

**The Public Schools of Dover and Sherborn
Educational Technology Plan
Future Ready Learning
2016-2021**



**Mr. Anthony Ritacco, Director of Technology
Mr. William McAlduff, Jr., Interim Superintendent
Dr. Karen LeDuc, Assistant Superintendent**

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Introduction

The Public Schools of Dover and Sherborn strive to be “future ready,” where we inspire, challenge and support our students and educators in a global environment where today’s competencies - critical thinking, complex problem solving, collaboration, multimedia communication, managing projects using appropriate digital tools and resources - are at the forefront of teaching and learning.

To accomplish this, we present the 2016-2021 Education Technology Plan with a focus on five specific areas: Learning, Teaching, Leadership, Assessment, and Infrastructure. These areas are outlined below and provide a roadmap for our work over the next five years.

Led by the Director of Technology, in concert with educators, the Administrative Leadership Team, the Region Technology Integration Specialist, the District-wide Technology Committee, and the Technology Advisory Committee (TAC), this plan assesses the current use of technology and outlines future goals. It also provides authentic learning experiences where students are immersed in learning and where educators collaborate to integrate technology to support all aspects of the Dover Sherborn K-12 curriculum.

The Public Schools of Dover and Sherborn Educational Technology Plan is informed by *Future Ready Learning: Reimagining the Role of Technology in Education* (National Education Technology Plan, January 2016, U.S Department of Education <http://tech.ed.gov/netp/>.)

Many thanks to those who contributed to the writing of this plan.

Technology Advisory Committee

NAME	POSITION	AFFILIATION
Anthony Ritacco	Director of Technology	The Public Schools of Dover and Sherborn
Karen LeDuc	Assistant Superintendent	The Public Schools of Dover and Sherborn
Dianne Pappafotopoulos	Technology Integration Specialist	The Public Schools of Dover and Sherborn
Lauren Doherty	Member of Dover School Committee	The Public Schools of Dover and Sherborn
Frank Hess	Member of Sherborn School Committee	The Public Schools of Dover and Sherborn
Clare Graham	Member of the Dover Sherborn Regional School Committee	The Public Schools of Dover and Sherborn
William Stangel	Community member	
Ted Mosher	Community member	AZ Tech Group
Sushil Kumar	Community member	Pegasystems

District-wide Technology Committee

NAME	POSITION	AFFILIATION
Anthony Ritacco	Director of Technology	The Public Schools of Dover and Sherborn
Karen LeDuc	Assistant Superintendent	The Public Schools of Dover and Sherborn
Dianne Pappafotopoulos	Technology Integration Specialist and Technology Educator	The Public Schools of Dover and Sherborn
John Smith	Headmaster	Dover-Sherborn High School
Lori Aligheri	Technology Integration Specialist and Technology Educator	Dover-Sherborn High School
Paul Butterworth	Librarian	Dover-Sherborn High School
Carly Eckles	Mathematics Educator	Dover-Sherborn High School
Brian Meringer	Assistant Headmaster	Dover-Sherborn Middle School
Kim Phelan	Social Studies Educator	Dover-Sherborn Middle School
Adam Wiskofske	Science Educator	Dover-Sherborn Middle School
Olive Woodward	Librarian	Dover-Sherborn Middle School
Barbara Brown	Principal	Pine Hill Elementary School
Teresa Bien-Aime	Technology Educator	Pine Hill Elementary School
Nicole Darrah	Grade 5 Educator	Pine Hill Elementary School
Laurie Ryan	Librarian	Pine Hill Elementary School
Laura Dayal	Principal	Chickering Elementary School
Cheryl Chase	Librarian	Chickering Elementary School
Stephen Harte	Technology Integration Specialist and Technology Educator	Chickering Elementary School
Natalia Shea	Occupational Therapist	Chickering Elementary School

Technology Mission, Vision and Guiding Principles

Mission

To inspire, challenge, and support all students as they discover and pursue their full potential.

Vision

The Public Schools of Dover and Sherborn are committed to providing our students with the best possible education. As a system we seek to identify, implement and maintain best practices in the technology arena to enhance teaching and learning. The use of technology is seamlessly integrated in all aspects of schools' operations both instructionally and administratively.

