers, as well. During the current year, NPS offered additional retention bonuses and recruitment incentives to try and increase the pool of drivers, and has marketed driver postings widely. Fortunately, as of this writing, Needham has not experienced many disruptions to its service due to the national driver shortage; Connolly has been a strong partner in preserving all services. In addition, the MFSAB will reduce the need for licensed drivers for athletics events.

Service capacity also is an issue for Needham Transportation. Historically, Needham buses have been full with a wait list of between 20-40 students. Between FY19 and FY20, Needham added two additional buses to relieve overcrowding and reduce the waitlist to between 10-15 students per year. During COVID, ridership declined dramatically as a result of social distancing and student demits. Current ridership of 1,964 (representing 31.1% of enrollment) remains depressed however, relative to pre-COVID levels. (During the 19/20 School Year, 1,914 students rode the yellow buses, representing 34% of the K-12 enrollment.) If these students return as riders, Needham will again be at a capacity maximum on its yellow buses. Needham also is at capacity on its special needs vans, a situation which has not changed as a result of COVID.

As a note, although Needham does not have a wait list in the current year, Needham has re-deployed the late bus this year to assist with home-to-school transportation in the Eliot district, which has experienced an increase in traffic congestion during this school year.

## **Support for District Vision, Mission, Goals and Objectives:**

The Transportation Program reflects the Districts equity and Portrait of a Needham Graduate vision in the following ways:

- The additional yellow buses added in FY19 and FY20 have been used to eliminate the wait list of students, who were previously unable to secure a seat on the bus. Prior to the new buses being added, there were between 40-50 students on the wait list every year. The additional buses have created equitable access to these vital services.
- Also in FY19, late bus transportation was added for middle and high school students needing to stay after school for homework help, or to participate in extracurricular activities. This service ensured that transportation could be provided to all students, including those engaged in after school activities.
- Although pupils K-6 living less than two miles from school, and all students in grades 7-12 pay a fee to ride the bus, the School Committee subsidizes this cost, to keep fees affordable to families. In addition, fees are prorated based on ability to pay: families eligible for free or reduced lunch pay no fee, while families earning less than four times the federal poverty level pay a prorated fee. Finally, fees are capped at \$840/family. The District formerly sold reduced-rate Charlie Card passes, which were primarily used by students traveling between Needham and Boston. Note, however, that these passes have not been discontinued and provided in other forms.



## FY23 Ridership

Projected ridership in FY23 is presented below. The budget scenario reflects a projected 0.1% change in projected enrollment, scaled across both St. Joe's and NPS riders:

Ridership Stats	FY21 Actual		FY22 Budget		FY22 Projection		FY23 Budget	
	Riders	% Dist	Riders	% Dist	Riders	% Dist	Riders	% Dist
St Joes Eligible	19	50.00%	19	39.75%	24	42.11%	24	42.11%
St Joes Fee Based (inc waivers)	19	50.00%	29	60.25%	33	57.89%	33	57.89%
Total St. Joes	57	100.00%	48	100.00%	57	100.00%	57	100.00%
NPS Eligible	226	18.85%	232	15.46%	271	16.51%	271	16.51%
NPS Fee Based (inc waivers)	973	81.15%	1,270	84.54%	1,370	83.49%	1,371	83.49%
Total NPS	1,865	100.00%	1,502	100.00%	1,641	100.00%	1,643	100.00%
Total Eligible	245	19.81%	251	16.21%	295	17.37%	295	17.37%
Total Fee Based	992	80.19%	1,298	83.79%	1,403	82.63%	1,405	82.63%
Grand Total NPS & STJ	1,922	100.00%	1,550	100.00%	1,698	100.00%	1,700	100.00%

## Total (Combined) Program Budget:

In FY23, the combined budget of the Transportation Program is \$3,296,229, with two major sources of funds: the Operating Budget and the fees collected in the Transportation Revolving Fund.

FY23 Budget	Operating	Fee-Based	Total
Carry-Forward	0	177,671	177,671
Current Revenue	2,680,134	617,167	3,297,301
Current Expense	<u>2,680,134</u>	<u>616,094</u>	3,296,229
Ending Fund Balance	0	178,744	178,744

The Superintendent recommends an Operating Budget allocation of \$2,680,134 and a revolving fund budget totaling \$616,094.

The revolving fund collects fees from riders living less than two miles from school, as well as revenue from the charter-based use of school buses and vans.

To encourage ridership and relieve the financial burden on families, the School Committee subsidizes the cost of providing service to fee-paying families. The current subsidy of \$415,757 represents 36% of the overall yellow bus contract.



