

Andover High School

Education Plan

(February 3, 2023)

Overview of District and District Information

The Andover High School educational program documents the collaborative effort between the Andover Public Schools and the designer HMFH. It communicates information related to existing educational program offerings at Andover High School, as well as any new or expanded educational program offerings and activities applicable to the new or renovated Andover High School. Further, this document defines expected educational activities and provides an in-depth description of the district's position on key curriculum goals, objectives, and policies. Finally, it includes the process of collaboration, outcomes, and documentation of support among the stakeholders.

Ultimately, the intent of this document is to establish a clear roadmap for the development of a space summary, of conceptual design alternatives, and a basis for evaluation to identify a preferred alternative.

A Brief Introduction to Andover

Andover is a suburban town with approximately 36,569 residents according to the 2020 U.S. Census. It is located 20 miles north of Boston and 4 miles south of the city of Lawrence. Incorporated in 1646, Andover is strongly associated with New England history through significant contributions to the colonial, civil war, and industrial history of the Merrimack Valley region. The town lies at the intersection of interstate routes 495 and 93, along the Merrimack River, and is home to beautiful natural scenery and conservation trails as well as multiple international companies and many small businesses. The high performing schools and attractive environment for families has led to a growing and diversifying population that is focused on providing the best opportunities for their children. Over the past decade or more, the Andover Public School District (APS) has been experiencing an increase in the number of students in the categories of Special Education, English Learners, Socio-Economically Disadvantaged, and Homeless. Following are the most recent enrollments and percentages for Andover High School (current population 1709, based on the October 2022 SIMS report:

- Students with Disabilities: 17.3%
- First Language not English Learners: 16.1%
- English Language Learners: 1.0%
- Low Income: 12.6%
- High Needs: 26%

The school district serves 5,576 students. The Andover Public Schools educates approximately 5,576 students across 10 schools which includes a high school (9-12), three middle schools (6-8), four elementary schools (K-5), and an early learning center (Pre-K). Andover High School projections

anticipate that enrollment will exceed 1,900 students in the next 20 years, thus surpassing functional capacity by more than 500 students. Cropper projected in 2017 that enrollment will increase to 1,971 in October 2032. According to the US Census, the population of Andover rose 10% from 2010-2020, making it one of the fastest growing towns in the state.

PROJECT NEED

Two primary issues have prompted this request for renovation and/or new building: (1) current overcrowding at Andover High School (2) lack of adequate space that is also appropriately arranged and outfitted to meet the educational needs of Andover High School's student population.

The existing conditions at Andover High School are overcrowded because: (1) Enrollment is significantly higher than the building was designed to accommodate, and (2) Requirements for learning environments—particularly around special education, ELL and remedial education service delivery—have changed since the building was constructed in 1966 (addition in 1995). These two pressures have combined to produce an inadequate learning environment for all Andover High School students.

Andover High School opened in 1966 for 1,200 students in three grades (10-12). The 1995 renovation added grade 9 and space for up to 1,600 students. Since then, the need to offer adequate space for special education programs has reduced the school's "functional capacity," which considers the types of programs and services provided in classroom spaces. Per MGT, AHS' functional capacity is 1,517 students.

Today, MSBA's square footage standards for academic areas place capacity at 1,400, yet AHS has 1,705 students as of October 2022, including 35 in the ages 18-22 program who are housed offsite due to lack of space. According to the MGT and MSBA analyses, AHS is ~275 to 315 students above its functional capacity. Both the MGT and the Cropper projections anticipate that enrollment will exceed 1,900 students in the next 20 years, thus surpassing functional capacity by more than 500 students. Cropper projected in 2017 that enrollment will increase to 1,971 in October 2032.

Some of the specific concerns about the current Andover High School facility are as follows:

- Small-group instruction, ELL programming, and special education services take place in repurposed closets, storage areas, and learning spaces that are disconnected from students' primary learning setting. There is also a high need for an area to be designated for special education students in which they can cycle through behaviors in a more private setting, which would benefit the students themselves as well as other students and staff.
- Given the high number of students with diverse social, emotional and learning needs who also have sensitivities in the areas of sensory processing, consideration is needed for the acoustics, lighting and building design that would best accommodate these students.

CORE EDUCATIONAL PRINCIPLES THAT DRIVE SCHOOL DESIGN

Andover has identified five major principles that are core to the way it provides education to all students. The intent is that **the design of the new or renovated Andover High School should both reflect and facilitate the implementation of these principles**, building-wide and on a daily basis.

DATA INFORMED DECISIONS

In making decisions about curriculum, student support, space and staff, Andover uses multiple sources of evidence to inform district goals and to improve organizational performance, educator effectiveness, and student learning. As a district, APS is engaged in developing district data teams through the 7-Step Data Wise process designed by Harvard Graduate School of Education. This system supports a data-inquiry cycle devoted to creating equitable educational experiences and practices for all students. As a district, budgetary, staffing, evaluative, and programmatic considerations are designed from district-wide programmatic data analysis. APS regularly uses state, district, and school assessment results and growth data- to inform school and district goals and improve organizational performance, educator effectiveness, and student learning.

SOCIAL-EMOTIONAL LEARNING

In alignment with the goal of creating safe, caring and culturally responsive classrooms and schools, the district strives to create time and space for individual students to carve out their own place and path in a school and classroom community where each student feels affirmed, valued and included.

Andover makes a consistent effort to support programs that address social-emotional learning so students feel valued, known, and included. Core to this effort is building a strong sense of community and connection among students and adults in each classroom and school. This takes the form of teaching social skills directly by building inclusive classroom communities through such programs as *Responsive Classroom* at the elementary level and advisory at the secondary level; and engaging students in community service and service-learning experiences that provide students with voice and empowerment, while enabling them to demonstrate their social-emotional skills within the Andover community. Service experiences range from students mentoring peers with disabilities and older students mentoring younger students to food and clothing drives and environmental cleanup and advocacy.

To build empathy, Andover educators prioritize building personalized classroom communities through social-emotional learning. The goal is for every student to have a personal relationship and sense of connection with teachers and classmates and to recognize themselves as valuable and contributing members of their school community.

IMPLICATIONS FOR DESIGN

Andover's focus on social-emotional learning has **implications for the design** of the new or renovated Andover High School. New spaces in the school support opportunities for restorative practices by allowing for students to meet, collaborate, and learn from each other. Through community spaces, meeting rooms, gathering areas, and project spaces, APS students will benefit from a school that encourages opportunities for collaboration, mentoring, and peer support. Spaces at the high school that

allow for indoor and outdoor whole and small group meeting opportunities reflect APS goals for developing students' abilities to effectively communicate, share ideas, collaborate, engage in discourse, and learn from a diverse group of student peers. These communication skills are represented in how we organize, how we use space, and how we bring students together to build a strong school community that reflects the values and vision characterized by the District's organizational plan and the work towards building the APS Vision of a Graduate.

Open and collaborative spaces that allow for students to meet, collaborate, and communicate contributes to an engaging school community and atmosphere. Moving into a new building that is designed for collaboration and communication, contributes to disbanding the social isolation many students encountered during the recent COVID pandemic. Many students reported feeling detached and disconnected from their peers during a historically important time for typical adolescent social development due to the pandemic. Moving toward a more inclusive, openly engaging atmosphere will encourage students to continue to build their social and academic identities.

Furnishings that allow for individual and collaborative learning fosters teamwork as well as a growing independence as students move through grades 9-12. Collaborative spaces in libraries, project rooms, cafeterias, and hallways allow for easy teamwork opportunities, project-based learning, and opportunities for students to learn cross-content practices. The organizational structure of the high school and layout contributes to the students' sense of well-being and security through the organization and deployment of secure systems and internal school safety processes and practices that allow for students' ability to meet freely, collaborate, and engage in spending time together without worry about personal safety.

UNIVERSAL DESIGN FOR LEARNING

In alignment with its goal of providing inclusive instruction and led by the accessibility sprint team in accordance with the principles of universal design for learning, the District seeks to provide flexible learning environments that can accommodate individual learning differences. Each classroom should be equipped with an FM system that could simply be an FM system and/or be paired with a student's hearing aid. Furniture, such as standing desks, tables to accommodate wheelchairs, etc. need to be considered. Adaptive gym equipment needs to be available for those students with a physical handicap. The counseling suite should have calm/quiet rooms that have soft lighting, carpeting, and comfortable furniture where a student can regroup or receive their counseling.

IMPLICATIONS FOR DESIGN

Andover's focus on universal design for learning has **implications for the design** of the new or renovated Andover High School. For example, how does the building's design accommodate—without calling attention to—the needs of learners who have impaired vision, hearing, or mobility or learners who have autism? How will students and teachers access technology devices throughout the building? How will the school building celebrate the school community and the meaningful connections between educators and students? How can the building create learning opportunities for students to reflect on their own design choices? How can the building allow space for students to explore beyond the classroom to expand their range of learning activities?

AUTHENTIC LEARNING EXPERIENCES

In alignment with the goal of engaging all students in authentic learning experiences, the District pursues a rigorous curriculum by means of learning experiences that are meaningful and authentic.

Authentic learning engages students in the collaborative creation of products or solutions that require extended focus over time, match the complex real-world tasks and investigations of professionals in practice, and integrate knowledge from multiple disciplines.

IMPLICATIONS FOR DESIGN

Andover's focus on authentic learning experiences has **implications for the design** of the new or renovated Andover High School. For example, how can makerspaces of sufficient size and number be incorporated into the building and be best located for efficient use? How will the building include ample areas for large-project construction over extended time periods? How can spaces be made flexible so that they are suitable for small-group and large-group presentations and performances, as needed?

TEACHER COLLABORATION

Andover devotes substantial time to teacher collaboration. This investment is grounded in the belief that teachers need to work collaboratively in the study of teaching and student understanding in order to advance their practice. Teachers collaboratively develop learning tasks designed to be accessible to all students and to reveal the range of student understanding. They observe one another, analyze student work, and formulate ways to respond to gaps in student understanding through feedback and design of new learning experiences. Teachers of the same grade or content area meet regularly to focus on common challenges and solutions. Facilitated by teacher leaders and highly skilled coaches, teachers maintain a non-defensive focus on hard questions and challenging classroom issues, while increasing their content and pedagogical knowledge. The result is shared responsibility for increased effectiveness and student success.

In addition, Andover High Schools teachers form professional learning committees (PLCs) around topics of mutual interest and work together to further their own professional development. These PLCs meet during school to plan and grow their practice, support school wide initiatives, and help with curriculum development. These groups require conference rooms and small-group meeting spaces that enable them to discuss topics and design instructional strategies in a professionally supportive environment.

IMPLICATIONS FOR DESIGN

Andover's focus on teacher collaboration has **implications for the design** of the new or renovated Andover High School. For example, the building will need multiple rooms that accommodate small groups of faculty, along with write-on wall surfaces and overhead projection, furniture that can be flexibly grouped, and large tables for spreading out documents. These design elements will create a culture of learning and problem solving among faculty, and give them a space to think deeply and co-create solutions.

SUMMARY OF THE FOUR PRINCIPLES

These five principles—data driven decision making, social-emotional learning, universal design for learning, authentic learning experiences, and teacher collaboration—are intrinsic to the instructional culture of Andover High School. They are woven into teachers' professional development and they guide the growth of teachers' practice, regardless of curricular area or program. Because these core principles inspire innovation, inclusion, and limitless goal setting among both students and adults, Andover High School seeks a physical environment that will mirror the principles as it deepens students' enthusiasm for life-long learning in collaboration with others.

GRADE AND SCHOOL CONFIGURATION POLICIES

CURRENT GRADE CONFIGURATION

The district operates ten school facilities with grade groupings and 2022-2023 in-district enrollments as follows:

School Name	Type/Grade Span	2022-2023 Enrollment
Shawsheen Preschool	PreK	111
Bancroft Elementary School	K-5	546
High Plain Elementary School	K-5	535
Sanborn Elementary School	K-5	346
South Elementary School	K-5	456
West Elementary School	K-5	556
Doherty Middle School	6-8	463
West Middle School	6-8	519
Wood Hill Middle School	6-8	342
Andover High School	9-12	1702

Note: APS has an additional 62 students (ages 3-22) in out-of-district special education placements.

SCHOOL SCHEDULING METHOD

CURRENT SCHEDULING METHODOLOGY

The school day begins at 8:15 am and ends at 2:51 pm. Prior to the 2020-2021 school year, the school day began at 7:44 a.m and ended at 2:20 p.m. The 7+ H AHS Class Schedule is a yearlong rotating schedule that operates on an 8-day cycle. Students enroll in 7 credits plus an H Block. Courses meet 5 times during the 8 day rotation. Most courses are 1.0 credit yearlong classes, however some elective courses are offered as .5 credit classes for a semester.

Type of Employee	Total
Building Administrators	5
Program Coordinators	8
Athletic Department	2
Teachers	132
Guidance, Psychologists, and Social Workers	15
Clinic Staff	3
Instructional Assistants	24
Custodians	12
Secretaries	3
Unclassified (BCBA, Collins Center, Cafe, and Speech Language Asst)	21
Grand Total	221

CLASS SIZE POLICY

It shall be the policy of the Andover School Committee to provide classroom teaching personnel sufficient to carry out the stated philosophy of the Andover School System. To carry out this policy, the Andover School Committee will attempt to provide personnel consistent with the perceived needs and desires of the Town of Andover.

It shall be the intent and goal of the School Committee, while maintaining fiscal responsibility and maintaining educational policies, to provide staffing for each of the schools that will enable the principal to reduce classroom teacher-pupil ratios as much as possible. The principal shall have the discretion to provide, in accordance with this policy, those staffing patterns which, in his/her professional judgment, best meet the educational needs of pupils in his/her school.

In this regard, it is the intent and goal of the School Committee to provide classrooms at the various levels in each school as follows:

Pre-K & K: be at or below 20 students per class, and if not feasible, to within a range of 16 to 24.

Grades 1 & 2: be at or below 23 students per class, and if not feasible, to within a range of 19 to 27.

Grades 3-5: be at or below 25 students per class, and if not feasible, to within a range of 21 to 29.

Grades 6-8: be at or below 25 students per class, and if not feasible, to within a range of 21 to 29.