We believe that all members of the school community should be able to:

- Use appropriate technology as one of the tools for teaching and learning.
- Have access to appropriate technology throughout the system.
- Use technology to enhance creativity, communication, collaboration, critical thinking, classroom management, differentiation, problem-solving and project based learning.
- Adhere to the Digital Citizenship and the Internet Acceptable Use Policy and understand the ethical issues related to using technology.

In order to realize this vision, we must continually respond to changes in technology through an ongoing process of review, reflection and evaluation of the effective use of technology. This process includes maintaining a strong technology infrastructure, providing ongoing technical support, and investing in a comprehensive and continuous technology professional development program.

Guiding Principles

Technology is a tool that supports today's skills including information seeking, analysis, reasoning, problem solving, communication, interpersonal, collaborative, and self-direction.

- Technology supports the diverse learning needs of all students and heightens operational and instructional efficiency among personnel (see Learning and Teaching goals).
- All personnel must be supported in their use of technology with working, up-to-date technology, timely technical support, and continuous, meaningful, high quality professional development and coaching (see Teaching, Leadership, Infrastructure goals).

- Meaningful technology use encourages active, independent, and lifelong learning (see Learning and Teaching goals).
- Technology helps facilitate learning by expanding it beyond the walls of the classroom (see Infrastructure goals).
- Students and all personnel will have access to the tools and technology necessary to fulfill their respective role (see Infrastructure goals).

Setting the Context

The Public Schools of Dover and Sherborn Technology Action Plan

Numerous national and state technology planning initiatives have provided a framework for this District Technology Plan and Action Plan.

The National Education Technology Plan (NETP), January 2016, *Future Ready Learning: Reimagining the Role of Technology in Education*, <http://tech.ed.gov/netp/> sets a national vision and plan for learning enabled by technology through building on the work of leading education researchers. It is framed in the areas of learning, teaching, leadership, assessment, and infrastructure. Our action plan will mirror these areas, with assessment and infrastructure providing the building blocks for teaching, learning and leadership.

The International Society for Technology and Education (ISTE) is the leading professional organization for computer teachers and educational technology leaders. In 2008, ISTE published standards for students, educators, administrators and technology coaches. These standards, while currently under review, have been incorporated into the teaching and learning at Dover Sherborn, see link: <http://www.iste.org/standards/iste-standards>. Additionally, ISTE outlines 14 essential conditions to effectively leverage technology for education, <http://www.iste.org/standards/essential-conditions>, which mirror the NETP focal points of shared vision, shared leadership, student centered learning, robust infrastructure and assessment.

The Massachusetts Department of Elementary and Secondary Education (MA DESE), in 2008, published technology literacy standards and expectations for students and educators <http://www.doe.mass.edu/odl/student.html> and also published Local Technology Plan Guidelines, <http://www.doe.mass.edu/odl/planning.html>, through 2015. The Public Schools of Dover and Sherborn are fully aligned to these documents. A draft of the updated Massachusetts Technology Literacy Standards and Expectations <http://www.doe.mass.edu/odl/student.html> was also used in this plan.

Each of these documents informed the District Technology Plan, with the tenets of the NETP framing the Action Plan. Five areas were identified for our focus: Learning, Teaching, Leadership, Assessment, and Infrastructure. Each is outlined below with an essential question, goals, objectives and an action plan.

I. Learning

Essential Question: How do we inspire, challenge and support today's learning?

All learners will have engaging and empowering learning experiences in both formal and informal settings that prepare them to be active, creative, knowledgeable, ethical participants in our globally connected society. (NETP Section 1: Learning)

Goals:

- 1.) Design, develop, and implement learning resources to create equitable and accessible learning experiences for all students (NETP Section 1: Learning, bullet 2 and 3, p. 82).

WHAT	HOW	RESOURCES	OUTCOME	TIMELINE
I.1.a Use technology to develop critical thinking, complex problem solving, collaboration, and multimedia communication skills, incorporating such in Aspen curriculum documents	<p>a. Educators will research technologies for use within grade level spans and/or content areas</p> <p>b. Educators will pilot technologies to determine applicability</p> <p>c. Professional development will be provided for all technology and resources</p> <p>d. Department / grade levels will work together to revise curriculum and update curriculum maps in Aspen</p>	Apps, software, web-based tools, webinars, workshops and other resources	<p>a. Publish a compilation of “go to” technologies K-12</p> <p>b. Research, pilot and publish technologies for use within grade level spans and/or content areas</p> <p>C. Ensure that curriculum documents meet the Guiding Principles (p.1) established in the DS Tech Plan for Future Ready Learning</p>	<p>a. 2016 - 2017</p> <p>b. 2016-2017</p> <p>c. 2017-2021</p>
I.1.b. Investigate learning resources (i.e. as Universal Design for Learning, project-based learning, etc.) to ensure equity and	<p>a. Research and review learning resources</p> <p>b. Develop lesson/unit plans that incorporate learning resources</p>	<p>a. Universal Design for Learning</p> <p>b. Project Based Learning</p>	<p>a. Research, review, and pilot identified resources</p> <p>b. Use the resources to</p>	<p>a. 2016- 2018</p> <p>b. 2017- 2019</p>