## Total Program Staffing:

The Transportation Program is staffed by a full-time Director (paid from the revolving fund), a part-time bookkeeper (split between the revolving fund and operating budget), a full-time program specialist (funded from the operating budget), three bus drivers, eight van drivers and four part-time van monitors.

The chart below shows budgeted FTE for the program, which totals 12.03 FTE (the same as in the prior two years):

	FY21 Actual Total	FY22 Budget Total	FY22 Proj Total	FY23 Budget Operating	FY23 Budget Revolving	FY23 Budget Total
Director	1.00	1.00	1.00		1.00	1.00
Bookkeeper	0.57	0.57	0.57	0.29	0.29	0.57
Program Asst	1.00	1.00	1.00	1.00		1.00
Office Aide				-	-	
Bus Driver	2.46	2.46	2.46	2.46		2.46
Van Driver	5.71	5.71	5.71	5.71		5.71
Van Monitor	1.29	1.29	1.29	1.29	-	1.29
Total	12.03	12.03	12.03	10.75	1.29	12.03

## Revolving Fund Revenues:

The FY23 Transportation Revolving Fund budget assumes current revenues of \$510,531, which includes \$582,877 in fee revenues, plus \$106,636 in charter trip revenues. No change is proposed to the \$415 user fee, the \$840 family cap, nor to the \$50 surcharge for late registrations. Students who are eligible for free/reduced lunch receive a state-mandated 100% fee waiver. Additional income assistance is provided on the following basis: families whose income is less than twice the federal poverty level pay \$25/family for transportation; families with incomes are between twice and four times the federal poverty level pay a prorated fee per rider.

The \$510,531 fee collection assumes:

• 1,405 riders paying the \$415 fee	\$582,877
• 121 free/reduced lunch eligible riders paying \$0 (fee offset)	(\$50,215)
• 11 riders paying a prorated fee under the income-based sliding scale (fee offset)	(\$2,601)
• 54 families receiving relief under the \$840 family cap (fee offset)	(\$23,530)
• 80 riders paying a \$50 late fee	\$4,000
<b>Total</b>	<b>\$510,531</b>

FY23 fee revenue foregone under the \$840 Family Cap is summarized below:

# Stud Pro Pay	# Stud Full Pay	# Stud No Pay	Fee Revenues Foregone Under Family Cap				
			# Riders In Family	# Families	Max Fee Per Family	Fee Relief Per Family	TL Relief All Families
0	0	0	6	0	\$840	\$1,650	\$0
0	0	0	5	0	\$840	\$1,235	\$0
4	8	4	4	4	\$840	\$820	\$3,280
50	100	0	3	50	\$840	\$405	\$20,250
54	108	4		54			\$23,530



Fee revenue foregone under the income waiver for families who are ineligible for free/reduced lunch, or who do not wish to claim eligibility benefits, is shown in the chart below:

Fee Revenues Foregone Under Income Waiver (Ineligible F/R)			
Revenue Loss:			
#	Fee	Total \$	
7	\$415	2,905	
Prorated Revenue Paid:			
39	8	304	
-	Prorated	-	
	Subtotal	304	
Net Loss		(2,601)	

FY23 projected charter fee revenues are \$106,636 and are based on FY22 actual activity. Offsetting expenses total \$57,314 and are detailed in the chart below, for an anticipated net profit of \$49,322. All charter profits go toward subsidizing the cost of yellow bus transportation for families.

FY23 Budgeted Charter Program Revenue & Expenses				
	Athletics	Student	Community	Total
Revenue	87,450	6,360	12,826	106,636
Less Expenses:				
MFSAB Fuel	4,375			4,375
MFSAB Inspection	35			35
Payroll	38,160	2,787	5,902	46,849
Fuel	4,788	219	909	5,917
Tolls/Other	117	0	21	138
	47,475	3,006	6,833	57,314
<b>Net Profit</b>	<b>39,975</b>	<b>3,354</b>	<b>5,993</b>	<b>49,322</b>

Fees to parents have increased steadily over time, but at an average annual rate roughly comparable to the rate of inflation. Over the past fifteen years, the transportation fee has grown by the equivalent rate of 0.7% per year, which is less than the 1.8% compound average annual growth rate in the Consumer Price Index - Urban for the Boston area, July-July between 2006-2021. A fifteen-year fee chart is displayed below. The ongoing recommendation of the Transportation Subcommittee is for fees to remain at \$415, with only nominal increases permitted in the future, consistent with inflation.