Grades 9-12: be at or below 25 students per class, and if not feasible, to within a range of 21 to 29 and an advisory group range of 15-17 students.

It is recognized that in attempting to provide these average class sizes, that classes may fall above or below the stated goal. In the event that classes increase (or decrease) above (or below) the goal by more than 4 students, additional (or fewer) classes, teachers, or instructional assistance time may be provided. Further deviations from this standard may be approved by the Superintendent, providing fiscal responsibility and educational policies are maintained.

To support this policy, the following actions are to take place:

1. As part of the annual budget development process, the Superintendent will advise the School Committee on projected classes and teacher-pupil ratios. This is to more accurately assess staff needs for the coming school year.
2. By the end of October, the Superintendent will present a final class size report to the School Committee for information. Except in extreme circumstances, classes will not be interrupted relative to increasing or decreasing staff after the first two weeks of school.

The School Committee recognizes that availability of classroom space, staff, school schedule, and other factors will govern the number of students assigned to a class.

Sample Schedule

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8
8:15 - 9:19	A ₁	B ₁	A ₂	B ₂	C ₃	A ₄	B ₄	C ₅
9:23 - 10:43	C ₁	D ₁	H ₂	A ₃	B ₃	H ₄	A ₅	B ₅
10:47 - 11:49	H ₁	F ₁	D ₂	H ₃	F ₃	E ₄	D ₄	H ₅
11:49 - 1:43	E ₁	G ₂	C ₂	G ₃	D ₃	F ₄	E ₅	F ₅
1:47 - 2:51	G ₁	E ₂	F ₂	E ₃	G ₄	C ₄	G ₅	D ₅
	BDF	ACH	BEG	CDF	AEH	BDG	CFH	AEG

7 + H Block Schedule

The Andover High School schedule was changed in 2017 from a semester schedule to a year long schedule to allow continuity of instruction. Yearlong courses allow students time to process and retain information. The schedule includes varied instructional time periods (60 minutes, 75 minutes, and 80 minutes) that provide flexibility in instruction. Rotating time periods means classes are offered at different hours of the day, thereby optimizing learning for all classes.

In addition to 7 academic credits, all AHS students participate in an advisory block and in student enrichment blocks (H-Block) . H-Block is designed to personalize the students' school experience at Andover High School and create a strong sense of community. This time is used to deepen students' relationships with teachers. Students also participate in activities designed to improve students' social-emotional learning. The enrichment block allows students to stay on track in their learning and maximize their learning potential through individualized support.

The schedule incorporates teacher to teacher collaboration time within the school day. During that time common planning can occur within a department or content strand to discuss curriculum, instruction, and assessment. Common planning includes planning interdisciplinary teaching, project based units, and other district initiatives This time can also be used for collaborative data analysis of student work.

PROPOSED CHANGES

There is a significant need for adequate classroom, small-group instruction, and flexible space so that all teachers and specialists can be assured of appropriate space all day/every day in order to provide a consistently high quality of instruction, support, and intervention for all students.

The current facility impedes the ability to schedule classes. Andover High School opened in 1966 for 1,200 students in three grades (10-12). The 1995 renovation added grade 9 and space for up to

1,600 students. Andover High School now serves grades 9-12, plus special needs students in a program for ages 18-22. AHS follows the MA Core requirements for high school program of studies. Students are expected to have 4 years of English and math, 3 years of lab sciences and history/social studies, 2 years of a world language, 1.5 credits in either the arts or digital learning, and follow state law for PE/health. Most students have an opportunity for 3.5 credits of elective offerings. The school's daily room usage exceeds 95%, and 75% of faculty members lack an assigned classroom. Some faculty teach in 3 or 4 classrooms and spend time traveling across the building versus supporting students before/after class. There are no departmental office spaces or workrooms to provide a home base for teachers traveling between classrooms. They must use the library, cafeteria, or other public space for planning, grading, and one on-one student meetings. Many closets and offices have been converted into teaching spaces, leaving insufficient storage space for instructional materials, spare furniture or student projects.

80% of classrooms are smaller than MSBA-recommended sizes and there are classes with 25+ students. As a result, classrooms are crowded which limits activities and projects. The library is half the size needed for the current enrollment numbers. The cafeteria's small size requires four lunch periods, adding complexity and disruption to the schedule. Corridors and stairways are crowded during class changes, creating concerns for emergency egress. Space for student service classrooms/support is only 53% of MSBA guidelines and significantly compromises the existing programs.

Limited space prevents Andover High School from adding or expanding career technology and STEM programs; those that do exist are taught in former storage rooms. Course offerings in all areas are capped. Andover High School is limited in offering courses beyond the basic core curriculum and provides only introductory courses in arts, engineering, robotics, and computer programming.

9th Grade Academy

Students with a successful transition from 8th to 9th grade are more likely to be academically and socially successful in high school. Research has identified areas that help in the transition from middle to high school:

1. Communication to students and families.
2. Focus on academic skills (executive functioning skills)
3. Social emotional support.
4. Review of data throughout the year

In Andover Public Schools, students attend three middle schools of approximately 500 to 600 students. Andover High School has a student population of approximately 1700 students. In the new or renovated Andover High School there will be a dedicated space for all 9th graders to have their core academic classes. The space design will positively impact student educational goals, mindsets, engagement, and behavior by offering students a smaller school experience in which to learn about the high school experience. As three middle schools transition into one high school, we envision students entering in a 9th grade Freshman Academy. The 9th grade Freshman Academy space will provide students with a sense of belonging, a team-like environment, and will offer students a location that enables a thoughtful and well-planned integration into the high school experience. This space is expected to provide students the opportunity to come together as one freshman class, meet, and develop friendships-along with

learning both the academic and social aspects of high school life that students face when entering a high school environment. The dedicated 9th grade academic program will offer students core academic content and specialist classes designed to accommodate grade-level expectations for students' academic, adolescent, and personal development. Teachers and specialists can be assured of appropriate space all day/every day in order to provide a consistently high quality of instruction, support, and intervention for all students.

TEACHING METHODOLOGY AND STRUCTURE

ADMINISTRATIVE AND ACADEMIC ORGANIZATION/STRUCTURE

Andover High School is led by a full-time building principal and three assistant principals, with four administrative assistants. Teachers are organized by departments.

The current administrative structure, with a single lead administrator and three assistant principals, would need to change to serve the higher enrollment. The school would need another building administrator to support the students' academic, social-emotional and instructional growth as well as sustain the capacity for relationship building. This additional administrator would focus on the eighth to ninth grade transition.

The administrative office space should be large enough to support this projected office staff with areas for optimum office functionality. The office area should provide for a safe and secure entrance to the building and should enhance opportunities for family interaction and community outreach.

Andover High School is staffed in accordance with the district's class-size policy, based upon student enrollment and any special programs or services housed at each school. Overall staffing may increase as the district implements instructional coaches or for additional instructional assistants to serve students with special needs; otherwise, staffing is not expected to increase or decrease for any reason other than enrollment.

METHODOLOGY SPECIFIC TO CONTENT AREAS

Andover High School is accredited by the New England Association of College and Secondary Schools. It is a four year suburban public high school which offers a comprehensive and diverse curriculum. Andover High School has won numerous awards throughout the years including the gold medal in the international category of Science & Technology Innovation at the 37th Beijing Youth Science Creation Competition, Siemens Award for Advanced Placement Excellence in Math and Science and the Vanguard Award from Mass Insight. Our students excel not only in academics, which culminates with many of them being accepted to top tier colleges, but also in a variety of extra-curricular activities.

After graduation, 89% of AHS students attend a four-year college, 3% attend a two-year college, 3% attend a post-graduate program or train in a trade, 3% take a gap year, and 2% enter the workforce directly.

As of 2021, Andover High School has a graduation rate of 97.6% and the dropout rate is 3%. The attendance rate for Andover High School students in the 2021-22 school year was 94.4%.

Andover High School has established fundamental guidelines that are essential for a well-rounded Andover High School graduate. All students must enroll in the courses that fulfill the central curriculum as defined below. In addition, students earn elective credits by selecting courses from the departments of their choice. All students must earn a minimum of 24 credits with specific credit requirements in the following areas: English - 4 credits, Social Studies - 3 credits, Math - 4 credits, Science - 3 credits, World Language - 2 credits, Physical Education - 2 credits, Health Education - 1 credit, Arts: Performing/Visual or Digital Learning - 1.5 credits,

Andover High School offers a number of special programs for students to enrich and expand their academic experiences. The Global Pathways Scholar Program is a series of experiences (over three years) for students and faculty to thrive as global citizen-scholars, in our complex, dynamic, and diverse global society. Global Pathway Scholar students are guided by faculty advisers as they travel their global path through world language, immersive travel, service learning, a Capstone research project, and other experiences that lead toward the Endorsement of Global Engagement.

The AHS Senior Capstone Project (CAPS) is an advanced research seminar. CAPS students pursue a researchable question through quantitative and qualitative research methods along with a substantial field-based inquiry project. CAPS offers students a chance to create an independent academic experience, with the focus on authentic inquiry. The goal of the CAPS Seminar is for students to merge their various interests, curiosities, and passions with their academic and intellectual lives, that take shape through Original Field Research, an Inquiry Paper, a web-based Project Portfolio, and a faculty/alumni judged Community Presentation that communicates all the student has learned.

Andover High School provides opportunities for juniors and seniors to take college-level courses and earn credit simultaneously toward high school completion and their future college degrees through dual enrollment. Andover High School provides juniors and seniors with the opportunity to enroll in online elective courses through a variety of educational institutions including the Virtual High School Consortium.

AHS has joined AVID (Advancement Via Individual Determination), a global nonprofit organization dedicated to closing the achievement gap by preparing all students for college and other postsecondary opportunities through an elective class, where students learn organizational and study skills, work on critical thinking, asking probing questions, get academic help from peers and college tutors, and participate in enrichment and motivational activities that make college seem attainable.

Andover High School offers 22 sports and 57 teams, including Unified Basketball and Track. The athletics program is an integral part of the students' total high school experience. Sixty percent of the student body participate in the Andover High School's athletic program.

Andover High School offers over 90 after school clubs and activities, such as Mock Trial, Robotics, Interact Club, and the Drama Guild. An active National Honor Society provides weekly after school tutoring and organizes an annual scholarship benefit.

While there is no community service requirement, Andover High School students are active giving back by sponsoring blood drives, coordinating fundraising events and volunteering at local schools and community organizations.

AHS is a community school member of the national program A Better Chance. Year-round, Andover High School participates in the AFS Inter-cultural Exchange Program as well as the Rotary Youth Exchange Program. During the winter, the Andover High School community has hosted students from South Korea and China. For the last 15 years Andover High School has had an exchange program with a school in Strasbourg, France.

Andover High School has strong community partnerships with businesses and other non-profit organizations in the local community which supports our students and teachers, by providing additional resources to extend learning experiences inside and outside of the classroom. The AHS Parent Advisory Council (PAC) is a voluntary, non-profit organization which supports the school by promoting a spirit of cooperation between the student body, the administration, faculty and the community. The PAC provides financial support for school initiatives and organizes events to build community for our students. The Andover Coalition for Education (ACE) partners with the Andover Public Schools to support innovative, curriculum enhancing, system-wide initiatives that will inspire our students to succeed in facing today's global challenges. ACE provides grant opportunities for teachers to receive support for learning projects in their classrooms. ACE sponsors a large Scarecrow Festival on Main Street each October which raises funds for the Andover Public Schools. Additional Andover High School community partnerships include the Service Club of Andover which sponsors a Credit for Life Financial Literacy Fair, and the Andover Rotary Club, which sponsors Interact, a student service organization.

ENGLISH LANGUAGE ARTS/LITERACY

The mission of the Andover High School English Department is to prepare all students to successfully participate in a modern society in which literature and literary traditions are valued and passed on, clear communication and successful collaboration are essential to the common good, and creative endeavors are wholeheartedly supported. We offer a program that strives to develop literate and literary citizens who can read and think critically and creatively, who can analyze a variety of texts, and who are able to write with power and clarity for various purposes. Students also learn research and study strategies and they develop communication and active listening skills. By experiencing a relevant and rigorous English curriculum, Andover High students will be well-positioned to pursue advanced studies in any area of interest.

Andover High School students are required to earn four credits of English and to take English all four years to qualify for a diploma.

Our curriculum is informed by the Guiding Principles for English Language Arts and Literacy Programs as outlined in the 2017 Massachusetts Curriculum Framework for English Language Arts and Literacy. In addition to the course specific essential questions we have developed, students in grades 6-12 explore the overarching essential questions: Who am I as a reader, as a writer, as a speaker, and as a thinker?, Why are reading, writing, and storytelling essential components of the human experience?, and How does English Language Arts expand our perspective?

Our courses are designed to:

- Develop thinking and language through interactive learning
- Use literature to develop student understanding of their literary heritage
- Draw on informational texts and multimedia to build academic vocabulary and content knowledge
- Develop oral language and literacy
- Emphasize writing arguments, explanatory/informative texts, and narratives
- Hold high expectations for all students
- Provide explicit skill instruction in writing
- Build on the language, experiences, knowledge and interests of students
- Nurture students' sense of their common ground and prepares them to participate responsibly in school and civic life
- Reach out to families and the community to sustain a literate society

DESIGN IMPLICATIONS OF THE ENGLISH LANGUAGE ARTS PROGRAM

- Spaces that are large enough to provide students with collaborative space where they can work with groups without being impacted by the other working groups
- Rooms that allow students to hear each other when engaged in discourse
- Some large rooms for interdisciplinary work and co-teaching work
- Classrooms that allow teachers to create authentic communities that honor their students with student work on full display.
- Spaces for classroom libraries and storage of materials
- Spaces for students to work one-on-one with teachers and IAs to get small group and individualized instruction
- Collaborative space for teachers to work together
- Space to collaborate right outside the classroom
- Spaces to hold celebrations of student work with the school community and the outside community

MATHEMATICS/COMPUTER SCIENCE

The Andover High School Mathematics Department offers a comprehensive four-year Mathematics program, whose mission is to enable every student to reach their math potential in a supportive, academically focused environment. In every mathematics course, we want students to develop a variety of math expertise as outlined by the Standards for Mathematical Practice in the *2017 Massachusetts Curriculum Framework for Mathematics*. These standards complement the content standards so that students increasingly engage with the subject matter as they grow in mathematical maturity and expertise throughout the elementary, middle, and high school years.