accessibility of the learning experience		c. Open Educational Resources d. IT Staff e. Building Staff	ensure equity and accessibility of the learning experience	
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II. Teaching

Essential Question: How do we inspire, challenge and support educators for today's classroom?

Educators will be supported by technology that connects them to people, data, content, resources, expertise and learning experiences that empower and inspire them to provide more effective teaching for all learners. (NETP Section 2 Teaching.)

Goals:

- 1.) Design professional learning opportunities to support and develop educators as fluent users of technology to increase their digital literacy and to create compelling learning experiences that improve learning, assessment and instructional practices; develop creative and collaborative problem solvers; and increase social awareness (NETP Section 2: Teaching bullet 1, p. 83).

WHAT	HOW	RESOURCES	OUTCOME	TIMELINE
<p>II.1.a. Design professional learning opportunities to support and develop educators as fluent users of technology; creative and collaborative problem solvers; and socially aware professionals</p>	<p>a. Develop educators' understanding of current research - supported practices and best use of emerging online technologies to support learning</p> <p>b. Incorporate PD for teachers to deliver curriculum content that addresses more student-centered classroom experiences</p> <p>c. Develop expectations for technology integration in the classroom (that align with available resources) to enhance teaching and learning for all students</p>	<p>a. Tiers of Technology Integration Rubric</p> <p>b. SAMR Model Substitute, augment, modify, redefine</p> <p>c. Provide models of best practices for teaching and learning</p>	<p>a. Create and implement student-centered learning environments that foster critical thinking, complex problem solving, collaboration, and multimedia communication</p> <p>b. Create and use a district-wide searchable database to communicate and share technology-rich, student-centered teaching resources.</p>	<p>2017-2019</p>
<p>II.1.b. Provide educators with professional development</p>	<p>a. Offer differentiated professional development throughout the year</p>	<p>a. Educators, tech specialists, online resources</p>	<p>a. Create compelling learning experiences</p>	<p>2017-2019</p>

<p>experiences to increase their digital literacy and to create compelling learning experiences to improve learning, assessment and instructional practices</p>	<p>through a variety of methods (online courses, workshops, individual assistance, weekly technology “tryout” exercises)</p> <p>b. Offer ongoing PD in areas of need as based on our tech plan goals</p> <p>c. Promote outside conferences and PD to reinforce curriculum goals</p> <p>d. Look for opportunities to share, collaborate and investigate outside professionals/experts to visit classrooms to further student learning on specific curriculum topics</p> <p>e. Provide PD opportunities on Project Based Learning and Universal Design for Learning and other relevant instructional strategies</p>	<p>b. Internal/ external technology workshops, and conferences</p>	<p>through Project Based Learning and Universal Design, and other related technologies, as documented in Aspen maps, blogs</p>	
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III. Leadership

Essential Question: What role does leadership play in supporting technology to inspire, challenge and support teaching and learning in schools?

Goals:

- 1.) Develop funding models and plans for sustainable technology school-based plans through the technology plan supplement (NETP Section 3: Leadership, bullet 3, p. 84).
- 2.) Develop clear communities of practice for leaders and educators at all levels that act as a hub for setting vision, understanding research, and sharing practices (NETP Section 3: Leadership, bullet 4, p. 84)