Needham Public Schools Transportation Fees: FY08-23															
FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
\$375	\$370	\$370	\$370	\$370	\$390	\$395	\$395	\$395	\$395	\$415	\$415	\$415	\$415	\$415	\$415



## **Revolving Fund Expenses:**

FY23 Revolving Fund expenses total \$616,094 and include \$558,781 in regular transportation expense and \$57,314 in charter trip driver, fuel and travel expenses. Program expenses include salary and benefit expenses, contractual bus and van expense, vehicle maintenance and inspection, radios, fuel, routing software, driver random drug/alcohol testing, driver training and meeting expenses, memberships, bus pass expense, fee refunds, administrative supplies and other expenses. The per diem cost of a yellow school bus increases by 3.19% in FY23 from \$376 to \$388.

The charter trip expenses are increased temporarily in FY22 to reflect the purchase of an MFSAB, for athletics events and other student activities - the cost of which is split with the Athletics revolving account.

## **Ending Fund Balance:**

The FY23 budget projects a beginning fund balance of \$177,671. Projected ending fund balance in FY23 is \$178,744, which is consistent with a target three month operational reserves (or \$184,828.)

## **Capital Vehicle Replacement**

The replacement cycle for pupil transportation vehicles began in FY17 with the replacement of the two KASE buses. FY18 was the first year of the planned replacement cycle for school vans. In FY22, two lift-equipped vans are expected to be replaced. Also, in FY23, one school bus is expected to be replaced.

## **FY23 Proposed Budget:**

The FY23 combined budgets of the transportation program is attached.



Transportation Budget Projections

Transportation Program		FY21 Actual							FY22 Budget						
						<div>\$415.00</div>							<div>\$415.00</div>		
Program Revenues		Riders	Fee	% Coll	Total	Operating	Revolving	KASE	Riders	Fee	% Coll	Total	Operating	Revolving	
Carry-Over Revenue: Accumulated Surplus Prior Year Operations					327,520		327,520					388,631		388,631	
Current Year Fee Collection															
Fee Based Riders		992	\$415.00		411,680		411,680		1,298	\$415.00		538,836		538,836	
Waiver Revenue					(3,115)		(3,115)					(3,115)		(3,115)	
Revenue Loss Due to F/R Lunch		120	\$415.00		(49,800)		(49,800)		109	\$415.00		(45,235)		(45,235)	
Late Fees		-	\$50/ \$25		-		-		80	\$50/ \$25		3,600		3,600	
One-Way Rider Fees					-		-					-		-	
Revenue Loss Due to Family Cap					(32,055)	-	(32,055)					(32,480)	-	(32,480)	
MBTA Passes					-	-	-					17,748		17,748	
Subtotal					326,710	-	326,710	-				479,354	-	479,354	
Operating Revenues					2,436,160	2,436,160	-	-				2,654,013	2,654,013	-	
One-Time Subsidy from Other Op. Sources															
Current Year Fee Collection - Charter Trips					41,209	-	\$41,209.00	-				85,043	-	85,043	
Total Revenue					3,131,599	2,436,160	695,439	-				3,607,041	2,654,013	953,028	

Program Expenses		Days	\$/Unit	#/Units	# Vehicles	FTE	Total	Operating	Revolving	KASE	Days	\$/Unit	#/Units	# Vehicles	FTE	Total	Operating	Revolving	
Charter Trip Program																			
Multi Function School Activity Bus (MFSAB)																			
Vehicle (one time)							0		0										
Inspection Sticker							0		0										
Fuel Expense							0		0										
Fuel Expense						\$	1,256		\$	1,256						\$	4,636	\$	4,636
Tolls/ Other						\$	-		\$	-						\$	352		352
Salary Expense						\$	19,776		\$	19,776						\$	39,970		39,970
Subtotal						\$	21,032	\$	-	\$	21,032					\$	44,957		44,957

In District SPED Transportation Program																		
Vehicles																		
New Vehicle/ Vehicle Replacement																0		0
Fleet Response Service - \$3/mo Fee		\$2.5/mo	12 Mo	10		300		300			\$3/mo	12 Mo	9		325		325	
Fleet Response Service - Vehicle Maint.		\$1,370	per Van	10		11,678		11,678			\$1,500	per Van	10		15,000		15,000	
Fuel						5,155		5,155							0		0	
Inspection Stickers		\$35/\$70	per Van	10		0		0			\$35/\$70	per Van	10		245		245	
Radio Batteries/ Charger Replacement			per Radio	6		51		51				per Radio	6		400		400	
Tire Replacement			per Van			294		294			300/tire	per Van			3,000		3,000	
Other Vehicle Repairs						0									1,800		1,800	
Other Equipment/ Supplies						70		70							500		500	
Drivers																		
Van Driver		Days	\$/Hr	# Hrs/Day	# Vehicles	FTE					Days	\$/Hr	# Hrs/Day	# Vehicles	FTE			
Van Driver		217	\$19.95	5	1	0.71	15,238	15,238			217	\$20.63	5	1	0.71	22,389	22,389	
Van Driver		217	\$19.07	5	1	0.71	4,081	4,081			217	\$19.44	5	1	0.71	21,089	21,089	