What do we currently offer students?

- Multiple teachers sharing classrooms.
- Limited white board space for students to practice and demonstrate their understanding.
- Very limited ability to change the configuration of the seating.
- Difficult for teachers to provide one-on-one or small group support to students.
- Walking between students is difficult with backpacks and the number of desks in a classroom.

DESIGN IMPLICATIONS OF THE MATH PROGRAM

- More white board space for students to work collaboratively on problem solving.
- Classrooms need flexible seating for students to work collaboratively and independently.
- Spaces for students to work one-on-one with teachers and IAs to get small group and individualized instruction.
- Collaborative space for teachers to work together (preferably separate from lunch space).
- Every classroom needs ample storage space to house math manipulatives, with easy access for the students to use them daily.
- Special attention is needed for the placement of technology within the room (specifically projectors and document cameras), which should be positioned to allow teachers and students to share their thinking and their work without replacing the workable white board space.

SCIENCE and ENGINEERING

The mission of the Andover High School Science and Engineering Department is to prepare all students to constructively participate in a modern society in which science and engineering influence nearly every aspect of their lives. We offer a program that strives to develop scientifically literate citizens who possess an understanding of the nature of science and who have the knowledge base necessary to critically analyze scientific claims and assertions. By experiencing a relevant and rigorous science curriculum and developing their knowledge of the engineering design process, Andover High students will be well positioned to pursue advanced studies in science and engineering and careers in scientific and engineering fields if they choose.

Andover High School students are required to successfully complete three credits of science courses to qualify for a diploma. All 9th grade students are enrolled in Physical Science and sit for the Introductory

Physics MCAS exam in June of their freshman year. Biology is studied by 10th grade students, followed by Chemistry, Physics, and other electives. Once this basic foundation of science study is completed, students are offered a rich variety of elective and Advanced Placement courses from which to choose. Laboratory investigations and knowledge of lab safety practices are critical components of Andover High science courses. Participation in directed and inquiry-based scientific investigations requires students to think critically and problem-solve creatively, to work collaboratively with peers, and to communicate effectively.

What do we currently offer students?

- Our current science facilities include 18 instructional spaces of which 9 are standard classrooms (front demo bench and student desks), 5 are hybrid classrooms (front demo bench, student desks, perimeter lab stations), and 4 standard laboratory spaces (1 biology, 1 physics, 2 chemistry).
- Each classroom and lab space is organized and equipped for instruction in a particular science sub-discipline.
- Science classrooms are equipped with level, tablet-type desks that can be arranged into a variety of configurations based the lesson activity but do not offer adequate space nor utilities to conduct complex or involved experiments and investigations
- All 9th grade students take physical science but we have only one physics lab available which is used primarily by upper level physics classes. To allow physical science students to regularly conduct experiments and activities, lab tables have been added along the perimeter of two of our standard classrooms in order to facilitate lab work. These make-shift lab spaces lack necessary access to electrical outlets requiring the use of extension cords to power lab equipment. The addition of the tables has also significantly reduced the total floor space available for students to move.
- About half of the science classrooms have been modified with acoustical ceiling tiles to support the needs of hearing impaired students. A couple of rooms have had a ceiling mounted amplification system installed. Scheduling classrooms becomes more complicated when students requiring hearing accommodations can be scheduled only for classrooms with acoustical tiles unless portable amplification systems are made available.
- All four of our laboratory spaces are crowded when classes of 26 students are present. Teacher supervision of students can be difficult at times due limited space and close proximity of the students.
- The infrastructure of our science classroom was constructed with the addition of a new science wing in the late 1990's. Consistent problems with classroom climate control, plumbing fixtures, electrical outlets, and burst pipes have been a challenge for teachers and students since the facility's completion.
- Our facility does not provide enough adequate space for teachers to prepare classes when they are not teaching. Some teachers have personal work spaces in laboratories that are heavily used.

DESIGN IMPLICATIONS OF THE SCIENCE PROGRAM

- Rooms should be flexible to accommodate all science disciplines and to meet evolving instructional and curricular needs.
- Combination lecture / lab classrooms should be the norm - all of the learning associated with the curriculum of a particular course will be done in a single space. Traditional, discipline-specific laboratories that are visited by different groups of students for specific purposes are not used. Both lab and lecture table configurations must be accommodated in every designated science lab room.
- Relevant lab equipment and instructional resources that are regularly used are stored in each classroom lab.
- Sturdy, standing-height two-student tables should match the height of peripheral countertops so that students perform lab work standing (preferable) and "seat work" on stools. Two-student tables (not larger) are recommended so they can be moved into a variety of configurations.
- Utilities (plumbing, ventilation, electrical) are located along the perimeter of the room. Ceiling mounted electrical outlets that can drop to all locations in the room are also an option. There are no fixed utilities or furnishings located in the central area of the lab classroom.
- In order to accommodate the design and construction of student projects, adequate storage space in each classroom for ongoing student work must be available.
- Mobile lab stations are organized as peninsulas perpendicular to the perimeter of the room to allow for clear sight lines for the supervising teacher to ensure safety.
- Teacher demonstration tables will not be fixed in place in order to increase the flexibility of the classroom space.
- Adequate science preparatory spaces to serve each classroom/lab. These prep rooms would be separate from a secured chemical storage space.
- Classrooms are equipped with audio amplification devices so that students are better able to hear the teacher regardless of their location in the room.
- In order to transport science equipment between classrooms on separate floors, the science area of the school should be located near an elevator.
- Rather than building a single school greenhouse, classroom windows should be designed to allow plants to be placed on shelves or moveable racks with access to light from classroom windows.
- Science classroom labs should be equipped with blackout window treatments to allow for any investigations that require the regulation of light levels
- Lab classrooms will have no more than 24 students. Research indicates that the ratio of accidents to square foot per student greatly increase when there is less than 60 square feet per student, or more than 24 students per classroom* (Motz, Biehle and West, The NSTA Guide to Planning School Science Facilities, 2nd Edition, National Science Teachers Association 2007, <http://www.nts.org>)

SOCIAL STUDIES

The mission of the Andover High School Social Studies Department is to prepare students to be critical thinkers, effective communicators, active and aware participants in American society, and engaged citizens of a global community. We offer a program of studies that exposes students to both historical and current topics within the United States, as well as around the world. Students are asked to examine both primary and secondary sources, and to use evidence to substantiate claims made in writing, dialogue, debate, and presentation. The department challenges students to *write and speak effectively with clarity and purpose* and to *advocate for positive change through active participation in the democratic process*.

What do we currently offer students?

- Multiple teachers using the same classroom
- Wall space is currently not used to support learning
- Old furniture that is difficult to move into different configurations
- No flexible space for combining multiple spaces and having multiple classes come together for project based learning and simulations/conferences

DESIGN IMPLICATIONS OF THE SOCIAL STUDIES PROGRAM

- Multiple large spaces to bring multiple classes together for project based activities and simulations
- Flexible furniture that can easily be moved into multiple configurations
- Integrate all content areas in learning spaces (instead of department focused spaces) to encourage and support interdisciplinary learning and classes.
- Classrooms of ample size to support community building, movement, and classroom performances
- Small group tables for art creation and exploration of artifacts
- Multi-purpose spaces in the school for assemblies of students and community members who will provide feedback on performance-based strategies and serve as audiences for the culminating performances that bring closure to each unit
- Wall space for displaying timelines, *cordells*, and digital projection
- Storage cabinets and shelving for classroom libraries and supplies

World Languages

The World Language (WL) program's role is to help students develop the cognitive skills necessary for language acquisition.

The WL program currently offers four languages--Chinese, French, Latin, and Spanish--so that students can achieve proficiency in at least one language other than English, and start realizing the benefits that multilingualism has to offer.

Following the standards set by the American Council on the Teaching of Foreign Languages (ACTFL), the WL program places primary emphasis on real communication. ACTFL organizes the Communication standard into three modes: Interpersonal, Interpretive and Presentational.

The WL program aims to prepare students to:

1) Become effective communicators using the language to engage in meaningful conversations (interpersonal), to understand and interpret spoken language and written text (interpretive), and to present information, concepts, and ideas (presentational).

2) Collaborate using their native and acquired languages to learn from and work cooperatively across communities and cultures with global team members, sharing responsibility and making necessary compromises while working toward a common goal.

3) Frame, analyze, and synthesize information as well as negotiate meaning across language and culture in order to explore problems and issues from their own and different perspectives. Ultimately, students realize that people around the world have multiple ways of viewing and experiencing life.

4) Create and innovate to respond to new and diverse perspectives with respect and appreciation. Students use language in imaginative and original ways to make useful contributions, be agents of change and pursue social justice at the local, national and international levels.

What do we currently offer students?

- A traditional classroom space with a mismatch of furniture
- Student access to hallways for small group work, recording themselves, one-on-one teacher assessment
- Teachers share classroom space and sometimes move from one room to another; when teachers have more ownership of a room, they are more likely to display student work, post learning tools around the room, maintain cleanliness and functioning of technology

DESIGN IMPLICATIONS OF THE WORLD LANGUAGE PROGRAM

- Spaces that are large enough to provide students with collaborative space where they can work with groups without being impacted by the other working groups
- Rooms that allow students to hear each other when engaged in discourse
- Acoustics that allow students to hear audio, video recordings regardless of where they sit in the classroom
- Some large rooms for interdisciplinary work and co-teaching work or to combine classes for cooperative learning or outside speakers
- Classrooms that allow teachers to create authentic communities that honor their students with student work on full display.
- Large white boards in the classroom for student engagement
- Accessible outlets and charging spaces for student laptops
- Flexible furniture configurations for group work
- Spaces for classroom libraries and storage of materials (WL teachers use props and art supplies on a regular basis)
- Spaces for students to work one-on one with teachers and IAs to get small group and individualized instruction

- Collaborative space for teachers to work together (preferably separate from lunch space)
- Space to collaborate right outside or adjacent to the classroom for students to record speaking, teachers to assess speaking, etc.
- Spaces to hold celebrations of student work with the school community and the outside community
- Kitchen space or facilities (sink, refrigerator, counters) for culinary cultural connections

SPECIAL EDUCATION PROGRAMS AND SERVICES

The Andover Public Schools Student Services team provides evaluations, consultation, and direct services to students with disabilities, students with medical needs, students with mental and behavioral health challenges, homeless students, and students who require accommodation plans. Andover High School also houses all district wide programs. These include: Language Based Program, T- 3, SAIL, EXCEL, BRIDGE and our 18-22 program TOP, which is housed at the Central Office with classrooms at the Andover Youth Center in the Cormier Center. Students with disabilities make up 17 percent of students at Andover High School. The table below outlines the roles, number and function of the current special education staffing. In a school with a projected enrollment of 1700, the spaces would have to increase by approximately 50 percent.

STAFF

Type of Provider	Number	Function
Nurse	2.0 FTE	Provides all clinical care of students and medication management; assists with screenings and ensures compliance with vaccination and health documentation requirements; attends all health-related IEP meetings; creates medication plans and health care plans; offers emergency allergy and OSHA training for all staff; handles health-related parent communications.
Health aide	1.0 FTE	Assists with student vision and hearing screening and the management of health records and emergency information.
Paraprofessionals	18 IAs (SAIL and Inclusion) 4 (EXCEL) 4 (Bridge) 3.6 (TOP) 1 T-3	Support students throughout their school day, including delivering educational programming, supporting inclusion, following behavior plans, and collecting/graphing data.
Special Education Teachers (general)	15 (1.0)	Support students in inclusion classrooms as well as in small-group specialized reading/writing/math.

Special Education Teacher (BRIDGE)	1 (FY23)	Develop, monitor, and update all educational programming.
Special Education Teacher (EXCEL)	1 (FY23)	Develop, monitor, and update all educational programming.
Special Education Teacher (T-3)	2 (FY23)	Develop, monitor, and update all educational programming.
Special Education Teacher (TOP)	3.0 (FY23)	Develop, monitor, and update all educational programming.
Vocational Specialist	1.0 (FY23) -SAIL, EXCEL, BRIDGE	Develop, monitor, and update all educational programming.
Speech & Language Pathologist (SLP)	1.0 FTE (BRIDGE, EXCEL and TOP) 1.5 (SAIL and all other special services)	Provides consultation and direct services both in the classroom and in small groups for students with communication disabilities; completes evaluations for initial and 3-year re-evaluations.
Occupational Therapy	1.0 FTE (BRIDGE) .8 FTE	Provides services as delineated by students' IEPs to address fine motor skills, executive functioning, sensory needs, and evaluates student needs in sub-separate settings. In addition OT consults with staff to address students' motor and sensory needs.
Augmentative & Alternative Communication Specialist (AAC)	.1 FTE	Provides AAC evaluations; works collaboratively with the BRIDGE SLP to support students who require an alternate communication system; provides ongoing training to staff and parents for students who utilize low-tech and high-tech devices.
Assistive Technology Specialist (AT)	Part-time	Consults to school-based team; provides upfront training and review of products that could support students' learning needs/styles.
Physical Therapist (PT)	Part-time varies depending on student need.	Provides services as delineated by students' IEPs to address motor skills and evaluates student needs in sub separate needs. In addition she consults with staff to address students' physical needs and needed adaptive equipment.
Adaptive Physical Education Teacher	.15 FTE	Provides direct instruction in physical education for students with cognitive and/motor and developmental delays.