WHAT	HOW	RESOURCES	OUTCOME	TIMELINE
<p>III. Goal 1. Develop funding models and plans, through school-based technology plan supplements, for sustainable technology hardware, software, and infrastructure</p>	<p>a. With building-based technology team develop and publish technology plan supplements that include action steps, funding sources for sustainable hardware, software and infrastructure</p>	<p>MA Digital Literacy Standards</p> <p>DS and National Education Technology Plan (NETP 2016)</p> <p>Massachusetts Curriculum Framework</p> <p>DS Tech Plan Supplements</p>	<p>a. Update and publish the District Technology Plan and Supplements</p> <p>b. Create a funding model to include action steps, funding sources for sustainable hardware, software and infrastructure that is identified in the Tech Plan Supplements</p>	<p>2016-2017</p>
<p>III. Goal 2. Develop clear communities of practice for leaders and educators at all levels that act as a hub for setting vision, understanding research, and sharing practices</p>	<p>a. Convene building-based technology leadership team, inclusive of administrators and educators to set vision, understand research and share practices</p> <p>b. Establish building-</p>	<p>a. A consistent calendar of technology-related meetings with educators, tech specialists and administrators</p> <p>b. Ongoing PD</p>	<p>a. Ensure that the Tech Plan and Supplements are working, up-to-date and viable to the teaching and learning community.</p> <p>b. Enable teachers and</p>	<p>2016 and ongoing</p>

	based cohesive communities of practice to create cycles for sharing most recent research and effective practices		students to enhance technology skills for effective teaching and learning.	
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IV. Assessment

Essential Question: How do we continue to improve assessments using the data effectively and appropriately to communicate what students know and are able to do?

Goals:

- 1.) Create and implement technology based assessments across all disciplines. (NETP Section 4: Assessment, bullet 4, p. 85)
- 2.) Implement models of assessment that include ongoing gathering and sharing of data for continuous improvement of teaching and learning, while updating privacy practices and policies to ensure protection of student information. (NETP Section 4: Assessment, bullet 1, p. 84)
- 3.) Design, develop and implement communication pathways that give students, educators, families and other stakeholders timely and actionable feedback about student learning to improve achievement and instructional practices. (Aspen, Google, eblasts, Apps for assessment, Social media, etc.) (NETP Section 4: Assessment, bullet 3, p. 84)

WHAT	HOW	RESOURCES	OUTCOME	TIMELINE
IV. Goal 1. Create and implement technology based assessments across all disciplines	a. Convene teams of educators to determine and administer common measures b. Document common measures in curriculum maps c. Expand the use of ongoing, formative, and embedded assessments d. Record and communicate formative and summative data through various apps and software in the classroom e. Provide ongoing	<u>MSPA</u> How to information: Other district examples of DDM Actual assessments: 1. Teacher-created assessment 2. Aspen or Google 3. Approved apps and online tools, see software map	a. Publish online lists, accessible to teachers, of all approved software apps and online tools b. Create a process for teachers to request or suggest new apps or online tools to be added to the approved list. c. Ongoing updated common measures in all curriculum maps. d. At least one PD workshop per	2016-2018

	support and training to strengthen teachers skills in how to interpret data to better meet students needs		academic year which includes at least one component of training on the use of an assessment app or online tool, or on the interpretation of student data	
IV. Goal 2. Implement model of assessment that includes ongoing gathering and sharing of data for continuous improvement of teaching and learning, while updating privacy practices and policies to ensure protection of student information	<p>a. Implement Massachusetts Student Privacy Alliance(MSPA)</p> <p>b. Work collaboratively with administration and technology department to assure secure environment within the school building</p> <p>c. Provide professional development for educators and information for families around privacy and information protection</p>	<p>a. MSPA</p> <p>b. Sample: See Wayland's approach, with very helpful links</p>	<p>a. Revisit and revise, as needed, Acceptable Use Policy (AUP) to include a district policy statement on student privacy</p> <p>b. Publish web page, accessible to parents and staff, with statement of district policy on student privacy, including a list of relevant web resources</p> <p>c. Clear statement of district policy on student privacy in each individual school's handbook</p> <p>d. At least one PD workshop or faculty meeting devoted to providing training on student privacy and protection of information</p>	2016-2018

<p>IV. Goal 3. Design, develop and implement communication pathways that give students, educators, families and other stakeholders timely and actionable feedback about student learning to improve achievement and instructional practices</p>	<p>a. Research and implement a variety of communication tools to provide feedback, i.e. Aspen, Google</p> <p>b. Provide professional development for educators to implement the communication tools to provide feedback</p> <p>c. Provide information to families on how to use the communication tools</p>	<p>a. Aspen, Google</p>	<p>a. Publish instructional document on accessing the Aspen portal for families</p> <p>b. Publish instructional document on accessing student gmail accounts</p> <p>c. Publish instructional document on accessing Google Classroom</p> <p>d. Publish instructional documents on any other relevant technologies used for student feedback or family communication</p>	<p>2017-2019 and ongoing</p>
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V. Infrastructure

Essential Question: How do we ensure that technology integration inspires, challenges and supports the academic community?