Transportation Budget Projections

Transportation Program	FY21 Actual							FY22 Budget											
Van Driver	217	\$19.95	5	1	0.71	18,603	18,603	217	\$20.63	5	1	0.71	22,389	22,389					
Van Driver	217	\$19.95	5	1	0.71	16,985	16,985	217	\$20.63	5	1	0.71	22,389	22,389					
Van Driver	217	\$18.79	5	1	0.71	19,289	19,289	217	\$20.33	5	1	0.71	22,059	22,059					
Van Driver	217	\$19.95	5	1	0.71	15,588	15,588	217	\$20.63	5	1	0.71	22,389	22,389					
Van Driver	217	\$18.79	5	1	0.71	-692	-692	217	\$18.05	5	1	0.71	19,581	19,581					
Van Driver	217	\$18.79	5	1	0.71	12,051	12,051	217	\$19.15	5	1	0.71	20,781	20,781					
Van Driver																			
Van Driver Longevity						1,000	1,000						800	800					
Proposed Increase: Paid Holiday (4 to 10) and Vacation, Paid Vacation Increase 5																			
Van Monitor	212	\$16.36	0.8	1	0.11	0		217	\$16.54	3.2	1	0.46	11,489	11,489					
Van Monitor	212	\$16.36	1.5	1	0.21	9,027	9,027	217	\$16.54	3	1	0.43	10,770	10,770					
Van Monitor	212	\$16.36	1.5	1	0.21	0		217	\$16.54	2.83	1	0.40	10,160	10,160					
Van Monitor	212	\$16.36	3.43	1	0.49	0		0	\$16.54	0	1	-	0	0					
Van Monitor		\$ 16.36						0	\$16.54	0	1		0						
Overtime							0												
One Time Sign On Bonus																			
One Time Training																			
One-Time Retention Bonus																			
Minibus Driver @ 185 Days	0	\$16.36	0	0	-			0	\$0.00	0	0	-	0	0					
Minibus Driver Longevity													0	0					
Certified Driver Trainer Stipend						0	0						1,000	1,000					
Safe Driver Bonuses		\$250.00				3,000	3,000		\$250.00	1	8	-	2,000	2,000					
Substitute Drivers						353	353		\$17.78				7,887	7,887					
Transportation Specialist	262	\$27.31	7	0.5	0.50	28,079	28,079	261	\$30.43	7	1	0.50	27,798	27,798					
Transportation Specialist Longevity						275	275						275.00	275					
Training Expense							0						1,700	1,700					
Physical Exam and Drug Testing	1	\$50.00	1	12		225	225	1	\$50.00	1	12		600	600					
<b>Other Program Expenses</b>																			
Form Printing						0	0						0	0					
Office Supplies						0	0						500	500					
Other Expenses							0						300	300					
<b>Town Expenses</b>																			
Benefits @ 25%						0	0						0	0					
Insurance						0	0						0	0					
<b>Contractual In-Town</b>																			
Contractual In-Town Expense						0	0						0	0					
Subtotal					7.24	160,650	160,650					7.50	269,614	269,614					
							0							0					
Program Expenses	Days	\$/Unit	#/Units	# Vehicles	FTE	Total	Operating	Revolving	KASE	Days	\$/Unit	#/Units	# Vehicles	FTE	Total	Operating	Revolving		
Regular Transportation Program	Ridership Distribution							33.42%	66.58%		Ridership Distribution							23.83%	76.17%
Vehicles																			
Fleet Response Service		\$2.85/mo	12 Mo	3		90	30	60			\$3.00/mo	12 Mo	3		108	26	82		
Fleet Response Service - Vehicle Maint.		6300	per Bus	3		15,441	1,858	13,583			\$7,000	1 Bus	3		21,447	5,112	16,336		
Fuel						5,128	1,475	3,653							10,432	2,486	7,946		
Inspection Stickers		\$140	per Bus	3		375	125	250			\$140	1 Bus	3		420	100	320		
Radio Batteries/ Charger Replacement		\$60	per Radio	18		45	13	32			\$60	1 Radio	18		1,080	257	823		
Radio Purchase and Licensure						1,319	349	970											
Radio Repeater Repair						114	41	72							240	57	183		
Tire Replacement		800	per Bus	3		0					\$800	1 Bus	3		2,400	572	1,828		
Other Bus Repairs						0									2,180	520	1,661		
Other Equipment/ Supplies						261		261							439	105	334		
Allied Auto																			
Drivers							112												
	Days	\$/Hr	# Hrs/Day	# Vehicles	FTE					Days	\$/Hr	# Hrs/Day	# Vehicles	FTE					