Teacher of Students with Hearing Impairments (THI)	Part-time	Provides direct and/or consultative special education services specific to hearing loss.
Low-Vision Specialist/Teacher of Students with Visual Impairments (TVI)	Part-time	Provides direct and/or consultative special education services specific to vision loss.
Board Certified Behavior Analyst (BCBA)	.8 FTE (BRIDGE) .6 FTE	Provides weekly consultation to the BRIDGE program. BCBA consultation includes any combination of the following: observations of the student; developing data collection systems, behavior plans or skills development programming; data analysis; teacher/team meetings; teacher/team training.
Registered Behavior Technician (RBT)	2.0 FTE	Assists a BCBA in the direct application of services; may take data, complete observations, carry out behavior plans, and perform other duties assigned by the BCBA.
Social Worker	4 FTE	Assists with lunch groups/social skills; performs check-ins for regular ed and special ed students; is liaison between school and private service providers.
School Psychologist	2.0 FTE 1.0 (T-3) 1.0 (Special services)	Evaluates students; consults on mental health issues.
Evaluation Team Facilitator (ETF)	2.0 FTE	Manages all aspects of special education compliance, timelines, coordination of evaluations, IEP meetings, and services in the school.
Special Services Secretary	1.0 FTE	Handles scheduling and special education paperwork.

SPECIAL EDUCATION PROGRAMS

INCLUSION CLASSROOMS

AHS serves 303 children with disabilities and 170 children with Section 504 accommodation plans, distributed among 13 classrooms. Services include push-in from itinerant specialists, pull-out for reinforcement of skills, co-teaching, evaluation, and consultation. There are 23 full-time special education teachers. Inclusion classrooms are regular education classes where students with educational disabilities are educated along with their nondisabled peers.

DESIGN IMPLICATIONS OF INCLUSION CLASSROOMS

- AHS's special education teachers are currently housed in five spaces that are smaller than classrooms. The room size, however, should be adequate to have two to four small groups running at a time, allowing for dividers to acoustically buffer sounds. This would allow for more accommodating learning environments for students who may be spending more time in the learning spaces, such as children in the SAIL model.
- One additional small space (area 500), (for a total of 6) should be included to provide for additional small-group specialized instruction, or growth in FTE in special education.
- One breakout space (area 850) adjoining inclusion classrooms would provide opportunities for pre-teaching and reteaching within the inclusion classrooms. The spaces could be accessed by ELL teachers, reading specialists, special education teachers, speech/language pathologists and classroom teachers who require a quiet space and who are serving students in the two classrooms. Since every standard classroom has the potential to be an inclusion classroom at multiple times during the day, each regular classroom needs to have an adjoining breakout space.

SOCIAL ACADEMIC INDEPENDENT LEARNING (SAIL) PROGRAM

SAIL is a partial inclusion program, which Massachusetts regulations define as the student being in the special program between 21 percent and 60 percent of the day. Andover High School currently serves 26 students in the SAIL program (8 in grade nine, 11 in grade ten, 4 in grade eleven, and 3 in grade twelve). The students are served by six teachers (two ELA, two math and 1 science and 1 social studies, in addition to two assistants).

SAIL is designed to meet the unique needs of children with developmental delays in more than one area of functioning. Developmental delays, intellectual impairment, and delays in language skills may impact ability to access the reading, writing and math curriculum in the general education setting. The curriculum is modified for more specific targeting and review of essential skills. Classroom emphasis is on full-engagement and internalization of classroom material, as opposed to mere memorization. Students are highly motivated to learn, but typically have difficulty with longer term retention of material and require frequent review, repetition and re-application of skills. In addition, students in this model often require a high level of support, as well as a significantly slower pace compared to their grade-level peers.

Students who are identified for the SAIL program are included in regular classes as much as possible, but they have a wide variety of needs and require individualized services. They all share the need for a "home base," a place for pull-out services, and a place to receive explicit instruction in social skills. The students' language impairments often impact social functioning and comprehension of materials. Within this model, lessons and discussions are highly teacher-mediated for language development. Teachers continually model language and questioning techniques, and frequently cue students for elaboration of their responses.

At the high school level, students carry a traditional load of high school classes (although modified and highly structured) which reflect state standards and which are designed to help them pass the MCAS exams. Students receive small-group instruction in the four core academic subjects during both

freshmen and sophomore year. By junior and senior year, however, they have opportunities to take certain science and social studies classes outside of the program, with assistance and modifications. Each year, students take all Health, Physical Education and elective courses within a fully inclusive environment (with assistance and modification when needed). The high school also has an Advisory Block (“H” block), in which our students fully participate with the rest of the school.

Given that the students in this program struggle with longer-term retention of material, the program also has a strong transitional curriculum focusing on career/vocational and community skills. This transitional work begins in earnest during their sophomore year, where personal interests, strengths and adaptive skills are investigated and discussed to help with future planning. In subsequent years, vocational opportunities and more intensive daily living services are incorporated if it becomes apparent that they are needed for a successful transition to post-high school life. Summer programming may also be a part of this curriculum.

In the event that a student defers or does not receive a diploma, and needs more vocational and community training, the district offers a post-high school Transitional Opportunities Program (TOP) which follows high school programming (18-22). This post-high school program focuses specifically on the application of functional academics, vocational and community skills, and exposure to community college work at the student’s individual level. In all cases, emphasis is on developing a well-rounded life that includes meaningful employment, community engagement, continued academic learning and leisure opportunities.

SAIL TEAM

The SAIL model comprises a multidisciplinary team that includes the following members, all of whom have extensive experience working with students with comprehensive needs:

- Special education teachers
- Highly trained Instructional assistants
- Board certified behavior analyst (BCBA)
- Speech therapists
- Occupational therapists
- Physical therapists
- Adaptive physical education teachers
- Assistive technology consultation to the model

KEY COMPONENTS OF STUDENT PROFILE

- Primary diagnosis of Developmental Delay, Communication, Neurological, and Autism. Students that fit this model typically would not have a specific learning disability given the cognitive profile of the cohort.
- The student requires a higher level of coordination of care than does the typical special education student.
- There have been multiple systematic interventions utilized in an effort to help the student access the curriculum. These efforts have been well documented.
- The student requires support in three or more of the following domains:
 - Reading

- Written Language
- Math
- Student Skills
- Behavior
- Communication
- Social Skills

Cognitive Profile	Language Profile	Academic Profile	Student Skills Profile
<ul style="list-style-type: none"> <input type="checkbox"/> Student is functioning at a significantly slower pace compared to grade level peers. <input type="checkbox"/> The student is likely to have a cognitive level below 85, or there is a difficulty in determining the cognitive level due to splits in the testing profile or impaired language. 	<ul style="list-style-type: none"> <input type="checkbox"/> Delays in language impact ability to function in reading, writing, and math in the general education setting. <input type="checkbox"/> Language impairment often impacts the student's social skills (particularly at elementary level) 	<ul style="list-style-type: none"> <input type="checkbox"/> Student requires high levels of support in all academic areas, either in the small-group setting or in the general education setting. <input type="checkbox"/> Student presents with comprehension deficits. <input type="checkbox"/> Rate of skill acquisition is diminished. <input type="checkbox"/> Significant pre-teaching and/or re-teaching is required. 	<ul style="list-style-type: none"> <input type="checkbox"/> Requires direct teaching of student skills. <input type="checkbox"/> Slow to respond to instruction/ Intervention. <input type="checkbox"/> Requires support to generalize student skills across the day. The special education teacher shares the student skill of the week with classroom teacher.

KEY COMPONENTS OF SAIL MODEL

- SAIL students participate in as much of the district's assessment and progress monitoring program as is appropriate for each individual student. NWEA MAP testing in math and reading is conducted three times per year in grades 9-12. Every three years, all students participate in a formal evaluation in their area of suspected disability, as part of their tri-annual assessments.
- The Social Academic Model was developed for students with a primary diagnosis of Developmental Delay, Communication, Neurological, and Autism who require a significant level of support across their day. Students that fit this model typically would not have a specific learning disability given the cognitive profile of the cohort.
- In addition to individualized programming to access grade-level curriculum standards, the SAIL model utilizes a number of different interventions and a variety of supplemental curriculum to support the student, including:

English/Language Arts	Math	Language	Student Skills
<ul style="list-style-type: none"> <input type="checkbox"/> Framing Your Thoughts <input type="checkbox"/> Language for Writing <input type="checkbox"/> Language Live <input type="checkbox"/> IXL <input type="checkbox"/> Reading A-Z 	<ul style="list-style-type: none"> <input type="checkbox"/> Modified Math in Focus <input type="checkbox"/> IXL <input type="checkbox"/> Number World 	<ul style="list-style-type: none"> <input type="checkbox"/> Everyday Speech <input type="checkbox"/> Language for Learning <input type="checkbox"/> Language for Thinking <input type="checkbox"/> Skill Streaming <input type="checkbox"/> Social Thinking 	<ul style="list-style-type: none"> ● In-district program "Student Skills" ● Executive function

DESIGN IMPLICATIONS OF THE SAIL PROGRAM

- The maximum number of students per class is 8 with one teacher. The SAIL program represents approximately 1.5 percent of the population. A school with approximately 1700 students would require learning labs (classroom-sized flexible rooms). Each classroom should have a breakout room for small-group instruction. AHS currently has 26 SAIL students requiring an additional 8 spaces. Enough for a total of 8 classrooms, a quiet room and a SAIL home base

(EXCEL) PROGRAM

The EXCEL program is a specialized program that services students who require intensive academic, organization, independence, independent living skills, as well as social and student readiness skills. communication and behavioral support instruction with specially designed and modified curriculum. Students may also require additional support with organization, independence, independent living skills, as well as social and student readiness skills.

The EXCEL program is an intensive and specialized program that services our students with neurodevelopmental disorders, such as developmental delays, intellectual impairments, and other complex learning needs. The EXCEL program utilizes a variety of teaching formats including 1:1, 1:2 and small group instruction.

Academics core classes include ELA, Math, Social Studies and Science. Additional core classes include independent living skills, health, and career exploration (starting in grade 11). Some routine procedures include morning meeting, snack, expressive and receptive language curriculum, and review for inclusion and individualized programs.

In addition to individualized programming and supports within the EXCEL classroom, students are also active members of their grade level class and school community. All activities and programming are designed to provide maximum opportunities for students to generalize their skills, practice social interactions, communication, and recreation skills across settings. In addition, there are well-established peer mentor and reverse inclusion programs that allows students to connect and learn alongside their peers in 1:1 setting, dyad or small group.

The EXCEL program comprises a multi-disciplinary team, which includes:

- Special education teachers
- Instructional assistants
- Speech therapists
- Occupational therapists
- Physical therapists
- Adaptive physical education teachers
- Board certified behavior analyst (BCBA)

All members of the EXCEL team have extensive experience working with students

Contracted services include:

- Alternative and augmentative communication (AAC) specialist
- Assistive technology (AT) specialist
- Orientation and mobility specialist (O&M)
- Teacher for visually impaired (TVI) specialists
- Hearing specialist
- Feeding specialist

ASSESSMENTS & CURRICULUM

All students participate in formal evaluations every three years as part of their tri-annual assessments. In addition, students participate in ongoing preference assessments, ABC data collection and functional behavior assessments to ensure behavior plans are up to date and effective.

COMMUNITY BASED INSTRUCTION

Beginning in middle school thru age 22, students participate in weekly community based instruction (CBI). CBI is an effective instructional method for teaching that takes place in the real-life setting. During CBI, students are provided the opportunity to acquire as well as practice meaningful independent living skills in a variety of settings. The goal is to develop the needed skills to function as independently as possible. During CBI, students are working on functional academics, social skills, life skills, time-management, community safety, self-determination, self-management and social competence.

VOCATIONAL TRAINING

Each student receives exposure and training for vocational tasks which helps him/her to generalize skills across environments and develop independence skills.

- Vocational Training is highly individualized, depending on student readiness. Students begin in 10th grade with classroom-based pre-vocational skills (sorting, arranging, shredding, etc.), and gradually work up to basic tasks including building-based recycling, mail sorting, and basic filing. If/when appropriate, students may participate in our off-campus job exposure/training program which rotates exposure to appropriate job tasks within a corporate environment. Tasks involve working in stock rooms, mail rooms, clean stations, security vestibules, and/or other posts that help students gain exposure to workplace routines and appropriate behaviors. Some students

are also able to participate at other job sites, depending on interests and strengths (e.g., rabbit shelter, assisted living facility, etc.). The program also works directly with DDS to connect families to possible relevant programming in this area.

TRANSITIONAL PLANNING

At the high school and until age 22, students in the Excel program are continually developing their transitional interests and skills. This is accomplished through:

- **Daily instruction** in independent living skills and ADL's, functional academics, community and vocational instruction
- **Evaluations:** From 9th grade onward, tri-ennial evaluations focus heavily on adaptive skills, which measure independence with daily living, communication and navigation skills. This information is obtained through various standardized measures as well as teacher and parent surveys, and used to directly inform individualized programming.
- **Transitional Assessments:** During junior year, each student participates in a formal transitional assessment, which evaluates adaptive and other readiness skills through standardized measures and parent and teacher surveys. Interests and strengths are identified, as well as areas for further development. Results and recommendations are discussed at a team meeting and used as the basis for future educational planning.
- **688 Referrals/Outside Agency involvement:** Students, if not already DDS-eligible when arriving at the high school, are referred to DDS by their educational teams. Teams work directly with parents to help guide them in this process and facilitate communication with the agency. Once a student is assigned and approaches his/her junior year, the High School regularly invites DDS case managers to IEP meetings to assist with post-secondary planning.
- **Student-Centered Planning:** Each student, with varying degrees of assistance (depending on need), develops a person-centered plan for presentation at his/her annual IEP meetings. The student works with team members to address various transitional issues (future goals, including vocational, living, leisure/recreational, family and social arrangements). The final product is a handout and electronic visual presentation (e.g., PowerPoint, Prezi, etc.) that the student presents at the meeting. The person-centered plan serves as a focal point for future planning and is revisited on a regular basis.

DESIGN IMPLICATIONS OF THE EXCEL PROGRAM

- The maximum number of students per class is 8 per 1 teacher. The EXCEL program represents approximately 0.5 percent of the population. A school with 1700 students would require a classroom space, a quiet space, a life skills room including a toilet and simulated shower

ADDITIONAL DESIGN IMPLICATIONS SHARED AMONGST THREE PROGRAMS:

- The SAIL, BRIDGE and EXCEL Programs make up a total of 38 students. These programs require a sensory room, a life skills cafe and a student store/bank. All students have vocational and transitional goals on their IEPs.