Goals:

- 1.) Ensure that students and educators have broadband access to the Internet and adequate wireless connectivity (NETP Section 5: Infrastructure, bullet 1, p. 85)
- 2.) Ensure that every student and educator has at least one internet access device and appropriate software and resources for research, communication, multimedia content creation, and collaboration for use in (and out of) school (NETP Section 5: Infrastructure, bullet 2, p. 85)
- 3.) Support the development and use of openly licensed educational materials to promote innovative and creative opportunities for all learners and accelerate the development and adoption of new open technology-based learning tools and courses (NETP Section 5: Infrastructure, bullet 3, p. 85)
- 4.) Draft and implement sustainable plans for infrastructure, hardware and software concerns that include upgrades of wired and wireless access as well as device refresh plans and sustainable funding sources while ensuring the safety and protection of student data (NETP Section 5: Infrastructure, bullet 5, p. 86)

WHAT	HOW	RESOURCES	OUTCOME	TIMELINE
V. Goal 1. Ensure that students and educators have broadband access to the Internet and adequate wireless connectivity	<p>a. Monitor bandwidth speeds and upgrade when necessary.</p> <p>b. Monitor and upgrade all wireless connectivity as needed.</p> <p>c. Provide and maintain a redundant ubiquitous high speed connection to both wired and wireless internet.</p>	<p>a. IT Staff</p> <p>b. Educators and Tech Specialists</p> <p>c. Apps and softwares</p>	<p>a. Continue to stay current with the latest network and broadband speeds.</p> <p>b. Maintain at least 200 MB of speed to the internet.</p> <p>c. Maintain at least 1 GB of speed internally and 10GB from</p>	<p>a. 2016 and ongoing</p> <p>b. 2016-2017</p> <p>c. 2018-2019</p>

			IDF's to MDF.	
<p>V. Goal 2. Ensure that every student and educator has at least one internet access device and appropriate software and resources for research, communication, multimedia content creation, and collaboration for use in (and out of) school</p>	<p>a. Research models, i.e. BYOD, 1:1, school-based devices, to ensure that every student and educator has at least one internet device and appropriate software and resources needed</p> <p>b. Upgrade and maintain Acceptable Use Policy (AUP)</p> <p>c. Investigate take home technology for student use</p>	<p>a. IT Staff</p> <p>b. Educators and Tech Specialists</p> <p>c. Airwatch reporting</p> <p>d. Tech Plan Supplements</p>	<p>a. Conduct research on models, by building, to determine appropriate solutions</p> <p>b. Inventory all devices</p> <p>c. budget for additional technologies, as needed</p>	<p>a. 2016-2017</p> <p>b. 2016-2021 (ongoing)</p> <p>c. 2016-2021</p>
<p>V. Goal 3. Support the development and use of openly licensed educational materials to promote innovative and creative opportunities for all learners and accelerate the development and adoption of new open technology-based learning tools and courses</p>	<p>a. Research and use the best open source softwares for curriculum deployment.</p> <p>b. Continue to develop and use the software map developed for each school.</p> <p>c. Continue to use the Massachusetts Student Privacy Alliance to ensure the applications students use are safe and protected.</p>	<p>a. IT Staff</p> <p>b. Educators and Tech Specialists</p> <p>c. MSPA</p>	<p>a. Create a process for teachers to request or suggest new apps or online tools to be added to the approved list.</p> <p>b. Continue to update the software map for each district.</p>	<p>a. 2016-2017</p> <p>b. 2016-2021</p>
<p>V. Goal 4. Draft and implement sustainable plans for infrastructure concerns that include</p>	<p>a. Continue with building-based hardware replacement cycle to ensure all</p>	<p>a. Tech Plan Supplements</p> <p>b. IT Staff</p>	<p>a. Use the MSPA website to ensure that all apps have been vetted.</p>	

<p>upgrades of wired and wireless access as well as device refresh plans and sustainable funding sources while ensuring the safety and protection of student data</p>	<p>devices stay up to date b. Update comprehensive map and database of connectivity, device access, use of open licensed educational resources, and their uses across the country</p>	<p>c. MSPA</p>		
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