Transportation Budget Projections

Transportation Program		FY21 Actual							FY22 Budget						
Bus Driver	185	\$23.73	5	1	0.71	20,664	20,664		217	\$24.54	5.25	1	0.75	27,960	27,960
Bus Driver	185	\$26.19	5	1	0.86	22,241	22,241		217	\$26.83	6	1	0.86	34,928	34,928
Bus Driver	190	\$26.19	6	1	0.86	26,985	26,985		217	\$26.83	6	1	0.86	34,928	34,928
Reduce Minibus Driver to 5 Hrs/Day						-946	-1,085	139							
Reduce Minibus Driver to 185 Days					-								-		
Minibus & Bus Driver Longevity					-	4,500	4,500						-	5,000	5,000
One Time Sign On Bonus															
One Time Training															
One-Time Retention Bonus															
Proposed Increase: Paid Holiday (4 to 10) and Vacation															
Certified Driver Trainer Stipend															
Bus Driver Safe Driver Bonus		\$250.00	0	2.5	-	1,510	1,510			\$250.00	0	3.0	-	750	750
Substitute Drivers						0		-					-	4,624	4,624
Physical Exam and Drug Testing		\$100.00				657	292	365		\$338.00				345	82
Training Expense						999	999							43	10
Administration															
1.0 FTE Director	262	\$41.80	8		1.00	95,770		95,770	261		8		1.00	97,207	97,207
Director Longevity						0		-						500	500
Director Cell Phone						1,020		1,020						1,020	1,020
Director Professional Development														500	500
1.0 Bookkeeper	260	\$27.57	4	1	0.57	30,056	15,205	14,851	261	\$29.02	7	0.57	0.57	30,296	15,148
7D License Stipend														1,800	900
Bookkeeper Longevity						-	-	-						0	-
Transportation Specialist	260	\$27.31	7	0.5	0.50	28,112	28,112		261	\$30.43	7	1	0.50	27,798	27,798
Transportation Specialist Longevity						-	275							275.00	275
Benefits						30,043		30,043						31,256	31,256
Bus Passes & Form Printing Expense & Postage						3,274	593	2,681						1,139	272
Refunds						152,718	-	152,718						10,777	10,777
Office Supplies						307	307							510	122
Dues & Memberships						225	34	191						234	56
Professional Development & Meeting Expenses						0								1,207	288
Versatran Support						8,406	1,174	7,232						6,219	1,482
Other Expenses						477	477							6,865	6,823
Regular Transportation Contractual Expense															
Contractual Expense						910,310	261,706	648,604						1,090,718	367,516
Midday Kindergarten during COVID															723,201
Additional Bus to Address Waitlist															
METCO Summer Transportation															
Subsidy by Operating Budget						-	376,817	(376,817.00)						-	415,757
Subtotal						910,310	638,523	271,786.87						1,090,718	783,273
MBTA Passes						0			1740		10	months		17,748	17,748
One-Time Current Year Subsidy															
Subtotal						4.50	1,360,099	764,808						4.53	1,473,393
								595,678							953,954
								-							64.7%
															35.3%
Out of District SPED Transportation Program															
Contractual Expense						1,104,567	1,104,567							1,413,865	1,413,865
BiCounty Collaborative Networking Fee						12,739	12,739							14,280	14,280
Subtotal						1,117,306	1,117,306	-						1,428,145	1,428,145
TOTAL PROGRAM EXPENSES						11.74	2,659,087	2,042,764						12.04	3,216,109
								616,710							2,651,713
Ending Fund Balance							393,396	78,730							564,396
Reclass PrePaid Revenue								-						2,300	388,632
Unallocated Fund Balance								78,730							-