Level T-3 Program

The High School Level T3 (or Tier 3) Support System is a model of support for students with chronic or

episodic mental and behavioral health needs that interfere with daily school functioning and access to the general curricula. The goal of this model is to provide target students with multidisciplinary emotional, behavioral, social, and academic support in the context of specialized instruction and in-class help.

Students will receive a combination of individual therapeutic interventions; specific in-class support for academic functioning; and specialized group instruction regarding social skills, emotional regulation, self-reflection, and coping skills for school-based stressors. Students will also receive necessary behavioral assessment and intervention planning.

The goal of this model is to foster skills development in the areas of emotion regulation, academic resilience, and socialization. By doing so, the intention is to decrease “out of class time” due to symptom interference, and increase each student’s ability to receive academic instruction. Supports are provided in a clinically-informed, trauma-sensitive environment with evidence-based methodologies.

DESIGN IMPLICATIONS OF THE T-3 PROGRAM

- A predictable and safe environment that would include space to restore balance.
- Sensory-friendly lighting is essential.
- Access to white noise is desirable.
- Harsh colors should be avoided. Subdued colors with gray undertones, particularly those with blue/green hues are preferred.

BRIDGE PROGRAM

BRIDGE is a self-contained program that APS created for students on the autism spectrum. The program is designed to increase students’ social awareness and help them gain academic knowledge, develop social skills and achieve success in the public school. The program staff consists of a special education teacher, instructional assistants and a dedicated BCBA consultation. In addition, students may receive speech-language therapy, occupational therapy, and/or physical therapy services as determined by each IEP Team to meet each student’s individual needs.

Methodology includes a combination of supported inclusion, discrete trial training and/or 1:1 instruction, small-group activities, incidental teaching and community learning. The program is based on the principles of Applied Behavior Analysis (ABA) with a focus on reinforcement systems and consistent behavior management programs. The goal of the program is for students to increase their independent skills in all areas including academics, recreation, social, communication skills, self-care, motor skills, and behavior management, as well as the generalization of these skills. Program components and methodologies include:

METHODS/ CURRICULAR AREAS	DEFINITION	SPECIAL STAFF REQUIRED?	SPECIAL SPACE REQUIREMENTS?
Discrete Trial Training	Discrete trial training (DTT) is a highly structured, 1:1 method of teaching in which the adult uses adult- directed, massed trial instruction; reinforcers chosen for their strength; and clear contingencies and repetition to teach	No—program teachers only	Yes- see design implications

	new skills.		
Augmentative Communication	Direct instruction and consultation in the use and programming of communication devices for nonverbal students	Yes—see AAC specialist	No
Behavior	Includes functional behavior assessments, behavior plan development, and direct instruction	Yes—Board Certified Behavior Analyst	Yes- BCBA's need a breakout room adjacent to the classroom and a sensory room adjacent to the classroom.
Community	Applying learned skills to natural environments	Program staff	No
Daily Living Skills	Activities of daily living include hygiene, personal care, feeding, toileting, dressing, safety	Program staff	Yes-See design implications
Leisure	Determining how to join activities and develop interests	Program staff	No
Peer mentoring	A model of reverse inclusion	Program staff	No
Applied Behavioral Analysis (ABA)	Applying learning theory in a specific, systematic way in order to teach discrete skills; done through the careful manipulation of antecedents, behavior, and consequence.	Program staff	Yes—See design implications
Travel training	Getting from one place to another independently	Program staff	No
Social Skills	Learning how to interact with peers and adults, join groups, manage/read emotions, take point of view, navigate conflict, share common experiences, etc.	Program staff	No
Student Skills	Managing the unwritten structure and function of a school day	Program staff	No
Reverse Inclusion	Specific classes are delivered via a reverse-inclusion model, whereby students participate in a modified curriculum (delivered at their individual entry points) and are aided directly by typical, same-age peer mentors.	Program staff	No

BRIDGE TEAM

BRIDGE is a substantially separate program. By law, the maximum ratio in a substantially separate classroom is 8:1 or 12:2. Due to the severity and complexity of needs, the BRIDGE classroom is typically staffed with one classroom teacher plus one assistant for each student.

The BRIDGE program comprises a multidisciplinary team, which includes:

- ABA-trained special education teachers
- ABA-trained instructional assistants
- Board certified behavior analyst (BCBA)
- Speech therapists
- Occupational therapists
- Physical therapists
- Adaptive physical education teachers

All members of the BRIDGE team have extensive experience working with students on the autism spectrum. Contracted services include:

- Alternative and augmentative communication (AAC) specialists
- Assistive technology (AT) specialists
- Orientation and mobility specialists (O&M)
- Teacher for visually impaired (TVI specialists)
- Feeding specialists

BRIDGE ASSESSMENTS, METHODS, AND MATERIALS

The preschool and elementary school BRIDGE students participate in annual assessments (ABLIS/VB-MAPP) that identify the students' strengths and areas of need, as well as providing ongoing progress monitoring.

All students participate in formal evaluations every three years as part of their tri-annual assessments. In addition, students participate in ongoing preference assessments, ABC data collection, and functional analyses/functional behavior assessments to ensure behavior plans are up-to-date and effective. Students are evaluated on MA state standards via the MCAS Alternative Portfolio System.

Due to the highly individualized nature of the program, the BRIDGE staff accesses a wide variety of interventions and instructional programs. Some examples include:

- ENGLISH LANGUAGE ARTS
 - Accessible Literacy Learning Reading Program (ALL), Early Literacy, Early Literacy Skills Builder (ELSB), Early Reading Skills Builder (ERSB), Early Intervention in Reading (EIR), Reading Mastery, PCI Reading Program, Edmark Reading Program, The Picture Exchange Communication Systems
- MATHEMATICS
 - Early Numeracy Curriculum, Number World, Connecting Math Concepts, Touchmath
- SOCIAL STUDIES/SCIENCE
 - News2you, Science A-Z
- SOCIAL SKILLS
 - Model Me Kids, Skillstreaming, Social Thinking, Social Express, Teachtown

CURRENT BARRIERS FOR THE BRIDGE PROGRAM

One of the most significant current barriers to the effective operation of the BRIDGE program is the lack of sufficient space that is appropriately configured. The speech-language pathologists, OTs, and PTs all share space, which compromises privacy during direct therapy session and increases the noise level at a time when students need to concentrate or the therapist may be conducting an evaluation. A makeshift space shared with other providers is substituting for the actual sensory room that is needed for therapy.

SCHOOL YEAR	NUMBER OF CLASSROOMS	NUMBERS OF TEACHERS	NUMBER OF STUDENTS
2022-2023	1 classroom (9-12)	1 Teacher	6
2023-2024	3 classroom (9-12)	4 Teacher	6

BRIDGE will need **three** additional spaces. The current classroom does not allow for a full life skills and vocational curriculum to be implemented. This issue prevents the District from bringing students back from highly restrictive out-of-district placements. BRIDGE is a substantially separate program. By law, the maximum student-teacher ratio in a substantially separate classroom is 8:1 or 12:2. Each BRIDGE classroom may serve a maximum of 12 students. Each student has a 1:1 assistant. Therefore, the size of the classroom must accommodate 12 students and 12 assistants at all times. In addition, the BRIDGE program teacher and numerous specialists also frequent the classrooms. The wide variety of materials and methods used in the program requires ample storage.

The current BRIDGE room does not have a full kitchen, bathroom with a shower, laundry facilities/ There also needs to be space for vocational activities, allowing students to be pre taught skills in preparation for an internship in the community. Students are working on Activities of Daily Living (ADL) skills that are critical to independence and self-care. There should also be a space to teach leisure activities. .

Students with autism experience extreme sensitivity to sensory experiences. Challenges may include sound, tactile experiences, busy visual fields, harsh lighting, and rooms with echoes and sound reverberation. For example, fluorescent lighting may be too harsh visually and may also cause auditory distress. Some ballasts that regulate current to the lamps in fluorescent lighting systems have a high-pitched hum that children with autism may find so intolerable they cannot focus or engage. Children may fixate on the hum from mechanical systems such as HVAC and be unable to concentrate. Other children may benefit from steadily modulated “white noise” machines. Color can have a substantial impact on student learning. Changes to routine may also cause duress, so classroom spaces need to be free from distractions and clearly defined by function. The shock of sensory and change experiences can cause tantrum-type behavior at the mild end and actually impact development at the more extreme end of the spectrum.

Large and imposing facades, soaring porticos and hallways, and open staircase designs can be frightening and disorienting to children with sensory, spatial, and proprioceptive challenges. Patterned floors are confusing, disorienting, and increase anxiety. Hallways that are too large or long can be intimidating, and hallways that are too enclosed can cause discomfort. Exits that are open to children’s field of vision can cause fight/flight responses, so travel options in the form of circulation spaces are preferable. Passive seclusion opportunities built into the spaces would assist students with sensory and social-emotional challenges to self-manage and escape in safe and socially appropriate ways. Another

design implication might be to make the school smaller and more welcoming by dividing it into “neighborhoods” or sections with enclosed common areas and providing alternative pathways for getting from one place to another.

DESIGN IMPLICATIONS OF THE BRIDGE PROGRAM

The BRIDGE program will require the following instructional spaces to serve a school of approximately 1700 students:

- A BRIDGE classroom suites, each with a full-size classroom, bathroom, breakout area, and adjacent discrete trial training instructional room. The main classroom is an open area and the adjoining classroom would be equipped with cubicles for discrete trial work.
- Separate sensory room (large enough to have a full-size hanging swing and sensory equipment)
- OT/PT therapy room (this room must be large enough for gross motor activities such as scooter boards, practice on stairs, therapy mats, etc.)
- BCBA therapy room (office, as well as enough room to conduct functional assessments or treatment)
- Speech therapy room
- A separate conference room because the students have weekly multidisciplinary clinic evaluations

Other design implications for the BRIDGE program are as follows:

- Each classroom needs ample storage for instructional materials. Students with sensory-seeking behaviors may crash into shelving units, attempt to climb them, and ingest small non-food items. For safety reasons, storage options need to be out of sight and inaccessible to students.
- Soundproofing of these rooms is strongly recommended. Sound field adaptations may include rubberized flooring, cork, or Flotex tiles and furniture with rubberized legs to reduce sensory overload for students. Soundproofing also includes sound deadening wall panels and rooms with solid walls and doors to reduce noise from students who become distressed or students who make frequent loud noises due to vocal stereotypies.
- Features such as a porte cochere and lobby spaces with enclosed, modular walls, modified lighting, and curved modular seating areas can create a cocooning effect.
- Sensory-friendly lighting is essential.
- Access to white noise in each classroom is desirable.
- Harsh colors should be avoided. Subdued colors with grey undertones, particularly those with blue/green hues are preferred.
- Clear contrast between ceilings and floors assists students with spatial and proprioceptive challenges. Color-coding doors or hallways by function is often helpful for navigation, independence, and feelings of security.
- Color used in tonal blocks, curved hallways without blind corners, and points of interest such as seating nooks can help children to understand, predict, and navigate the environment.
- As opposed to long hallways, travel options in the form of circulation spaces are preferable. Passive seclusion opportunities built into the spaces would assist students with sensory and social-emotional challenges to self-manage and escape in safe and socially appropriate ways.
- Another design implication might be to make the school smaller and more welcoming by dividing it into “neighborhoods” or sections with enclosed common areas and by providing alternative pathways for getting from one place to another.

- Use of low VOC paint is highly preferable.

Fine Arts

The Performing Arts Program at Andover High School provides learning opportunities in music and drama emphasizing ensembles and the study of the performing arts where arts skills, critical thinking, and creative problem solving are emphasized on stage and in the classroom. Central to this creative work is utilizing one's risk-taking, curiosity, and collaborative abilities. The Performing Arts Department strives to build student confidence and resiliency that fundamentally transforms students into creative learners supporting 21st Century learning skills. The curriculum focuses on developing creative sensitivities and technical proficiency, literacy in a variety of mediums and expressions, and multiple opportunities to develop a lifelong relationship with the arts. The department supports collaborative cross-curricular opportunities and encourages students to communicate and advocate through the fine arts, seeing this as an important life skill that extends into and complements all other disciplines.

The Visual Arts Program at Andover High School provides learning opportunities where arts skills, critical thinking, and creative problem solving are emphasized. Central to this creative work is utilizing one's risk-taking, curiosity, and collaborative abilities. The Visual Arts Department strives to build student confidence and resiliency that fundamentally transforms students into creative learners supporting 21st century learning skills. The curriculum focuses on developing creative sensitivities and technical proficiency, literacy in a variety of mediums and expressions, and multiple opportunities to develop a lifelong relationship with the arts. The department supports collaborative cross-curricular opportunities and encourages students to communicate and advocate through the fine arts, seeing this as an important life skill that extends into and complements all other disciplines.

Currently, we offer a robust Visual and Performing Arts program both within the school day and after school. Andover Visual and Performing Arts department is serviced by 1.8 Music Teachers; 1.0 Theater Teacher, and 5.0 Visual Arts Teachers. Within the school day for music, we currently offer chamber and concert choirs, concert band, orchestra, percussion ensemble, music production, guitar and piano courses. We offer an array of theater courses including film courses and technical theater, wherein students work within the scene shop to create sets, props, and other elements. The visual arts department offers an array of media for students to explore including ceramics, digital and dark room photography, traditional 2D offerings, and graphic design.

Music and Theater spaces: The music program and theater program share two spaces with limited storage space. There are currently no small group practice spaces for students. The music department has a MAC lab with approximately 16-18 work stations with devices from 2015-2019. The space is converted storage unit with limited ability for full size keyboard work. Cabinets are outdated and broken. The music rooms are also consistently utilized by outside rentals in the adjacent Collins Center. The choral room utilizes the show choir risers and mirrors, and has limited use for theater classes, which require open space. The choral room functions as a dance space for show choir, but has limited space for other ensemble work or movement. We have three dedicated offices for music/theater staff as well as an office for the program coordinator. Choral room also stores our show choir costumes (60-100

students on any given year) as well as our choral library. Band and choral rooms have no light and outdated and nonfunctional sound panels. The Percussion ensemble requires larger space and costume storage for theatrical performances is limited in the back of the scene shop.