Transportation Budget Projections

Transportation Program	FY22 Projection						FY23 Budget									
						\$415.00						\$415.00				
Program Revenues	Riders	Fee	% Coll	Total	Operating	Revolving	Riders	Fee	% Coll	Total	Operating	Revolving				
Carry-Over Revenue: Accumulated Surplus Prior Year Operations				225,613		225,613				177,671		177,671				
Current Year Fee Collection																
Fee Based Riders	1,403	\$415.00		582,245		582,245	1,405	\$415.00		582,877		582,877				
Waiver Revenue				(2,601)		(2,601)	11	Prorated Fee		(2,601)		(2,601)				
Revenue Loss Due to F/R Lunch	121	\$415.00		(50,215)		(50,215)	121	Free/Reduced Fee (		(50,215)		(50,215)				
Late Fees	80	\$50/ \$25		4,000		4,000	80	\$50/ \$25 Late Fee		4,000		4,000				
One-Way Rider Fees				-		-				-		-				
Revenue Loss Due to Family Cap				(23,530)		(23,530)	54	Family Cap Waivers		(23,530)	-	(23,530)				
MBTA Passes				-		-				-		-				
Subtotal				509,899		509,899				510,531	-	510,531				
Operating Revenues				2,654,013	2,654,013	-				2,680,134	2,680,134	-				
One-Time Subsidy from Other Op. Sources					5,787											
Current Year Fee Collection - Charter Trips				100,600	-	100,600				106,636	-	106,636				
Total Revenue				3,490,125	2,659,800	836,112				3,474,972	2,680,134	794,838				
Program Expenses	Days	\$/Unit	#/Units	# Vehicles	FTE	Total	Operating	Revolving	Days	\$/Unit	#/Units	# Vehicles	FTE	Total	Operating	Revolving
Charter Trip Program																
Multi Function School Activity Bus (MFSAB)																
Vehicle (one time)						\$ 31,550	\$ 31,550							\$ -	\$ -	
Inspection Sticker						\$ 35	\$ 35							\$ 35	\$ 35	
Fuel Expense						\$ 2,188	\$ 2,188							\$ 4,375	\$ 4,375	
Fuel Expense						\$ 6,440	\$ 6,440							\$ 5,917	\$ 5,917	
Tolls/ Other						\$ 130	\$ 130							\$ 138	\$ 138	
Salary Expense						\$ 44,197	\$ 44,197							\$ 46,849	\$ 46,849	
Subtotal						\$ 84,540	\$ 84,540							\$ 57,314	\$ 57,314	
In District SPED Transportation Program																
Vehicles																
New Vehicle/ Vehicle Replacement						0	0							0	0	
Fleet Response Service - \$3/mo Fee	\$3/mo		12 Mo	10		325	325		\$3/mo		12 Mo	9		325	325	
Fleet Response Service - Vehicle Maint.	\$1,800		per Van	10		18,000	18,000		\$1,800		per Van	10		18,000	18,000	
Fuel						5,155	5,155							6,649	6,649	
Inspection Stickers	\$35/\$70		per Van	10		245	245		\$35/\$70		per Van	10		245	245	
Radio Batteries/ Charger Replacement			per Radio	6		500	500				per Radio	6		500	500	
Tire Replacement	\$250/tire		per Van			3,000	3,000		300/tire		per Van			3,000	3,000	
Other Vehicle Repairs						2,400	2,400							2,400	2,400	
Other Equipment/ Supplies						120	120							120	120	
Drivers	Days	\$/Hr	# Hrs/Day	# Vehicles	FTE				Days	\$/Hr	# Hrs/Day	# Vehicles	FTE			
Van Driver	217	\$20.63	5	1	0.71	22,384	22,384		217	\$21.04	5	1	0.71	22,837	22,837	
Van Driver	217	\$18.87	5	1	0.71	20,474	20,474		217	\$19.25	5	1	0.71	20,882	20,882	