Performance Space: AHS shares the J. Everett Collins with the Town of Andover. The Collins Center is a large performance space with approx 1200 capacity. The performance space is utilized year-round for band, orchestra, choral, and theatrical performances. We host two large events (METG drama competition and New England Show choir Showdown) for outside groups. We regularly host districtwide performance events. The performance space includes many benefits for performance including updated LED lighting, loading dock, and appropriate wing space. The drawbacks are ability to adjust the pit to stage level, visibility, accessibility for seniors and disabled students and patrons, poor front of house design for tickets and concessions, doors are unaligned with adjacent rooms, and sound system is poorly placed. We also lack the ability to adjust tuning or to create smaller performance/audience spaces. We have four dressing rooms spaces with bathrooms.

Art Rooms: We currently have six spaces that are in the basement of the school. We have a dark room, ceramics room, and MAC Lab with devices for 2019. We also house many photo and large scale printers including a 3D printer. Our classes are capped between 16-24 based on space. Classes of 24 are still difficult to work on large scale collaboration projects with limited storage. We have 3 rooms for which teachers utilize for 2D courses. We have made some upgrades to our Silver system for dark room. We have limited display areas within the school; yet we have added some hanging system to the school library, main office hallway. Future work would include better display and access/adjacency to maker spaces, design labs, and performing arts wing. Our current ceramics room lacks modern ventilation systems, no access to outside, and no space for throwing wheels for advanced ceramics. A single storage space is utilized for pugmill, clay, and materials.

Extra Curriculars:

- Marching Band (60+)
- Pep Band (30-35+)
- Two Jazz Bands (30-40)
- Show Choir Band (5-10)
- Winter Guard (10-20)
- Philharmonia Orchestra (25-40)
- Chamber Strings (10-25)
- Three Show Choirs (60-100)
- A Cappella (15-25 students)
- Three Theatrical Performances (100 person musical)
- Tri-M Music Society

The limited space in the Collins center provides scheduling issues for the programs. We have two dedicated spaces that are used daily by our staff and also outside groups. Staff must consistently rearrange equipment and spaces. Our Winter Guard program rehearses at Doherty Middle School.

Need: A flexible black box space to rehearse dance, choreography, winter guard, and theater performances

DESIGN IMPLICATIONS OF THE FINE ARTS PROGRAM

The Andover High School program requires great attention to several items to support a comprehensive and growing program. Music spaces require improvements to storage, lighting, sound, and recording equipment. A dedicated black box theater would provide additional teaching space, small performance space, and rehearsal space for the many extracurriculars. As we envision a more interdisciplinary and modern curriculum, we are looking for upgrades to our recording and music production spaces, ability to perform in different spaces, technical theater upgrades, and connection to video production and design/maker spaces. Improved rehearsal space for our show choir program as well as dedicated outdoor space for marching band.

Music / Theater:

- Adequate storage for band, choral, orchestra and theater program including instrumental lockers, music library, costume/uniform storage, district-wide instruments, and percussion equipment
- Black Box theater/flexible space that could serve multiple purposes (theater classroom, winter guard/color guard space), additional rehearsal space, support Show Choir dance program, function as a small performance space, and dance courses). This space would be equipped with lighting system, sound system, dance mirrors, appropriate flooring, and be modified for choral risers and seating
- Practice or small ensemble rooms with recording equipment to enhance production and recording curriculum
- Access to outdoor performance space
- An outdoor field for marching band use with appropriate dimensions
- Update production/piano lab for songwriting, music production, piano courses
- Auditorium space that keeps the current fly system and state of the art lighting and technology, catwalk, loading dock, dressing rooms, but addressed accessibility issues, front of the house design and entrance, appropriate placement of lighting and sound board, sight lines and visibility issues; auditorium should have proper flow to bring in instruments, set pieces, chairs, stands, and other elements as needed; increased and accessibility parking.
- Functional scene shop for technical theater course(s) and adequate theatrical costume storage
- Attention should be paid to lighting in the art and music spaces as well security elements including locks, shaded windows, proper announcement system
- Performing arts office that could double as music library

Art:

- Sufficient space for art supply storage and teaching space to allow for sculpture work, 3D work, and collaborative projects
- Dark room with proper safe storage for chemicals and materials
- Hanging system, display space that exist within the visual arts space and throughout the school
- Updated ceramics room with space for throwing wheels
- Updated lightning
- Work room for teachers to prep materials, prepare hanging exhibits
- Access to and adjacency with maker spaces and design lab for expansive of Art offerings, interdisciplinary collaborations, and technical theater

DIRECT ENGLISH LANGUAGE INSTRUCTION (ESL)

Direct English language instruction (ESL) is its own content area, and therefore, requires its own instructional space. The current room is designated only for English language instruction and the physical space is approximately half the size of an average Andover High School classroom. The English learner population has approximately 20-25 students, and they are enrolled in multi-grade/age level classes with instructional groups ranging from 2 to 15 students. The current classroom space is located in the guidance suite and adjacent to an administrators' conference room. There is a wall of windows that face directly into common, high-traffic hallway space. There are movable tables for flexible grouping, and there is an Epson projector.

DESIGN IMPLICATIONS OF THE ESL PROGRAM

Future classroom space should have movable desks and open space for multisensory activities and presentations. Having an area with flexible/comfort-seating and (a) low table(s) would benefit student-to-student social and academic discourse. The room space should accommodate up to 25 people for the purpose of peer tutoring, social language activities, and collaborative project work. Several lockable cabinets are necessary for storage of learning materials, technology devices, such as laptops, ipads, and headsets. The space should also have a sink for projects that require multimedia and liquids, such as paint and food coloring. Due to the nature of language, the English language instruction (ESL) space generates a high volume of voices, music, and videos. The space should not be about conference or quiet study spaces, and noise buffering should be a consideration. Electrical outlets need to be accessible from all student seats for charging devices necessary for instruction. The room should have a projector and screen and vast magnetic whiteboard space for writing and displaying visuals. Windows that look directly outside and provide plenty of natural lighting are also necessary for students to access and view changes in weather and seasons (common topics for students new to English). Lastly, students who are new to the country, and struggling to acclimate/acculturate sometimes desire anonymity, so privacy blinds or a way to block hallway viewing would be beneficial. A low to medium foot-traffic area of the school that is not remote or isolated, would also help students feel less “viewed.”

Health

Current classroom space is similar to most general teaching rooms, with movable desks in some as well as stationary desks in others. Skill based health requires students to have the space to work in small groups, present, and participate in project based learning and role play activities. When learning CPR and First Aid, some classes need to move to larger spaces.

All health and especially Senior Health curriculum programming includes guest health speakers. Storage for health supplies use a small closet off of the health teacher space and cabinets in the classrooms. Storage of CPR supplies is a challenge.

DESIGN IMPLICATIONS OF THE HEALTH PROGRAM

- Classroom space needs to include movable work spaces/desks so that students can work in small groups, work on projects, and practice CPR Skills.
- A lecture room for speaker events and student presentations could also be used for other curriculum areas, meetings, and /or after school speaker events.
- Common planning space- health teacher office
- Storage room large enough for health supplies to include CPR

Physical Education

The Andover High School physical education curriculum aligns with both the SHAPE (Society of Health & Physical Education) America national standards and the Massachusetts Comprehensive Health Curriculum Frameworks. Each course provides students with an opportunity to grow as individuals in a physically challenging environment. Students will learn and be able to develop the knowledge and skills needed to be physically active (using small and large group activities; team sports; and racket sports) and develop skills to be fit for a lifetime.

The Field House, Fitness Center and Gym are the indoor spaces scheduled for physical education. These same spaces are also used for athletics.

All AHS students are required to take physical education in each of their 4 years of high school.

The Field House accommodates up to 4 full court teaching spaces. Sport activities, racket sport, collaborative games and activities are scheduled throughout various PE courses.

The Field House is used as a multi-purpose facility, for physical education, athletics and recreation. Functionality for physical education classes, requires movable walls/curtains to handle multiple classes scheduled at the same time.

All Grade 9 students participate in a Project Challenge. The course revolves around collaborative games/activities, team building activities, and large and small group moderate to vigorous activities. The course also includes low and high element activities related to the adventure curriculum. These activities use ropes, low element apparatus, and climbing walls.

What we Currently Have:

- All PE classes are scheduled using each space. The field house has curtains that separate the court space into 4 teaching spaces which is a needed element. This is a current feature that works well, however curtains lower and rise at a very slow pace.
- Currently there are NO office spaces *in the field house* or storage space with *easy* access to the field house. Storage space is located off of the hallway of the field house and in small closets off of the boys and girls locker rooms.
- Boys and Girls locker room bathrooms are separated by gender and showers are outdated
- **Locker Room Teacher Offices** are separated by gender located in the girls and boys locker rooms. Each office space has a teacher bathroom and shower- however, outdated
- There is no common planning space for teachers to collaborate and meet as a department
- The Dunn Gym is another teaching space that can accommodate 1 PE class. A movable wall does not work to enable 2 classes to be scheduled during the same block.
- The Fitness center is currently used for physical education classes and athletics. This space does not have any natural light and flow between 3 spaces is tight. Teachers and/coaches do not have a full view of students due to the fact that there are 3 rooms separated by walls within the fitness center. There is no main entrance with space to store student belongings.
- Storage for the fitness center includes cabinets that take up workout space.
- Storage space in the Dunn gym is very small- 1 closet.
- The PE coordinator office is located off of the Dunn gym. No window or closet space, or view to hallway or PE activity space
- **YOGA Room- PE and Health Course: Yoga is currently used for PE and Health course credit.**
- The current yoga room is a classroom area, with no windows or natural sunlight. The floor is tile and there is no storage within the room. Yoga supplies are in cabinets.

Most indoor project challenge activities take place using Dunn or Field house spaces.

- The current climbing wall is located in the Dunn gym in a far corner too close to the bleachers. Its' location and size does not adequately accommodate class size.
- Outdoor adventure is scheduled outdoors in the ropes course.

DESIGN IMPLICATIONS OF THE PHYSICAL EDUCATION PROGRAM

The field house is used as a multi-purpose facility, for physical education, athletics and recreation.

Functionality for physical education classes, requires movable walls/curtains to handle multiple classes scheduled at the same time.

What we Recommend /need for Future Space:

- Storage spaces are recommended to be **separate** for PE- and needs to be large enough for equipment such as Climbing, Nets, Standards, large wheel carts, ping pong tables; Athletics, and Recreational /rented programs need their own storage spaces.
- Common dept. meeting and common planning space for PE dept. is needed with internet access.
- The PE coordinator office should be designed to be close to physical education classes and meeting space for department meetings.

- Office Spaces in the Field House with visibility to the Field House is needed for PE teachers, and for Athletics i.e. game officials; coaches.
- 2 Athletic training rooms (1) off of the field house and (1) off of the Gym with general access for all teams. OR one AT Room accessible to both the Gym and field house. (currently the training room is between the boys and girls locker rooms)
- **Locker rooms** need to be large enough to accommodate PE classes and large athletic teams (separate changing spaces for visiting teams).
- If a new HS building, Teacher Office should be located with access to Field House and Locker rooms and also have ability to view activity and/or locker rooms (with window shades).
- Bathrooms and changing spaces need to be in compliance with gender laws.
- Lockers need to be updated to fit modern day needs and PE equipment as well as be secure. PE offices should also be in the locker rooms but have windows w/curtains to be able to see locker rooms. If Locker Rooms were built off of the field house, a recommendation for PE offices would be to face the field house with access directly to the locker rooms. Offices visible to the activity areas helps ensure safety and supervision.
- Doors to enter and exit the gym should include wide spaces to move equipment and supplies. Location needs to be close to athletic fields; Outdoor storage spaces for outdoor nets and large equipment/supplies is needed.
- Technology needs to be able to include teaching access for teaching PE and for athletics; scoreboards in the field house are needed. Sound systems are a requirement to teaching and athletics (gym and field house)
- Attention to outdoor light/windows so that sunlight is not blinding (safety)
- Dunn Gymnasium- Needs to be large enough to house 2 PE classes, athletic team events, and school based or other assemblies. Bleachers need to be retractable.
- Sound system; access to technology and retractable screen would enhance teaching and events.
- Storage off of the gym needs to be spacious enough for PE and game needs.
- Dunn Gym- A movable wall- can separate teaching and athletic space to accommodate more than one PE class and/or practice team.
- The Adventure courses require a climbing wall that can accommodate 25-28 students, so that whole class participation can occur vs standing and observing until taking a turn. .
Recommendation- provide the opportunity for a climbing wall to be installed w (4-5 side by side trails bottom to top) in the Field House vs gym.
- Future space for the Fitness Center: There is a need for windows letting in air, natural light, as well as windows that are visible to the teaching space when occupied. Workout rooms need to be large enough to accommodate free weights, cardio equipment, stretching and core strength spaces and the flow of large groups when occupied. A separate Athletic Dept. Fitness Workout Area is recommended for Large Athletic Teams which would be large enough to include squat racks and larger free weights. If not, a large fitness room needs to take into consideration PE + Athletic needs.
- Storage space within the fitness center and gym is lacking and is strongly recommended. (currently, portable cabinet space is used and not sufficient)

- Recommendations for Yoga Studio: A room for yoga should include a wood floor or one that is not Cold. A projection screen is needed for teaching curriculum. Sound system would enable music to be provided as part of Yoga. Lighting should be able to be dimmed or option for less than (all lights on). A storage space needs to accommodate mats, blankets, blocks.

Counseling/Social Emotional Supports

Andover High School has nine guidance counselors and four social workers that service all students at the high school. Each student is assigned a counselor when they enter the building. All students have a counselor who remains with their students all four years of high school. Counseling programs include individual counseling, freshman groups, sophomore career exploration, career mentoring, peer mediation, and college planning workshops.

Social emotional learning (SEL) is the process through which students acquire and effectively apply the knowledge, attitudes, and skills necessary to understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions.

When students receive social emotional supports that are aligned with academic and behavioral efforts, they fare better on many indicators including academic achievement metrics, positive social behaviors and attitudes, skills such as self-regulation and teamwork, and graduation rates. They also have fewer conduct problems, and less emotional distress among many other benefits.



The Collaborative for Academic, Social, and Emotional Learning (CASEL) defines the key SEL competencies as:

- Self-awareness
- Self-management
- Responsible decision making
- Relationship skills
- Social awareness

The primary purpose of the Guidance Department is to promote the educational and social/emotional development of our students, they strive to be proactive in working with them. Goals include: helping students make thoughtful and healthy choices, to acquire a sense of civic responsibility, and to develop the skills necessary to realize their individual life goals.

The counselors also assist students with their academic planning throughout their years at Andover High School, culminating with extensive post-high school planning in the junior and senior years. Counselors work with students and parents separately, and together, on: developmental issues, academic planning and course selection, transition, testing, academic and personal issues, and the future planning process.

The members of the department also help students and their families deal with adjustment difficulties and emotional impediments to the students' academic progress. The counselors provide individual and small group counseling to students as well as numerous programs for parents. In addition, counselors collaborate with teachers and administrators regarding student progress and concerns as well as consult with outside agencies.

The department's emphasis is not only helping students who experience difficulties to adjust; it is also concerned with helping all students to cope with the normal developmental issues and problems that typically arise in childhood and adolescence.

In order to receive focused and individual attention, students are assigned a team consisting of an Assistant Principal and a Guidance Counselor that stays with them throughout their career at AHS. The team works closely together to help students make optimal use of the resources available at Andover High School.

DESIGN IMPLICATIONS OF THE COUNSELING PROGRAM

- Separate Offices for each counselor and social worker
- An informal meeting space within the counseling suite. Space would allow for student self-regulation, career and college planning, and expanded guidance delivery.
- Sensory-friendly lighting is essential.
- Comfortable seating.
- Harsh colors should be avoided. Subdued colors with gray undertones, particularly those with blue/green hues are preferred.

Social Work

Professional therapeutic services provided by social workers are available to students whose needs for mental health support exceeds those resources typically available to all students. Social Workers can help students and their families learn how to cope with personal and/or social situations when those factors become hindering factors to the student's learning process. Social workers offer limited individual, group, and family counseling to members of the school community.

If a student's problem becomes repetitive or severe, the Social Worker will assist parents and guardians make referrals to appropriate mental health service providers in the community. Social Workers maintain on-going contact with area agencies and private mental health practitioners serving adolescents and families and can facilitate the student's involvement with these out of school services.

Students can receive referral assistance to access School Social Workers by talking to their school counselor for a referral. Parents, teachers, and administrators may also request such services for a student by speaking with the student's school guidance counselor.

DESIGN IMPLICATIONS OF THE TLC PROGRAM

- Separate Offices for each social worker
- An informal meeting space within the counseling suite. Space would allow for student self-regulation, career and college planning, and expanded guidance delivery.

- Sensory-friendly lighting is essential.
- Comfortable seating.
- Harsh colors should be avoided. Subdued colors with gray undertones, particularly those with blue/green hues are preferred.

Andover High School Transition Learning Center (TLC)

The AHS TLC program provides short-term intensive assistance to students enrolled at AHS who are returning to school after an extended absence due to psychiatric treatment or a medically related absence that requires social emotional support. To make the return to regular school routine as smooth as possible, the TLC provides the following short-term services:

- *Direct mental health supports to students*
- *Academic coordination*
- *Family engagement*
- *Care coordination*

*APS is a member of the Bridge for Resilient Youth in Transition (BRYT) network and this program utilizes the BRYT model for school re-entry and support. TLC families are invited to participate in BRYT services and support.

DESIGN IMPLICATIONS OF THE TLC PROGRAM

- Separate classroom near an entrance for arrival and dismissal.
- Connected office space for counselor.
- Comfortable seating.
- Harsh colors should be avoided. Subdued colors with gray undertones, particularly those with blue/green hues are preferred.
- Sensory-friendly lighting is essential.

Athletics

Additionally, the existing facility, and the new proposed gymnasium and Wellness rooms, are, and would be, utilized by our extensive state-sanctioned athletics' programs:

- Baseball (boys): varsity, junior varsity, and freshmen
- Basketball (boys and girls): varsity, junior varsity, and freshmen
- Cheerleading: competition and game-day
- Cross Country (boys and girls): varsity and junior varsity
- E-Sports: Varsity
- Field Hockey (girls): varsity, junior varsity, and freshmen
- Football: varsity , junior varsity, and freshmen
- Golf: varsity
- Gymnastics: varsity
- Ice Hockey (boys and girls): varsity, junior varsity, and freshmen

- Indoor Track (boys and girls): varsity and sub-varsity
- Lacrosse (boys and girls): varsity, junior varsity, and freshmen
- Soccer (boys and girls): varsity, junior varsity, freshmen
- Swimming and Diving (boys and girls): varsity
- Tennis (boys and girls): varsity
- Track and Field (boys and girls): varsity and sub-varsity
- Volleyball (boys and girls): varsity, junior varsity, freshmen
- Wrestling: varsity and junior varsity

These extensive programs serve over two-thirds of our student body annually. Consequently, state-of-the-art facilities both indoors and outdoors are a critical need of our program. Our numbers continue to rise and also include club sports such as Ultimate Frisbee and Rugby.

DESIGN IMPLICATIONS OF THE ATHLETICS PROGRAM

The new facility should be able to accommodate this growth and development. Male and female locker rooms are essential for both home and visiting teams, ample storage for large equipment, Athletic trainer office and exam/treatment area, an office for the Athletic Director and the Administrative Assistant, wrestling practice mat storage adjacent, or as an integral part of the wrestling/fitness class room, locker room with shower facilities for our coaches and referees. Careful consideration should be given to the location of the Athletic Director's office. They are responsible for the supervision and scheduling of all teams and areas of play in regards to our athletic program. Therefore, this office should be located in an area that allows easy access to the fields and is in close proximity to the gymnasium, fitness center, multipurpose rooms and team locker rooms. Our vision for the gymnasium is a multi-purpose facility that has a regulation court down the center and appropriate stands for varsity athletics and the expected crowds that attend. We need to meet current and future regulations and standards for handicapped seating and movement into and out of the gymnasium. Additionally, the gym floor should include a standard basketball/volleyball court.

The design of the ceiling should also be thoughtfully considered to include essential components of the wellness and athletics programs. These essentials include motorized curtains and basketball hoops. The ceiling equipment should have a centralized keypad control station for operator use and safety. Our outdoor facilities are also in need of modernization.

The baseball diamond and soccer field share the same patch of grass eliminating simultaneous use. If there was a weather cancellation the lack of field space would result in the inability to reschedule the sub varsity games. Boys soccer and boys lacrosse, practice and sometimes compete off site of the high school campus. This too creates safety issues and awkward practice schedules for athletes who are not fortunate enough to practice at the high school itself.

It is essential to update the grass field adjacent to the stadium to turf and have lighting for use in the fall and the spring. The turf field would eliminate boys soccer from traveling off-site in the fall, it would allow fall sports teams to practice after school, and limit the cancellation of sub-varsity games. In the

spring the field could be shared by boys and girls lacrosse, baseball, and softball. This would allow for extensive practices and games for all of our sports programs to use. It would also open up field youth sports in the evening. Permanent playing surface and game-field lines would allow DPW to focus its efforts elsewhere.

It would also be essential to maintain one grass softball and baseball field. Grass is the natural surface for both sports. Having these fields would allow for varsity and sub varsity sports to practice and play on campus simultaneously. This would also maintain the current fields that are used by the community.

Our athletic programs will truly benefit as well from a well-designed modernization plan and quality construction of both indoor and outdoor facilities. The preferred option locates the gym near an entrance for game day visitors and for community use. Directly adjacent to the gym and located on the main entrance corridor are two multi-purpose spaces. This location will make the schools wellness programs present for staff and students and indicate the value the school puts in these activities

MEDIA CENTER/LIBRARY

Andover High School houses a centralized school library-media center, as do all schools in the district. It is staffed by 2.0 FTE professional certified library teachers who support all learners in developing literacy, literature, research, information, and technology skills. They promote and advance the use of print and digital resources to support, enhance, and extend classroom curriculum. In addition to teaching, library teachers manage the school library-media center, including such tasks as scheduling space, maintaining the collection, selecting and purchasing materials, and managing volunteers. This approach results in a school library-media center that is a hub of activity, teaching and learning.

Because of school overcrowding, the library-media center must serve two classes at a time all day. There is insufficient space and time for students to learn to use the library-media center for research or to understand how a library collection is organized to help them find information.

In the future, the District will continue to offer a centralized library-media center as a dedicated space in the school where students, under the guidance of professional certified library teachers, can learn research skills, explore a variety of books and interactive media, and develop a positive lifelong attitude toward reading. In addition, smaller satellite reading areas are proposed in each academic area (in the Extended Learning Areas) that contain a variety of reading materials relevant to the curriculum being studied for more direct access for teachers and students.

DESIGN IMPLICATIONS OF THE MEDIA CENTER/LIBRARY

- Multiple classroom spaces to accommodate more than one class at a time
- Special attention to placement of technology within the room, allowing for flexibility in working space and furniture
- Dedicated workspace for two library teachers, which includes storage space for book-mending materials as well as office spaces
- Areas for students to sit quietly and read (reading nooks)
- Areas for read-alouds or presentations

- Areas for student collaboration and research opportunities

DIGITAL LEARNING/INSTRUCTIONAL TECHNOLOGY

EXISTING INSTRUCTIONAL TECHNOLOGY

In 2017-18, Andover significantly upgraded staff and student technology equipment. The District deployed new hybrid laptop/tablet machines to teachers, who were especially excited about access to touch screens and pens. The older cart-based devices were distributed to the elementary-level instructional assistants. Chromebooks went to students in grades 2 through 5 to meet the 1:1 ratio for those grades, along with sufficient iPads for grades K and 1 to meet the desired 2:1 ratio for K-1. All aspects of the iAndover 1:1 program are complete. Andover also upgraded all shared lab-type computers; no machine in the district is now more than six years old. Andover High School began a 1:1 Bring Your Own Device (BYOD) initiative. Students have the opportunity to use their own device or receive a device through the school. The school has Chromebook carts to allow for MCAS and MAP testing.

The District replaced the aging Smartboards with new Epson interactive projectors and provided improved connectivity to all projectors from new Windows machines. Some classrooms have portal Lightspeed sound enhancement systems so that sound is distributed equally across the classroom. These sound systems are highly effective for enabling all students to hear the teacher and each other.

Andover High School is using instructional technology to enhance the accessibility of the curriculum and the personalization of instruction. Through the use of technology and universal design for learning strategies, teachers can maximize their use of multiple means of representation of curricular concepts and provide access to a wide array of resources. Andover Public Schools is both a G-Suite and Office 365 environment that supports teacher-student and student-student collaboration. The use of technology is deeply embedded throughout Andover High School’s instructional program. APS believes that technology integration is key to developing students who are active global citizens.

The district’s current standard model technology infrastructure for AHS consists of the following infrastructure:

System	Current Technology
12-strand, single-mode fiber connected to existing Andover fiber network running at 20gbps. Shared internet access is available over this same hardware connection.	
Ethernet cabling to all classroom and administrative spaces.	CAT 6A
Switching technology capable of operating with 10gbps uplinks and 1gbps inward-facing connections. Note: Firewall technology is provided centrally and is not located at schools	HP Aruba 2930M with full PoE and redundant power supplies

System	Current Technology
UPS technology in all MDF and IDF closets to provide runtime of 10-15 minutes assuming fast-switching generator backup.	Schneider APC
Wireless technology in all classrooms, common spaces, adjacent outside spaces, and playing fields.	Currently using Aruba WiFi 5 level devices. Would expect to deploy WiFi 6 level devices for a new building.
Interactive display technology in all classrooms. Some classrooms may be divided into multiple collaboration areas to support more than one interactive “pod.” All staff and students require the ability to “cast” their devices to the interactive screen. Students should be able to view presentation devices on personal mobile devices. Students in multiple locations should be able to collaborate on the same surfaces simultaneously. Some or all spaces may require the use of a wireless media device such as an AirTame to permit multi-device casting. Some or all devices may require the use of a media-streaming device such as a Roku to link remote content. Each classroom should be equipped with two or more interactive surfaces—either monitors or whiteboards.	Epson 697ui and Epson 96” Whiteboard
Larger non-interactive projectors along with speakers and microphones in common areas such as gymnasiums and auditoriums.	
Classroom amplification of “program sound” as well as amplification of instructor. Hearing assist devices as needed.	TopCat amplification and Listen wireless.
All Andover students participate in a 1:1 learning environment where personal devices are available for the entirety of the school day.	Bring your own device (BYOD) model where students bring a device of their choice to school.
All Andover teachers use a hybrid tablet/laptop using the Windows operating system.	HP Elitebook 1040 x360 Microsoft Office 365 Google for Education Schoology LMS Adobe Creative Suite In addition, each grade level utilizes a wide range of unique digital applications, digital textbooks and digital content to shape the curriculum.
Each “pod” of classrooms should be equipped with a shared high-speed networked color printer/copier.	HP Color LaserJet A3 MFPs
There will be one or more “maker spaces” equipped with 3D printers, document cameras, digital music keyboards, etc.	
The building will be equipped with one or more mobile audio video production studios that can be used to record	

System	Current Technology
performances, stream morning announcements, create student sponsored programming, etc.	

PROPOSED INSTRUCTIONAL TECHNOLOGY & DIGITAL LEARNING

Currently Andover High School has a combined engineering lab and digital learning/business suite of three rooms in the media center that houses robotics, engineering, business, video game, and web design courses. During the day, due to a lack of classroom space, some business and other classes are scheduled in a corner of the library. After school, the collaboration of the thriving ARC Robotics program and the DECA business club, both close to 50 students each in size, frequently spills out into the library-media center after school, competing with students looking to find a quiet study space. In addition to the instructional technology space in the media center, there is also a computer programming classroom on the 3rd floor for courses in C, Java, and AP Computer Science. In the current school, film production courses are offered in the Andover TV Studio which is also used to produce Public, Educational, Government (PEG) cable TV programming

In a new or renovated Andover High School building, the engineering suite and the digital learning / business suite would have two separate spaces, distinct from the media center, to give adequate space for curricular and extra-curricular offerings in engineering, computer programming, and digital learning/business.