Transportation Budget Projections

Transportation Program	FY22 Projection							FY23 Budget							
Van Driver	217	\$20.63	5	1	0.71	22,384	22,384	217	\$21.04	5	1	0.71	22,837	22,837	
Van Driver	217	\$20.63	5	1	0.71	22,384	22,384	217	\$21.04	5	1	0.71	22,837	22,837	
Van Driver	217	\$20.33	5	1	0.71	22,058	22,058	217	\$20.74	5	1	0.71	22,837	22,837	
Van Driver	217	\$20.63	5	1	0.71	22,384	22,384	217	\$21.04	5	1	0.71	22,837	22,837	
Van Driver		\$18.59	0	1	0.71	0	0	217	\$18.96	0	1	0.71	20,882	20,882	
Van Driver	217	\$19.15	5	1	0.71	20,778	20,778	217	\$19.53	5	1	0.71	21,511	21,511	
Van Driver															
Van Driver Longevity						3,000	3,000					2,075	2,075		
Proposed Increase: Paid Holiday (4 to 10) and V						4,785	4,785					12,396	12,396		
						3,988	3,988							0	
Van Monitor	0	\$16.54	0	1	0.37	0	0	217	\$16.87	3.2	1	-	0	0	
Van Monitor	184	\$16.54	2.4	1	0.21	7,304	7,304	217	\$16.87	3	1	0.43	9,869	9,869	
Van Monitor	0	\$0.00		1	0.21	0	0	217	\$0.00	1.5	1	0.21	5,491	5,491	
Van Monitor	0	\$0.00		1	0.49	0	0	0	\$0.00	4.55	1	0.65	14,124	14,124	
Van Monitor		\$16.36						0	\$16.68	0	1		0	0	
Overtime															
One Time Sign On Bonus						1,000	1,000					0	0		
One Time Training		\$2,247.00				2,247	2,247					0	0		
One-Time Retention Bonus		\$1,000.00		6		6,000	6,000		\$1,000.00		8		0	0	
Minibus Driver @ 185 Days	0	\$26.83	0	0	-	0	0	0	\$27.37	0	0	-	0	0	
Minibus Driver Longevity						0	0					0	0		
Certified Driver Trainer Stipend						0	0					0	0		
Safe Driver Bonuses		\$400.00	1	6	-	2,400	2,400		\$400.00	1	8	-	2,000	2,000	
Substitute Drivers						0	0		\$0.00				8,045	8,045	
Transportation Specialist	261	\$30.43	7	0.5	0.50	27,798	27,798	261	\$31.04	7	1	0.50	28,284	28,284	
Transportation Specialist Longevity						275	275					275	275		
Training Expense						1,700	1,700					1,700	1,700		
Physical Exam and Drug Testing	1	\$50.00	1	12		600	600	1	\$50.00	1	12		600	600	
Other Program Expenses															
Form Printing						0	0					0	0		
Office Supplies						500	500					500	500		
Other Expenses						300	300					300	300		
Town Expenses															
Benefits @ 25%						0	0	0				0	0	0	
Insurance						0	0	0				0	0	0	
Contractual In-Town															
Contractual In-Town Expense						0	0	0				0	0	0	
Subtotal						7.50	244,486	244,486	0			7.51	294,358	294,358	0

Program Expenses	Days	\$/Unit	#/Units	# Vehicles	FTE	Total	Operating	Revolving	Days	\$/Unit	#/Units	# Vehicles	FTE	Total	Operating	Revolving
Regular Transportation Program							17.37%	82.63%							17.37%	82.63%
Vehicles																
Fleet Response Service		\$2.5/mo	12 Mo	3		90	16	74		\$3.00/mo	12 Mo	3		108	19	89
Fleet Response Service - Vehicle Maint.		6300	per Bus	3		18,900	3,284	15,616		7000	1 Bus	3		21,000	3,648	17,352
Fuel						5,179	900	4,279						5,231	909	4,322
Inspection Stickers		\$125	per Bus	3		375	65	310		140	1 Bus	3		420	73	347
Radio Batteries/ Charger Replacement		60	per Radio	18		45	8	37		60	1 Radio	18		1,080	188	892
Radio Purchase and Licensure																
Radio Repeater Repair						114	20	94						114	20	94
Tire Replacement		\$1,800	per Bus	2		5,087	625	4,462		800	1 Bus	3		2,400	417	1,983
Other Bus Repairs						0	-	-						0	-	-
Other Equipment/ Supplies						266	46	220						266	46	220
Allied Auto						1,000	174	826						1,000	174	826
Drivers																
	Days	\$/Hr	# Hrs/Day	# Vehicles	FTE				Days	\$/Hr	# Hrs/Day	# Vehicles	FTE			