The Digital Learning / Business suite in a new or renovated Andover High School will include three dedicated classrooms for Business & Entrepreneurship, Marketing & Advertising, and Video Game & Web Design. The area will include a multipurpose room that can be reserved and used by any teacher, department, or administrator in the school. The DECA Business club will use the area as a home base for meeting, development, and presentations, and this area will be designed to host financial literacy and business fairs and competitions.

Currently the single engineering classroom at Andover High School is used for classes during the day and the robotics club uses the lab after school. The 3D printers, laser cutters, and wood cutting machines are now housed in the hallway between the media center classrooms without adequate space, power, or ventilation.

In order to support the growing fields of Science, Engineering, Technology, and Mathematics (STEM), the Engineering and STEM Lab will include an Innovation Design Lab, a Green Energy Engineering Lab, a Robotics Lab and Robotics Project Area, a Computer Data Lab, a Woodshop with dust collection, and a Project-Based Learning Lab. These resources will be available to multiple classes and departments, along with a multipurpose room nearby for class presentations and school events such as robotics competitions.

A new or renovated Andover TV Cable Access Studio would continue to serve the dual purpose of hosting film production courses for Andover High School students and providing cable access television to town residents and cable subscribers.

The following technology features would be incorporated throughout an entire renovated or new Andover High School.

DESIGN IMPLICATIONS OF INSTRUCTIONAL TECHNOLOGY

- All classrooms need ample outlets to support the multiple technology needs.
- All student and faculty collaboration spaces should all have available power sources nearby.
- Special attention is needed for the placement of the technology within the room (specifically projectors and document camera) positioned to allow teachers and students to share their thinking and their work.
- Every classroom must be equipped with a sound enhancement system.

HEALTH SERVICES

The visits vary from mid 20's to 50 – average of 35-40 visits a day with additional medication visits. Nurse participate in regular IEP and 504 meetings and conduct all SBIRT, hearing, vision, postural screenings as required by DPH. The clinic frequently becomes overcrowded which results in students waiting in line to be evaluated. Nurses are responsible for collecting physicals and immunizations for all students and they also play a large role in case management and absenteeism.

DESIGN IMPLICATIONS FOR THE HEALTH CLINIC

- The clinic needs to be situated within close proximity to the office, preferably within the same space as the main office. The location fosters communication among all disciplines, administrative support, and multi-disciplinary assistance during emergencies. Easy access for emergency personnel is necessary during medical emergencies.
- Timely communication with the office personnel is necessary to monitor student attendance. Additionally, close proximity to the office allows for safer dismissal processes when students are dismissed due to illness.
- In terms of clinic layout, two to three bathrooms are required to manage issues related to infection control as there is considerable traffic from both students and staff. At least one bathroom must be handicap-accessible to offer privacy and assistance to students. Currently there is only one bathroom, and assistance cannot be provided without leaving the bathroom door open.
- The clinic requires adequate air exchange and good ventilation for disease and odor control and at least one additional room that can be used for procedures/discussions that require privacy/confidentiality. Currently, the nurse frequently has to leave the clinic altogether or ask students to wait outside the clinic. Handicap-accessible equipment will be necessary for safe student transfers. A sink that is adjusted to meet student height is also necessary, in addition to the separate sink for clinical staff.
- All workspaces require a separate sink and adequate counter space for medication administration and preparation of medical nutrition.

- An open layout with additional beds and chairs is necessary, with curtains for privacy around each bed. This area should provide space for at least 3-4 cots and 6-8 chairs. Examination tables need to be handicap-accessible and safe for students with mobility limitations or those transferring from a wheelchair. Privacy curtains must be present around each cot. All cots should be arranged so that students can be closely monitored by the nurse.
- At least one separate exam room is necessary for procedures that require privacy and/or confidentiality and to limit exposure of contagious illnesses.
- Three employee workstations (including staff for PreK) are needed, with adequate lighting, counter space, medication storage cabinets, a small refrigerator and an ice machine.
- Separate storage cabinets are needed for extra clothing and medical supplies, and there should be adequate lockable file drawers for all student charts.
- A locked medication cabinet must be affixed to an inside wall, per Department of Public Health requirements. At least two external phone lines and a confidential fax line are necessary.
- The external clinic doors must be secured with swipe access to ensure limited staff have entry to this area and that all staff entry is monitored.
- Students requiring mechanical ventilation need access to emergency outlets. One such outlet should be available in the clinic. The clinic should be connected to the school generator in case of power outage. Emergency medications are stored in temperature-sensitive cabinets and lack of heat/cooling would decrease medication effectiveness.

NON-INSTRUCTIONAL TECHNOLOGY

EXISTING

In terms of communications technology, APS deployed new state-of-the-art VoIP (Voice over Internet Protocol) digital handsets to every classroom in the district. The district also implemented Enhanced E911 calling to help pinpoint calls more precisely within a building. To further enhance communication and connectivity, APS upgraded wireless networks in all school buildings, effectively doubling coverage and capacity.

The APS application team implemented Registration Gateway Online Back-to-School Forms, as well as a new online student registration system. These changes allow parents to update back-to-school forms online and to enroll their students online. This information is then automatically integrated with the Student Information System (ASPEN). By implementing this system, the district eliminates data entry tasks for school administration and reduces the incidence of erroneous data being entered into Aspen. APS also updated the school nurse system (SNAP) with the necessary data.

The district's current standard model technology infrastructure for Andover High School buildings consists of the following infrastructure:

System	Current Technology
The building will be equipped with a bi-directional amplifier to assist public safety communications during an emergency.	
Each classroom and office should have a uniquely addressable digital 2-way speaker with scrolling text and strobe for silent alerting. Hallways may have “chained series” speakers. Large spaces require unique alerting and communication set-ups. Notification capability must also be present for spaces adjacent to the building.	Singlewire Informacast Notification platform AtlasAED speakers, strobes, message boards, etc.
There will be digital signage in hallways, auditoriums, common areas, and cafeteria to provide emergency alerts, event notifications, calendars, menus etc.	
All common areas and all external areas of the building will have high-definition, motion-activated, color, point-of-entry, networked surveillance cameras.	
All exterior doors and selected interior doors will be equipped with proximity-based access control devices to control access.	
The main entrance to the building will have a secured vestibule equipped with a visitor identification/management system.	LobbyGuard
All conference rooms will be 2-way video conferencing enabled.	
Food Services will be equipped with ruggedized, touch-enabled, mobile workstations to process lunch orders and payments.	
All hallway doors will be equipped with electronic locks that can be activated or deactivated as part of a centralized remote notification protocol. All classroom and office doors will be equipped with a locking mechanism that can be executed from inside the classroom.	
Bullet resistant glass should be implemented at all entrances. Shatter-resistant classroom glass should be utilized.	
The building will utilize an integrated Building and Energy management framework to digitally control lighting, HVAC, air handling, etc.	

VEHICLE/PEDESTRIAN CIRCULATION

The design of the new/renovated building must take into account the dismissal and arrival procedures relative to students that walk to school, parent and student drivers, staff cars, and buses. As it currently stands, daily arrival and dismissal results in a traffic jam in multiple directions that can delay buses and cars trying to exit the campus at the same time. Due to past accidents, the current plan focuses on

maximizing safety by providing a dedicated area for bus dropoff and separating parent drop-off traffic from students that are parking in the student lot. Factors to consider include the student and faculty parking lots, parent drop-off/pick-up areas, sidewalks, bike racks, and accessibility for special needs students and mobility challenged staff.

DESIGN IMPLICATIONS FOR VEHICLE/PEDESTRIAN CIRCULATION

The traffic plan for Andover High School should make sure to include the following in order of priority to optimize safety and student arrival at school.

- Prioritize the efficiency of bus operations including arrival, student drop-off, and departure from school and campus. Consider inclusion of a separate bus lane if possible.
- Consider a separate lane for pickup and drop off of special education buses
- Separate parent drop off traffic and circulation from student drivers that are parking
- Ensure safe pedestrian access to the campus with minimal crossing of bus and car traffic.
- Ensure safe bicycle access to the campus with minimal crossing of bus and car traffic.
- Consider traffic patterns that take into account the limited local road access surrounding campus
- In order to be ready for the transition to electric cars and buses, provide bus charging stations where the buses are waiting for pickup. Provide at least 4 dual cable EV chargers with at least 8 charging spots for teachers and students.

TRANSPORTATION POLICIES

In accordance with Massachusetts General Laws, Chapter 71, Section 68, transportation will be furnished according to the following criteria:

- At its discretion, the School Department may furnish transportation to students in grades 7 – 12, based on existing bus routes, provided that the parent(s) or guardian(s) of such students pay a Transportation User Fee in the amount established annually, by the Superintendent of Schools or his/her designee.
- School bus stops will be at centralized locations. Students are not entitled to street-by-street or door-to-door pickup and/or delivery. The distance over the most direct public ways between an eligible student's residence and the nearest school bus stop shall not exceed 1.0 mile, in accordance with state law.
- Measurement of the distance between an eligible student's residence and the nearest school he/she is entitled to attend will be from the property line of the student's residence to the nearest public access road of the school. When the measurement appears marginal or in dispute, the official school measuring device shall be the final method of determining the distance.
- Standees will not be permitted on school buses, except for emergencies.
- In executing this policy, Andover Public Schools will be governed by reason, concern for the safety of students in grades K-6 walking on public ways, and fiscal prudence.

FUNCTIONAL AND SPATIAL RELATIONSHIPS

EDUCATIONAL ADJACENCIES

Functional and spatial relationships and adjacencies are key to the successful design of the new facility. The relationships between classrooms and programs in the school define the programmatic, functional, spatial, and environmental requirements of the educational facility and become the basis for the design at the next phase. Andover High School depends on adjacencies for communication, collaboration, flexible grouping, and teaming. Providing learning areas both in and outside classrooms for small group intervention, individual workspaces, and additional instructional break-out rooms are critical in a school with an emphasis on inclusive practices.

The new building will:

- Provide for easy movement of both teachers and students.
- Accommodate small, flexible, fluid group instruction as well as regular group classroom instruction.
- Provide flexible space for large groups to congregate for assembly, exhibition, celebration, and instruction.
- Support common planning space and time for teachers.
- Enhance hands-on, project-based learning and authentic assessment practices such as performance assessment.
- Provide multiple scheduling options before, within, and after the school day for the differentiation of experiences for all students.
- Provide dedicated, adequate and appropriate space for specialty subjects.
- Provide positioning so that teachers can team and collaborate creating interdisciplinary project-based learning opportunities.

SITE ADJACENCIES

The school site encompasses 11.8 acres of developed and wooded land. The site includes the existing school building, additions, approximately 115 dedicated parking spaces, play structures and outdoor tables, open field, paved play areas and two ball fields.

- Parking area needs to be expanded and reconfigured. The existing parent and bus drop off and pick up is constrained and limits staff's ability to provide safe and convenient access during the morning arrival and afternoon departure times. The number of parking spaces is inadequate for the personnel assigned to this facility, leaving few spaces for parents, delivery vehicles, district employees, contracted service personnel and community visitors. Van-accessible parking spaces need to be added.
- Driveways and walkways need to be repaved because they are deteriorating and hazardous to vehicles and pedestrians. For ADA compliance, curb cuts need to be added at the main entrance, the slope/grade issues of some walkways should be addressed, handrails should be added by the front entrance steps, and an accessible path should be built leading to the playground.
- Signage needs to be installed for compliance with ADA.
- Exterior lighting needs to be upgraded for the safety and security of people, vehicles and the school building.
- Outdoor areas are needed that enable educational activities—such as an art or science class—to be conducted outside and take advantage of natural settings and environments.

SECURITY AND VISUAL ACCESS REQUIREMENTS

The safety and security of students, staff, and visitors within and around its facilities is a top priority of the Andover Public Schools. Simultaneously, the District seeks to present school buildings as community spaces that are welcoming, accessible, and intuitive to navigate. The District has formulated a school-specific Multi-Hazard Evacuation Plan for each school. This plan was last submitted to local public safety and law enforcement officials in May 2022. A Medical Emergency Response Plan was also most recently submitted to DESE in September 2022.

To enhance security-related communications, the District deployed new state-of-the-art VoIP (Voice over Internet Protocol) digital handsets to every classroom in the district. The District also implemented Enhanced E911 calling to help pinpoint calls more precisely within a building. To further enhance communication and connectivity, Andover upgraded wireless networks in all school buildings, effectively doubling coverage and capacity. The District also implemented bi directional amplifiers and direct radio communication between each school and dispatch. These radios are also used in day to day operations to ensure efficient and timely communication.

At the current Andover High School building, the main office is located on the second floor. The location of the main office in the current building creates challenges with supervision of visitors and students coming into the building. A security vestibule was created in 2019 which separates visitors from students coming into the building and allows for instant, secure background checks utilizing a LobbyGuard system.

In a new or renovated school building, there should be visual supervision of the main entrance from the main office, which would be located on the ground floor. There would be a separate, staffed entrance for visitors that would allow for secure check-in and background checks with the same functionality as our current building.

In addition, the current building has 55 exit doors which results in significant challenges for security when people are leaving out multiple exits or trying to enter through these doors. A new or renovated building should consolidate the number of exits to a minimum to enhance security while providing separate entrances near special education, health clinic, loading dock, and athletics.

In the current building, we have implemented strobe lights that are activated in common or loud areas when the public announcement system is being used. Right now, the chorus, band, field house, and auditorium areas have strobe lights that activate to alert occupants of a PA announcement. There are efforts being made to expand this system to the cafeteria, foyer, and gym. In a new or renovated building, strobe lights should be installed in common or loud areas for the purpose of alerting occupants to a public announcement which would be used to alert inhabitants of any intruders or security concerns.

A new or renovated AHS should include security cameras and motion alarms to cover public areas including hallways, external doors, and large group locations such as the cafeteria, gym, fieldhouse, and auditorium. The building should have the ability for school staff to view the number of external doors that are open at any one time. The building intrusion alarm, sensors and other components should be fully integrated with the access control and video monitoring system to allow for live viewing and alerts from cameras based on detection of motion and open doors.