## Transportation Budget Projections

Transportation Program	FY22 Projection							FY23 Budget								
Bus Driver	217	\$24.54	5.25	1	0.75	27,957	27,957	217	\$25.03	5.25	1	0.75	28,944	28,944		
Bus Driver	217	\$26.83	6	1	0.86	34,933	34,933	217	\$27.37	6	1	0.86	35,627	35,627		
Bus Driver	217	\$26.83	6	1	0.86	34,933	34,933	217	\$27.37	6	1	0.86	35,627	35,627		
Reduce Minibus Driver to 5 Hrs/Day																
Reduce Minibus Driver to 185 Days					-							-				
Minibus & Bus Driver Longevity					-	4,700	4,700					-	6,000	6,000		
One Time Sign On Bonus		\$2,000.00		1		2,000	2,000						0	-		
One Time Training						3,006	3,006						0	-		
One-Time Retention Bonus		\$2,000.00		3		6,000	6,000						0	-		
Proposed Increase: Paid Holiday (4 to 10) and V						2,705	2,705						6,029	6,029		
Certified Driver Trainer Stipend						2,254	2,254						1,000	1,000		
Bus Driver Safe Driver Bonus		\$400.00	0	3.0		750	750	\$400.00	0	3.0		-	750	750		
Substitute Drivers					-	0	-					-	4,717	4,717		
Physical Exam and Drug Testing		\$50.00		6		300	52	248	\$50.00		6		300	52	248	
Training Expense						1,019	177	842					1,039	181	859	
Administration																
1.0 FTE Director	262	\$45.87	8		1.00	95,770	95,770	261	\$46.79	8		1.00	104,167	104,167		
Director Longevity						500	500						500	500		
Director Cell Phone						1,020	1,020						-	1,020		
Director Professional Development						500	500						500	500		
1.0 Bookkeeper	262	\$29.02	7		0.57	29,036	14,518	14,518	261	\$29.60	7	0.57	0.57	31,560	15,780	15,780
7D License Stipend						0	-	-					900	900	-	
Bookkeeper Longevity						0	-	-					0	-	-	
Transportation Specialist	262	\$30.43	7		0.50	27,904	27,904	261	\$31.04	7	1	0.50	28,284	28,284		
Transportation Specialist Longevity						550	550						275	275		
Benefits						30,643		30,643					31,256		31,256	
Bus Passes & Form Printing Expense & Postage						3,339	580	2,759					3,406	592	2,814	
Refunds						0	-	-					0	-	-	
Office Supplies						500	87	413					510	89	421	
Dues & Memberships						225	39	186					225	39	186	
Professional Development & Meeting Expenses						0	-	-					0	-	-	
Versatran Support						8,826	1,533	7,293					9,003	1,564	7,439	
Other Expenses						1,000	174	826					3,241	2,415	826	
Regular Transportation Contractual Expense																
Contractual Expense						1,115,724	307,504	808,220					1,149,912	367,516	782,396	
Midday Kindergarten during COVID																
Additional Bus to Address Waitlist																
METCO Summer Transportation																
Subsidy by Operating Budget						-	415,757	(415,757)					-	415,757	(415,757)	
Subtotal						1,115,724	723,261	392,463					1,149,912	783,273	366,639	
MBTA Passes						0							0		-	
One-Time Current Year Subsidy																
Subtotal					4.53	1,467,151	893,250	573,901				4.53	1,516,412	957,631	558,781	
							60.9%	39.1%						63.2%	36.8%	
Out of District SPED Transportation Program																
Contractual Expense						1,409,723	1,409,723						1,413,865	1,413,865		
BiCounty Collaborative Networking Fee						12,994	12,994						14,280	14,280		
Subtotal						1,422,717	1,422,717	-					1,428,145	1,428,145	-	
TOTAL PROGRAM EXPENSES					12.04	3,218,894	2,560,453	658,441					12.03	3,296,229	2,680,134	616,094
Ending Fund Balance							99,347	177,671							(0)	178,744



## ***NEEDHAM SCHOOL COMMITTEE***

**Agenda Item #:** \_\_\_\_\_

**Date:** February 1, 2022

**Item Title:** **Disposal of Surplus: Needham High School, Emery Grover**

**Item Description:** This request seeks approval to dispose of the following items, which are either obsolete, non-functioning, or the repair cost exceeds the value of the equipment.

**From Pollard Middle School**

- 1 Broken Ice Machine

**Emery Grover**

- 365 Outdated Books/Videos Think Math! Material

**Issues:** Chapter 30B Section 16 of the Massachusetts General Laws permits a governmental body to dispose of a tangible supply no longer useful to the governmental body, but having a resale or salvage value, at less than the fair market value to a charitable organization that has received a tax exemption from the United States by reason of its charitable nature. Transactions between governmental entities also are exempt from Ch30B. Chapter 30B Section 15 and Needham School Policy #DN further authorize the disposal of surplus school property, other than real estate, having a net value of less than \$10,000 through the exercise of sound business practices by the Procurement Officer.

**Recommendation/Options:** That the Needham School Committee be informed of the disposal of the above items, to the Town Transfer Station of the aforementioned surplus equipment in accordance with MGH30B Section 15&16.

**Rationale:**

**Implementation Implications:**

**Supporting Data:** None.

**School Committee (circle one)**

Action

Information

Discussion

Consent Calendar

Central Administrator

Town Counsel

Sub-Committee: \_\_\_\_\_

Will report back to School Committee (date): \_\_\_\_\_

Respectfully Submitted,

*Anne Gulati*

Assistant Superintendent for Finance & Operations